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Research Report

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The Road to Reintegration

Status and Continuing Support of the U.S. Air Force's Wounded, Ill, and Injured

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About This Report

The United States has been at war for well over a decade. As is inevitable, war imposes costs on a country, not least of which is the impact on the country's service members. Although the U.S. Air Force has suffered fewer casualties than some other services, many airmen have been injured in hostile or combat-related incidents. The Air Force wanted to understand the well-being of its wounded, ill, or injured members, including their quality of life and the challenges that will confront them in the long term following separation or retirement. It was also interested in gauging the quality of support given to its veterans who are undergoing medical discharge. The Air Force turned to the RAND Corporation's Project AIR FORCE (PAF) for help in assessing these areas. Since the Air Force's request, RAND PAF has surveyed the Air Force's wounded warriors three times: in 2011, 2014, and 2016. This report describes the results and analysis of the most recent survey, which we call wave 3. It should interest those concerned with the status of the Air Force's wounded warriors and the quality of support they are receiving.

The research reported here was commissioned by the Assistant Secretary of the Air Force for Manpower and Reserve Affairs, the director of the Air Force Directorate of Services, and the Air Force Surgeon General and conducted within the Workforce, Development, and Health Program of RAND PAF as part of a fiscal year 2016 project entitled "Status and Continuing Support of the U.S. Air Force's Wounded Warriors: Wave 3."

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Background and Purpose

The U.S. Air Force wanted to understand the well-being of airmen who experience injuries and illness of sufficient severity to call into question their continued Air Force service. Its initial focus was on those injured in combat or hostile-related situations; however, over time, it broadened its focus to include all wounded, ill, and injured airmen. In addition, the Air Force wanted to assess the challenges that impede their reintegration into society in the long term, with an eye toward improving services provided and enabling wounded airmen to become fully functioning members of society. It also wanted to take advantage of ongoing research into how best to do so. To begin the process of gaining this insight, the Air Force asked RAND Project AIR FORCE (PAF) for assistance in gauging the current status of the Air Force's wounded warriors, including their use of and satisfaction with the Air Force programs designed to serve them. Accordingly, PAF surveyed the Air Force's wounded warriors for the first time in 2011 (Sims et al., 2015) and the second time in 2014 (Sims et al., 2016). In this report we present the findings from the third survey in this series, which was fielded in 2016. To address the challenges identified, we offer recommendations for the Air Force's consideration.

Methods

At the request of the Air Force, we focused on airmen enrolled in the Air Force Wounded Warrior (AFW2) program. Our cohort includes 713 airmen injured in combat or as a result of hostile action, as well as those with other injuries or illnesses that were severe enough to warrant out-processing from the Air Force; 38 percent, or 270, responded. Given our population of interest, we expected high prevalence and severity of psychosocial challenges as was documented in previous research among the combat injured (Sims et al., 2015; Sims et al., 2016). Additionally, given the proportion of airmen whose injuries are related to combat, our sample includes airmen with a higher prevalence of mental health challenges relative to the broader Air Force population.

For our previous efforts, we developed a model that informed a survey to assess well-being on a range of critical indicators and services designed to enhance well-being, such as the AFW2 program (Sims et al., 2015). In previous surveys, we assessed the domains of psychological health, interpersonal relationships, unemployment, financial stability, and utilization and perceptions of the AFW2 program, all of which we retained for the current effort. For this survey, we added new questions to assess physical health and utilization and perceptions of more recently developed Air Force programs that may be available to these airmen: Recovering Airmen Mentorship Program (RAMP), Military Adaptive Sports Program, Education and

Employment Initiative (E2I), and Operation Warfighter, as well as the more-established Transition Assistance Program (TAP) and Airman and Family Readiness Centers. In sum, this investigation represents an independent study to determine the array and extent of the needs of intended program recipients, assess how well the programs meet these needs, and provide suggestions for program improvement.

Findings

Mental or Physical Health Problems Were Frequent

As expected for our population of airmen being considered for medical retirement, the vast majority of airmen reported having been diagnosed with both physical and psychological health conditions, with 91 percent reporting at least two conditions (out of the 19 for which we surveyed). High percentages of airmen reported diagnoses for physical or mental conditions (90 and 80 percent, respectively). In addition, current symptoms of mental health problems were common, as more than two-thirds of airmen screened positive for current post-traumatic stress disorder (PTSD) or depression (68 percent).

Airmen Received Care in Multiple Locations, but Most Often in a Military Treatment Facility

The health care landscape that these airmen must navigate is complex. Almost half of those with physical conditions reported ten or more health care visits over the past year. They were seen in a variety of locations, with the most frequent being a military treatment facility (MTF) (68 percent). Of those who screened positive for current mental health conditions (i.e., PTSD or depression), 91 percent reported having received treatment over the past year, and three-quarters received both medication and therapy. As with health care for physical conditions, treatment for mental health conditions was most commonly received at MTFs.

For Physical and Mental Health Conditions, About One-Third of Airmen Reported Difficulty in Getting Treatment, and Reported Barriers to Care

For both physical and mental health conditions, one-third of airmen reported experiencing difficulty obtaining treatment at some point in the past year. Of these airmen, the most common barriers to obtaining treatment were difficulty scheduling an appointment, not knowing where to get help or who to see, believing in one's own ability to handle the problem, and believing that the care available is not of very good quality. Specific to mental health care, commonly endorsed institutional and cultural barriers included the belief that getting help could harm their career (44 percent), concerns about loss of respect from friends and family (33 percent), loss of respect from supervisors (26 percent), and related concerns over getting or keeping a security clearance (31 percent).

Coordination of Care Among Providers Was Uneven

Only 37 percent of those who reported having seen two or more providers in the past year were assigned a lead care coordinator.[1] Sources of help with care coordination included the airmen themselves (80 percent), health providers such as doctors (50 percent), and care coordination professionals such as (nonfederal) Air Force Recovery Care Coordinators (RCCs) (25 percent). Only half reported that their providers were usually or always aware of other care provided, and 16 percent reported they never were. While more than half of respondents were satisfied with their care coordination, a substantial minority (23 percent) were either dissatisfied or very dissatisfied.

A Substantial Minority of Airmen Did Not Have a Primary Supporter

A primary supporter is the person who most often helps an airman deal with problems that come up. These were typically spouses or partners (49 percent). For most airmen with a primary supporter, the same person provided the greatest sense of emotional security and well-being (85 percent). Of those who did not have a primary supporter (17 percent), 42 percent said it was either because they had no one available or because desired help was not obtained.

The Unemployment Rate Among Airmen Who Were Not Serving Was High

The unemployment rate was 41 percent, excluding airmen currently serving (and hence employed) and who were not in the workforce, such as those who reported that they were disabled and not working, retired, or seeking an education. The most frequently reported barriers among those who were not employed were feeling uncomfortable or anxious when thinking about working, feeling not physically capable, or lacking confidence in themselves and their abilities.

Satisfaction with Air Force Nonmedical Case Management Was Generally High

The AFW2 program was widely utilized, with 74 percent saying they received at least one type of help or service. Of those who received services, 87 percent indicated they were overall satisfied with the program. Despite the overall positive perceptions of AFW2 program users, there were some aspects of the AFW2 program that were perceived less favorably by users. For example, 27 percent of airmen who had received services from AFW2 reported having been contacted no more than once every few months by an AFW2 case manager and, of these airmen, more than half (58 percent) considered this amount of contact insufficient.

Rates of uptake of other programs varied widely, ranging from 5 percent for RAMP to 77 percent for TAP. Some programs were relatively more recently developed, which might help to explain their lower rates of uptake. In addition, some programs have restricted eligibility or may

[1] Note, however, that only those with physical conditions would be automatically assigned a lead care coordinator.

appeal to a narrower subset of airmen than others. Finally, even if an airman is eligible for a given program, actual uptake depends on individual goals and desires. Programs with sufficiently high uptake to permit assessment of perceptions, such as TAP, E2I, and the Military Adaptive Sports Program, were regarded favorably by program users. Many airmen (60 percent) had also taken advantage of the offerings at Airman and Family Readiness Centers, and of those, 92 percent reported overall satisfaction with services received.

Conclusions and Recommendations

Below we describe our conclusions and recommendations, which are grouped into medical and nonmedical care.

Medical

- **Consider providing assistance from a professional with a designated care coordination role to improve care coordination outcomes.** While more than half of respondents were satisfied with their care coordination, a substantial minority (23 percent) were either dissatisfied or very dissatisfied. Most airmen reported gaps in care coordination, with only 37 percent having been assigned a lead care coordinator and one-quarter of airmen receiving assistance with care coordination from a care coordination professional such as an RCC. Airmen who had received care coordination assistance from a professional, such as an RCC, reported greater satisfaction with care coordination than those who had not. Although this correlational finding does not indicate that assistance from a care coordination professional causes greater satisfaction with care coordination, it is consistent with the idea that care coordination professionals may have beneficial effects on care coordination outcomes.
- **Continue consideration of system capacity and navigability initiatives to address the complexity and lack of capacity of the health care system.** The complexity and lack of capacity of the health care system are persistent problems in the treatment of both physical and psychological conditions. The complexity of the health care system is underscored by the findings that most airmen had received health care in multiple settings in the past year, and that not knowing where to get help or who to see was a commonly endorsed barrier to care for both physical and psychological conditions. The lack of system capacity, which has been identified as a critical issue in other recent studies, is further highlighted in the current study by the finding that difficulty scheduling an appointment was a commonly endorsed barrier to receiving health care for both physical and psychological conditions.
- **Continue efforts to collect and publicize data on the quality of care provided and engage airmen in discussions of treatment options.** Concern about the quality of care available to airmen was also commonly endorsed as a barrier to seeking treatment for

both physical and mental conditions. To inform airmen's decisions about the treatment options that are best for them, we recommend continuing efforts to collect and publicize data on the quality of care provided and engage airmen in discussions of treatment options.

- **Consider revising Department of Defense (DoD) policies on the confidentiality of mental health treatment.** Concerns regarding confidentiality deterred some airmen from seeking treatment because they believed it would engender negative perceptions among their peers or limit their ability to keep or obtain a security clearance. We recommend, as have others, that DoD consider revising its policies on military mental health confidentiality standards for service members in order to align more closely with those applied in the civilian sector.

Nonmedical

- **Connect airmen with social support deficits to available resources that provide social support and integrate family and friends into airmen's recovery process.** Almost one in five in our survey reported lacking a primary supporter. Individuals with social support reported that it is integrated into many important activities of reintegration. Thus, while relatively few airmen reported not having primary supporters, providers should be aware that deficits in social support are an issue for some airmen, and should seek to make services available that are designed to alleviate these deficits. They should also continue to integrate family members and friends into airmen's recovery.
- **Continue providing employment assistance to transitioning airmen.** Those airmen who are not currently serving have a high unemployment rate. It is difficult to find employment before leaving military service. Airmen who responded to our survey were at the point of transition, and are very likely to need employment assistance. The Air Force employment programs that we assessed are viewed by those who have used them as being helpful and addressing some of the common barriers to employment.
- **Continually assess the uptake and performance of new programs for wounded airmen and consider revisions or discontinuation as warranted.** Although many nonmedical programs offered by the Air Force enjoyed high saturation among respondents, and many also had reportedly high satisfaction, some programs had lower uptake. This may be due to a variety of reasons but suggests continued monitoring is warranted. For those whose uptake is consistently low and whose eligibility is not commensurately restricted to a particularly vulnerable subgroup, it may be worthwhile to consider marketing initiatives to increase awareness. Moreover, assessment of the benefit of programs should be ongoing. Programs or services with both low uptake and low efficacy may warrant revisions or discontinuation.

Acknowledgments

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Most of all, we thank the wounded warriors who took the time to answer our questions and offer insight into their current status.

Abbreviations

A&FRC	Airman and Family Readiness Centers
AFPC	Air Force Personnel Center
AFW2	Air Force Wounded Warrior
BLS	Bureau of Labor Statistics
CAHPS	Consumer Assessment of Health Plans Survey
CBT	cognitive behavioral therapy
CI	confidence interval
CPT	cognitive processing therapy
CRP	Comprehensive Recovery Plan
DES	Disability Evaluation System
DoD	U.S. Department of Defense
E2I	Education and Employment Initiative
EBT	evidence-based treatment
HHS	U.S. Department of Health and Human Services
ICD-9	International Classification of Diseases, Ninth Revision
IPT	interpersonal therapy
LL	lower limit
MASP	Military Adaptive Sports Program
MDD	major depressive disorder
MHS	Military Health System
MTF	military treatment facility
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OWCP	Office of Warrior Care Policy
OWF	Operation Warfighter
PAF	RAND Project AIR FORCE
PC-PTSD	Primary Care–PTSD
PE	prolonged exposure
PTSD	post-traumatic stress disorder
RAMP	Recovering Airman Mentorship Program
RCC	Recovery Care Coordinator
RCP	Recovery Care Plan
RSM	recovering service member
TAP	Transition Assistance Program
TBI	Traumatic Brain Injury

UL	upper limit
VA	U.S. Department of Veterans Affairs
VHA	Veterans Health Administration
WII	wounded, ill, or injured

Chapter 1. Introduction

The U.S. Air Force wanted to understand the well-being of airmen who experience injuries and illness of sufficient severity to call into question their continued Air Force service. In addition, it desired a sense of their quality of life and the challenges that impede their reintegration into society in the long term, at least through the span of time the Air Force has purview on that quality of life. The Air Force turned to the RAND Corporation's Project AIR FORCE (PAF) for help in assessing these areas. The Air Force has a longstanding interest in these issues, and prior studies have longitudinally assessed the well-being and needs of a cohort of airmen injured in combat and by hostile action with two surveys fielded in 2011 and 2014 (Sims et al., 2015; Sims et al., 2016). This report describes the findings and recommendations from the third iteration of this study, a survey conducted in 2016 to assess the well-being and needs of a cohort of airmen whose injuries were sustained in or outside of combat. Although some notable overlap in content reflects the ongoing nature of the inquiry, the data presented here are new and represent a new cohort that is more broadly defined than in the previous efforts (i.e., all wounded, ill, and injured within the Reintegration and Transition phase and the first few months of the Stabilization and Resolution phase of the Recovery Coordination Process). In this chapter, we provide context for this study by briefly reviewing the history and development of the Air Force's key program for addressing the reintegration needs of wounded, ill, and injured airmen, the Air Force Wounded Warrior (AFW2) program; describing the overall project objectives and background; and detailing the purpose and organization of this report.

Overall Project Objectives and Background

When this project originated, its goals included seeking broad and ongoing perspectives on the challenges that accompany reintegration for wounded, ill, and injured airmen and generating actionable recommendations to inform the Air Force's ongoing efforts to facilitate reintegration. At the request of the Air Force, we focused on surveying airmen enrolled in the AFW2 program. Since its inception in 2005 (then called Palace HART [Helping Airmen Recover Together]), the AFW2 program has been one of the key nonmedical Air Force programs serving combat-injured airmen. In the recent past, the AFW2 program expanded its eligibility criteria to include airmen injured in situations other than combat. Paralleling this expansion, our cohort for wave 3 was also expanded to include airmen injured in combat or as a result of hostile action, as well as those with other injuries or illnesses of sufficient severity that these airmen are out-processing from the Air Force.

The initial desire for broad perspectives on reintegration well-being drove a holistic orientation. Guided by our purview of the literature documenting challenges experienced by

veterans of the Vietnam War, and known concerns of the current conflicts, we developed a notional model that informed our initial survey to assess well-being in multiple domains (Sims et al., 2015). These domains included physical health, mental health, interpersonal relationships, unemployment, and financial status. The literature suggests that each domain is important. Moreover, each is a potential target for interventions and policies that the Air Force could implement.

For the current study, we continued to seek broad perspectives on the challenges of reintegration, retaining coverage of the same domains examined in previous waves. Given that our population for wave 3 included combat-injured airmen, whose primary injuries were of a psychological nature in the first and second waves (Sims et al., 2015; Sims et al., 2016), we expected high prevalence and severity of psychosocial challenges. Subsequent to the expansion of AFW2 eligibility criteria to include all wounded, ill, and injured airmen, the percentage of AFW2 enrollees whose primary injuries were of a physical nature increased relative to those of the cohorts studied in the first and second waves. In light of this change to the population of AFW2 enrollees, we expanded our assessment of physical functioning to include physical conditions, treatment received for these conditions, and care coordination. Finally, we continued to assess airmen's utilization and perceptions of Air Force services, focusing on the AFW2 program as in previous waves, and asking about utilization and perceptions of the broad array of other programs that may be available to these airmen, such as the Recovering Airmen Mentorship Program (RAMP), the Military Adaptive Sports Program (MASP), the Education and Employment Initiative (E2I), Operation Warfighter (OWF), the Transition Assistance Program (TAP), as well as Airman and Family Readiness Centers (A&FRCs). Table 1.1 shows the dates of survey administration, cohorts studied, and content covered for each of the three survey waves that have been completed for this project.

Table 1.1. Overview of Three Waves of Surveys of Wounded, Ill, and Injured Airmen Served by AFW2

Overview of Three Waves			
	Wave 1	**Wave 2**	**Wave 3**
Date fielded	Fall 2011	Spring 2014	Fall 2016
Cohort	872 AFW2 enrollees with combat injuries; 459 responded	1,219 AFW2 enrollees with combat injuries; 527 responded: 205 who had also completed wave 1 survey, and 322 new AFW2 enrollees	713 enrollees in AFW2, all wounded, ill, and injured; all in the final stages of medical retirement or first six months of handoff to VA; 270 responded

Overview of Three Waves			
	Wave 1	**Wave 2**	**Wave 3**
Survey content	Service History Mental Health (PTSD and Depression) Mental Health Treatment History, Barriers, and Preferences General Health and Role Limitations **Perceived Social Support** Presence of Primary Supporter Employment Status; **Presenteeism/Absenteeism and Work Identity** Barriers to employment; Income and **Financial Strain** **Housing Situation** Perceptions of AFW2 program and Air Force Care Coordinator Program	Service History Mental Health (PTSD and Depression) Mental Health Treatment History, Barriers, and Preferences General Health and Role Limitations **Perceived Social Support** Presence of Primary Supporter Employment Status; **Presenteeism/Absenteeism and Work Identity** Barriers to employment; Income and **Financial Strain** **Housing Situation** Perceptions of AFW2 program and Air Force Care Coordinator Program **Perceptions of FLO Program**	Service History Mental Health (PTSD and Depression) Mental Health Treatment History, Barriers, and Preferences General Health and Role Limitations **Medical Conditions** **Health care utilization and barriers** **Care Coordination** Presence of Primary Supporter; relationship and social satisfaction **Integration of family into care plan** Employment Status; Barriers to employment; Income Perceptions of AFW2, **RAMP, MASP, EEI, OWF, A&FRCs, TAP**

NOTE: PTSD = post-traumatic stress disorder, VA = U.S. Department of Veterans Affairs, FLO = Family Liaison Officer. Bold font indicates survey content that was modified between one or more of the survey waves. Bold, blue font indicates survey content that was removed between survey waves.

Purpose and Organization of This Report

The purpose of this report is to describe the well-being and needs of the most recent cohort of wounded, ill, and injured airmen enrolled in the AFW2 program (both combat-injured and non–combat-injured) in multiple life domains,[2] assess airmen's utilizations and perceptions of the programs and services available to them, and recommend improvements that the Air Force can make to its programs and services to address the challenges of reintegration. In Chapter 2, we describe the domains we considered in our model and briefly review the literature. As this is part of an ongoing course of study, we refer interested readers to more substantial literature reviews in prior waves (Sims et al., 2015; Sims et al., 2016) for greater detail, although we provide an overview of literature discussed in prior waves and a brief overview of the literature and concerns new to this wave of the study, such as physical health and additional programs for assessment. In Chapter 3, we provide an overview of our survey procedure and content that the literature and our notional model drove. In Chapter 4, we detail the results of wave 3 of the survey in the areas of physical health, physical health services utilization, mental health, mental health services utilization, and coordination of care. In Chapter 5, we report the key survey

[2] Most recent cohort of wounded, ill, and injured airmen as of the administration of the wave 3 survey in the fall of 2016.

findings in the domains of interpersonal relationships, employment, and financial stability. In Chapter 6, we describe airmen's utilization and perceptions of several nonmedical Air Force programs that serve them. In Chapter 7, we present the conclusions we drew from this investigation and provide recommendations for the Air Force to consider. Finally, we present the survey instrument in Appendix A, descriptions of the survey measures in Appendix B, and more detail on our assessment of survey nonresponse bias in Appendix C.

Chapter 2. Approach, New Survey Content, and Literature Summary

As we prepared the survey for the first wave of this ongoing study (Sims et al., 2015), it became apparent that the domains of health, social functioning, and occupational functioning were related to each other. The interrelations among these domains suggested the need for a holistic approach incorporating these multiple domains, which also informed the surveys for wave 2 and, most recently, wave 3. This chapter describes that approach, discusses the new elements of the survey, and briefly summarizes some of the literature that supports this approach.

A Holistic Approach and Summary of Relevant Literature

Previous research indicates that reintegration challenges occur across multiple domains, including physical and psychological health, social support, and employment and financial status (Berglass and Harrell, 2012; Institute of Medicine, 2010; Sims et al., 2015; Sims et al., 2016; Tanielian et al., 2008). Multiple interventions and programs that are designed to mitigate challenges in these different domains are available to airmen. For example, interventions for mental health conditions such as PTSD and major depression are offered at military treatment facilities (MTFs) and Veterans Health Administration (VHA) treatment facilities, while nonmedical services provided by the AFW2 program and other Department of Defense (DoD) programs have been implemented to improve social, employment, and financial well-being. Indeed, the support provided by AFW2 case managers might help mimic one's natural support system (i.e., family, friends, community) during a time when such social support is likely to be disrupted. Therefore, we took a holistic approach that considered issues in each of these domains (both physical and mental health, social functioning, and occupational functioning), as well as airmen's perceptions and utilization of several related programs and interventions available to them. Prior waves investigated interrelationships between relevant domains, and the second wave's longitudinal cohort offered the opportunity to explore some of the relationships over time. As the present effort includes an entirely new cohort and a somewhat different focus, we report indicators of current functioning and well-being, rather than attempting an exploration of relationships between domains.

Here we briefly summarize relevant findings from the literature on reintegration challenges, interventions, and services. We summarize research that often focuses more generally on service members, though sometimes specifically on airmen. The airmen in our population are a select and unique subset of the larger population of service members who must chart the path of

reintegration.[3] Their injuries, of course, neither occur nor heal in isolation, and we consider each of the relevant domains briefly.

Negative outcomes in the domains included in our holistic approach (health, social functioning, and occupational functioning) are potentially modifiable by programs and interventions available to airmen who are undergoing the process of reintegration. Accordingly, we also briefly describe the evidence base for interventions designed to mitigate the reintegration challenges in those domains. Some of the interventions under consideration could have an evidence base best characterized as "in development"—e.g., consisting mostly of correlational studies—and hence have more limited applications to informing policy recommendations. Evidence-based treatments (EBTs)—treatments whose efficacy has been demonstrated in randomized controlled trials—are available to alleviate some physical and psychosocial challenges, as described in the DoD and Department of Veterans Affairs (VA) clinical practice guidelines for the management of PTSD and Major Depressive Disorder (Management of Post-Traumatic Stress Working Group, 2010; Management of Major Depressive Disorder Working Group, 2016). In addition, the Air Force's own programs and services ideally affect these domains.

Physical Health

A variety of physical health concerns affect the airmen in the population surveyed. Some of these conditions (not all) were serious enough to require discharge, but even when they were not the reason for discharge, they could have a disabling effect on the individual and on reintegration outcomes. Many of these conditions are highlighted in the 2015 Disability Evaluation Systems (DES) Analysis and Research Report on disability discharges among Air Force personnel (ASMARA, 2016), and in the 2014 Annual Benefits Report from the VA (VA, 2015), which reports prevalent service-connected disabilities among new recipients. Some of the more common physical health conditions that may play contributing roles or be primary causes of disability include migraine, epilepsy, paralysis or spinal cord injury, back pain or dorsalgia, arthritis, cancer, and tinnitus (AMSARA, 2016; VA, 2015). Other conditions may also be common but less defined in terms of cause, treatment, or even medical diagnosis. For example, "limited motion" is not a diagnosis code on available diagnostic systems such as the International Classification of Diseases (currently ICD-9); however, its effects may be quite detrimental to the execution of various jobs in the Air Force and hence cause for a disability evaluation.

In general, airmen in our population may be eligible for treatments for these concerns within three different, but sometimes overlapping, systems of care: the MTF for the active-duty active component, civilian care for reservists and the National Guard, and the VHA system for veterans and retirees. The health care system in which treatment is received depends on individual

[3] Note that, although our study focused on airmen, the general population and general veteran literature is relevant, particularly because relatively few studies focus exclusively on airmen.

circumstances and eligibility. Past research indicates that many wounded, ill, and injured airmen transitioning out of the Air Force tend to receive care in multiple systems (Sims et al., 2015; Sims et al., 2016).

Because of the breadth of physical health conditions that may be considered for discharge, it is difficult to summarize available evidence on quality of care or adherence to available evidence-based practice guidelines. DoD and the VA jointly promulgate clinical practice guidelines for a variety of conditions including lower back pain (VA, undated), but the guidelines do not cover all conditions of potential relevance to our population.

Broad evaluations of health care systems might speak to care quality more generally, even though such evaluations may not speak as specifically to adherence to evidence-based practice guidelines for exact conditions. A broad evaluation of the military health system (MHS) considered multiple aspects of care and summarized relevant literature (Defense Health Agency, 2014). In its summary of other studies that had evaluated the MHS in various domains, the review noted that at least one study that covered direct-care low back pain treatment recommended better metrics and tracking of quality of care for that specific issue in the MHS. More broadly, the review examined policy guidance on, and standardization of data tracking of, quality of care, and recommended that a core set of metrics be adopted and that the system be held accountable for improvement. The review of available quality metrics suggested that quality of care in the MHS was mixed, with considerable variation for conditions, and it noted that its site visits suggested that knowledge of and adherence to relevant clinical practice guidelines were inconsistent. The review noted the inherent difficulties in comparing quality of care across medical systems—i.e., to the civilian care market (Defense Health Agency, 2014).

Another review of treatment for several conditions (including several relevant to airmen in our population such as cancer pain and palliation, headache, low back pain, and osteoarthritis) compared care quality between the VHA and civilian care, and determined that the VHA performed favorably for overall quality, as well as chronic disease and preventive care, but not for acute care (Asch et al., 2004). A review of that and other studies comparing VHA care with that of other systems indicated superior adherence to accepted processes of care in the VHA (Trivedi et al., 2011). However, a more recent, broad evaluation of the VHA system suggested a variable quality experience across facilities (MITRE Corporation, 2015). That review noted difficulties in data standardization across the system, as well as difficulties integrating care purchased on the civilian market. Despite the difficulties inherent in these types of evaluations for the VHA and the MHS, the civilian care market is still more varied, decentralized, and complex to evaluate in terms of quality of care and adherence to best practices. Taken together, these studies suggest that when guidelines for practice are available, adherence to them is both difficult to assess and, within the context of that limitation, likely varied.

Moreover, transitions between systems of care such as those experienced by reintegrating service members pose challenges for the continuity and ultimately the quality of care received. Transitions may be sequential, as when an airman transitions out of the Air Force and moves

from an MTF to the VHA, or they can be ongoing and concurrent, as when civilian care is used to supplement care in either an MTF or the VHA. Navigating this landscape of care may be even more difficult for airmen with injuries, such as traumatic brain injuries (TBI) that impede their ability to coordinate their own care. Thus, we considered care coordination as a relevant issue to explicitly examine for our population.

In past research on barriers to health care in military populations, barriers have been grouped into three broad categories: logistical barriers, institutional and cultural barriers, and barriers that arise from beliefs about and preferences for treatments (Tanielian et al., 2008). Although that study focused on access to mental health care, some of the same barriers—particularly logistical barriers and beliefs about and preferences for treatments—might be relevant to airmen with physical injuries and impede quality of care. For instance, the challenge of scheduling appointments or having the belief that one can do better on one's own without treatment may limit access to care for physical injuries. Indeed, in a direct comparison, Drapalski et al. (2008) noted that, in many cases, veterans with mental illness reported similar types of barriers to receiving both mental and physical health care. Other work, that has examined barriers more broadly among disabled and treated populations, has identified similar categories of barriers for a broad array of conditions, suggesting that some of the same types of barriers are relevant to both individuals with psychiatric conditions and individuals with physical conditions (Bauer et al., 2005; Drainoni et al., 2006). However, despite these similarities, there are likely to be differences in institutional and cultural barriers to care between physical and mental health conditions; mental health conditions are much more heavily stigmatized than physical health conditions.

Mental Health

Discussion of mental health among military service members and veterans who are reintegrating often centers on a more limited subset of conditions than does that of physical health, based on evidence suggesting that certain issues are notably elevated. Past research has demonstrated that rates of current probable PTSD and major depressive disorder (MDD) among service members and veterans deployed in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) are notably elevated compared with those documented in the U.S. general population of adults (Hoge et al., 2004; Kessler et al., 2005; Ramchand et al., 2010; Schell and Marshall, 2008; Vaughan et al., 2011). The noted frequency of PTSD and MDD among AFW2 program enrollees in earlier waves—over 70 percent screened positive—suggests that mental health problems represent a critical quality of life issue among severely combat-wounded AFW2 enrollees (Sims et al., 2015; Sims et al., 2016). Earlier literature reviews in our previous reports described these conditions, their prevalence, and relevance for service-connected disability, as well as recovery trajectory; we direct interested readers to those sources for more detailed information on these conditions (Sims et al., 2015; Sims et al., 2016).

As with physical health care, mental health care can be received in different systems by airmen in our population, who are often eligible to receive care in an MTF, VA, and/or civilian settings. EBTs for both PTSD and MDD are offered in VA and DoD medical facilities, and have been institutionalized through shared sets of clinical practice guidelines on the management of these conditions (Management of Major Depressive Disorder Working Group, 2016; Management of Post-Traumatic Stress Working Group, 2010). These include psychotropic medications that are recommended for both conditions, as well as trauma-focused psychotherapies, such as prolonged exposure (PE) and cognitive processing therapy (CPT) for PTSD. Other psychotherapeutic interventions for PTSD, such as interpersonal therapy (IPT) and couples' cognitive-behavioral therapy (CBT), have shown some promise in the little research that has been conducted (e.g., Krupnick et al., 2008; Monson et al., 2011; Monson et al., 2012). However, these treatments have an insufficient evidence base to warrant recommendation as frontline treatments (Cukor et al., 2010). Psychotherapeutic interventions recommended as frontline treatments for MDD include CBT and IPT (e.g., Anderson, 2000; Butler et al., 2006; de Mello et al., 2005; van Hees et al., 2013).

Even when such EBTs exist as they do for these conditions, and the VA and DoD formally advocate them, several barriers can prevent service members or veterans with mental health concerns from obtaining high-quality care (IoM, 2012; Tanielian and Jaycox, 2008). These include shortages of qualified mental health treatment providers in some geographic areas of the United States, which limit access to care (Burnam et al., 2008), and institutional and cultural concerns about the adverse effects that receiving mental health treatment can have on one's career (Hoge et al., 2004; Schell and Marshall, 2008; Vaughan et al., 2011; Vogt, 2011). Moreover, we do not know the extent to which providers in the VA and DoD systems consistently practice and implement EBTs with fidelity to the treatment protocol (i.e., the way the treatment was designed to be delivered) (IoM, 2012; IoM, 2014). One comprehensive evaluation of the DoD system, using available administrative data (Hepner et al., 2017), suggests that the MHS has definite room for improvement in the adequacy of follow-up in the first weeks after diagnosis, although the system performed well in other areas such as assessment for suicidal ideation and substance abuse. While this evaluation also included some consideration of purchased care under the MHS, the depth of the evaluation for such care was necessarily limited by the availability of administrative data for those outpatient settings. Thus, it is still unclear how well EBT is translated from the research setting to civilian community practice, though indications reported in other studies are not promising (i.e., Tanielian et al., 2014).

Social and Occupational Functioning

Returning veterans who are struggling with reintegration challenges might face decreased quality of life that extends far beyond the immediate issues of physical and mental health. Reintegration involves wellness on a range of interrelated fronts (Berglass and Harrell, 2012;

Ramchand et al., 2008). Below we briefly discuss two of them: social and occupational functioning.

Social Functioning

Social support has been shown to relieve the effects of various social stressors, such as unemployment or financial stress, and mitigate both negative physical and mental health outcomes (McGene, 2013). Generally speaking, social support is characterized by two or more people relating to each other with the intent of helping manage problems (Lakey, 2011; Taylor, 2011). Social support from others can be conceptualized as perceived or received support and care of various types (emotional, instrumental, informational), or what is often known as functional—because the support fulfills a functional purpose (Cohen, 2004). It can also be indexed in various ways, such as an individual's self-report of social support provided by others, others' reports of social support that they have provided to the individual, and observational studies of social interactions between an individual and others. Social support is most commonly assessed through an individual's self-report of social support provided by others.

Social support and interpersonal relationships affect health through multiple means, including directly increasing well-being and buffering the effects of stress; that is, they enable people to cope with stress, including traumatic events (Cohen, 2004; Cohen, Gottlieb, and Underwood, 2000; Cohen and Wills, 1985; Taylor, 2011). Having social ties (i.e., social integration) has been linked to myriad health effects, including the reduction of overall mortality (Taylor, 2011). Functional support has also been shown to be relevant to outcomes and, in some cases, more relevant than social ties, such as in the case of cardiovascular disease prognoses (Tay et al., 2013). Social support has also been shown to be relevant to the population under consideration in prior waves of administration of this survey, in terms of trajectory of recovery (Sims et al., 2016).[4]

Multiple interventions attempt to improve social support. Hogan, Linden, and Najarian (2002) summarized the literature, attempting a broad survey of health and wellness outcomes and interventions (including interventions utilizing existing support networks, peers, and professionals). The authors found significant heterogeneity in successful health outcomes among people involved in a similarly wide variety of group interventions. Although no specific practices could be categorized as evidence-based, the authors suggested that some type of social-support intervention shows promise in a general sense, pending additional research. Supportive interpersonal relationships include service provider and recipient, as can be the case for the

[4] Another aspect of social functioning that has been shown to be relevant to well-being is social negativity or social undermining, which refers to behaviors in which someone expresses anger, dislike, or criticism to an individual, or obstructs the individual's achievement of instrumental goals (Vinokur and van Ryn, 1993). A review of this area of research concluded that social undermining precipitates increases in depressive symptoms (Ibarra-Rovillard and Kuiper, 2011). We did not assess social undermining in the current study because we were aiming to cover a broad set of domains, which limited the depth with which we could study each domain.

nonmedical case management and related involvement programs, such as AFW2. A more recent review focused on health and wellness outcomes and was restricted to randomized control trials of peer-supported interventions (Ramchand et al., 2017). The review found many null effects with notable exceptions for the use of peer educators on the outcome categories of knowledge, attitudes, beliefs, and perceptions (e.g., perceptions of stigma) and social outcomes and connectedness (e.g., social support), where positive findings were more frequent than null findings. In addition, dyadic peer support studies had more positive than null findings for behavior change as an outcome, as did peer counseling studies for the outcome of physical health. The summary did not evaluate the success of peer support interventions that include a professional facilitator, but offered further indications that social support interventions may have beneficial effects.

Occupational Functioning

Work provides many benefits, both pecuniary and social, and is a major activity of adult life. Unplanned job loss is most often seen as stressful (Wanberg, 2012). As Nichols, Mitchell, and Linder (2013) noted, past studies of unemployment suggest that layoffs for cause, including individual conditions that render someone unfit for work—as in our sample of airmen with injuries and illness—might have greater negative sequelae than layoffs for external factors, such as factory closings, do.

Further, *involuntary* transitions are often accompanied by barriers and risk that one must overcome (Fouad and Bynner, 2008). Unemployment among veterans is an issue of continuing currency and is relevant for airmen in our population who are engaged in the process of discharge for reasons of disability, and hence might anticipate experiencing more acute barriers in their job search. A substantial body of literature exists on the consequences of unemployment, which include detriments to both psychological and physical well-being (McKee-Ryan et al., 2005). Social support from family and friends can aid these transitions (Conroy and O'Leary-Kelly, 2013; Haynie and Shepherd, 2011), and positive transitions have wide-ranging implications for well-being on a variety of dimensions (Blustein, 2008; Liu, Huang, and Wang, 2014).

Employment interventions are also available. As Wanberg (2012) summarized, the broader literature on unemployment suggests that interventions to bolster self-efficacy can be helpful, along with interventions on interview self-presentation tactics and interventions developed to improve self-efficacy in the job search and goal-oriented behavior, such as documentation of job-search activities. A recent meta-analysis of job-search interventions, primarily in the civilian domain, found that several aspects of these interventions were helpful for obtaining employment: Specifically, interventions that included teaching skills in job-searching and self-presentation, boosting self-efficacy (i.e., in this case, increasing the sense that employment is obtainable), and enlisting social support for job-searching improved the odds of obtaining employment (Liu, Huang, and Wang, 2014). In addition, interventions that had a dual focus on improving job-

searching skills and increasing motivational components (e.g., efficacy) for job-searching were associated with higher odds of obtaining employment than interventions that focused on either alone. Length of unemployment spell was examined as a moderator (i.e., job search interventions were more effective for seekers with short spells of unemployment than they were for seekers with long unemployment spells), but was not itself considered as an outcome.

Several policies and programs are in place to help shorten the length of unemployment spells for veterans, both by way of stimulating employer demand for veterans—such as the 2011 Veterans Opportunity to Work to Hire Heroes Act (Public Law 112-56) and by helping veterans more effectively search for civilian employment (such as job fairs and the U.S. Department of Labor's CareerOneStop program). Loughran (2014) summarized the effects that have been found in the literature regarding veteran unemployment, concluding that only small gains accrue from existing programs in terms of shortening the length of the unemployment spell or by increasing the employment of targeted veteran groups. He noted that, in general, the available evidence is consistent with the hypothesis that veterans are more likely to be unemployed than non-veterans, due to their being more likely to have recently separated from military service. Programs that insure against involuntary unemployment, such as unemployment compensation for ex-servicemembers, might actually have a detrimental effect. Previous studies have found that unemployment duration increases with unemployment benefits (Nicholson and Needels, 2006). Note, however, that the rapid end of an unemployment spell can be considered only one positive outcome; others are also relevant, including good job match.

Descriptions of Programs Assessed in Wave 3

Air Force Programs

Air Force Wounded Warrior Program

Congressionally mandated and federally funded, AFW2 is a "brand name" for a suite of programs that provide personalized support, advocacy, and coordination of nonmedical services for wounded, ill, or injured (WII) airmen and their families and caregivers (AFW2, undated-b). AFW2 case managers and care coordinators are available to work with airmen throughout the recovery coordination process,[5] which the Air Force has defined as following a continuum of care with several phases: (1) identification, (2) recovery, (3) rehabilitation, (4) fitness evaluation, (5) reintegration/transition, (6) stabilization/resolution, and (7) sustainment (DoD Warrior Care, undated; AFW2, undated-c).

Before AFW2 can assist recovering service members (RSMs) with their transition and stabilization, the airman must be identified and determined to be eligible to participate in the

[5] Air Force contacts involved in helping craft our survey agreed that it was likely that the umbrella term "AFW2" would adequately capture the personnel involved in the process from the Air Force side, from the perspective of the airmen themselves.

program. Airmen can be referred to the program by the medical community or identified through the casualty morning report or the Integrated Disability Evaluation System. Regardless of how the individual is identified, the WII Cell will consider each RSM to determine the individual's eligibility for enrollment in the AFW2 program (AFW2, undated-b).[6] AFW2 program participation is voluntary.[7] For more information, readers are referred to the AFW2 website (AFW2, undated-b).

The AFW2 program has undergone significant expansion of its scope of services provided and eligibility criteria since its inception in 2005.[8] The original purpose of AFW2 was to coordinate nonmedical services for airmen with combat or hostile-related injuries or illnesses. Over the last decade, AFW2 has expanded its eligibility criteria to include those injured outside of combat. In recent years, the Air Force has rolled out new programs for recovering airmen under the umbrella of AFW2. These programs include RAMP and MASP, which we examined in this study. These and other programs related to warrior and survivor care are explained in the Air Force Instruction 34-1101 (Air Force Instruction 34-1101, 2015). The Office of Warrior Care Policy (OWCP) is responsible for policy and oversight, and offers guidance on programs to assist airmen along the recovery coordination process.

The goal of RAMP is for injured airmen to develop one-on-one relationships with peer mentors—airmen further along in the recovery process—in an effort to motivate injured airmen and connect them with a valuable personal resource. RAMP is a voluntary program wherein airmen with both physical and psychological injuries can connect with individuals who might have had similar experiences and can provide mentorship and guidance. Airmen who provide mentorship are trained in how to appropriately and effectively engage with their fellow airmen (Air Force Instruction 34-1101, 2015).

During the initial stages of recovery, MASP aims to provide injured airmen with opportunities to engage in recreational and rehabilitative sports. The program includes a variety of sports, such as sitting volleyball, swimming, and recumbent cycling. The goal of the program is to encourage physical activity in an effort to help airmen reach their physical, psychological, social, and spiritual goals (Air Force Instruction 34-1101, 2015).

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[6] As described on the AFW2 program website, "the WII Cell coordinates enrollment consideration to all seriously injured (SI) or very seriously injured (VSI) Airmen and Airmen who have been diagnosed with Post-Traumatic Stress Disorder (PTSD) and/or Traumatic Brain Injury (TBI) regardless of the severity of the injury. Anyone, including the Airman, can submit a referral for enrollment determination into AFW2 through the WII Cell. The WII Cell coordinates all assignments of the Case Management Team (CMT) for all approved enrollments" (AFW2, undated-d).

[7] We do not know the extent to which the airmen enrolled in the AFW2 program represent the broader population of wounded, ill, and injured airmen who are technically eligible for the program but are not identified or who are identified and given the opportunity to enroll but choose not to.

[8] Initiated in 2005 as Palace HART, the program was renamed the Air Force Wounded Warrior program in 2007.

Airman and Family Readiness Centers

In addition to programs targeted to wounded, ill, or injured airmen, the Air Force also provides A&FRCs for use by all airmen and their families. According to Air Force Instruction 36-3009, A&FRCs assist members of the Air Force and their families by helping them adapt to the unique challenges of military life. The centers help injured airmen in a variety of ways. For instance, they participate in DoD TAP, which we included in our study, to help airmen make well-informed career decisions when transitioning out of the Air Force. Injured airmen could also benefit from child services and other programs offered through the A&FRCs during their recovery process (Air Force Instruction 36-3009, 2014).

Other Government Agency Programs

Through OWCP, DoD partners with the Department of Labor and the Department of Veterans Affairs to provide service members access to E2I. The nation is divided into ten regions where airmen and individuals from other service branches can access assistance in being matched to educational and career opportunities that will help their transition to civilian life. The program is made up of regional coordinators who are trained in how to identify the skills of individual service members. They then work to assist the service members in matching their skills and education to a career or plan an educational path to a desired career (DoD, undated).

DoD offers an additional program known as Operation Warfighter. This program helps provide injured service members with federal internships. During the recovery process, participants benefit from gaining work experience in the civilian workforce. OWF is broken into the same ten regions as E2I and enables participants to work with regional coordinators. The program is meant to help service members transition from duty to the civilian workforce, as well as provide federal employers the opportunity to hire and work with veterans.

TAP is a DoD program (although the Department of Veterans Affairs and Department of Labor are responsible for various activities within the program) available to all separating service members and their spouses as they transition from military to civilian life. The program assists service members who would like to continue their education or find employment in the civilian workforce. Although many of the initial program activities were established in 1991 as part of the 1991 National Defense Authorization Act (Public Law 101-510, section 502(a)(1), 1990).

The program was revamped in accordance with the "VOW to Hire Heroes Act of 2011" (Public Law 112-56, 2011). Individuals become involved by contacting their local Transition Assistance Office. Participants go through a Transition Goals, Plans, Success (GPS) curriculum to aid their transition and are connected to a variety of online resources. The curriculum includes information on how to translate military skills to the civilian workforce (DoD, undated-b). The Department of Labor provides a three-day employment workshop designed to focus on the mechanics of entering the civilian job market, including aspects such as interview skills, among other benefits, and the VA educates transitioning service members on their VA benefits as part of the Transition GPS curriculum, as well as other activities (DoD, undated-b).

Summary

Reintegration encompasses many life domains, and a holistic perspective is therefore required to examine this process. Hence, we have delineated the domains that should affect reintegration and described some of the evidence for their inclusion. Health, both physical and psychological, is a key issue for service members' reintegration in general and for our sample of wounded, ill, and injured airmen in particular. Other issues that merit consideration based on the literature include social functioning and employment and financial issues. Moreover, to the extent that all may be factors in a robust reintegration process, all serve as relevant outcomes by which the success of AFW2 and other programs for wounded airmen can be assessed.

Chapter 3. Survey Methods, Measures, and Analyses

In this chapter, we describe our sampling and recruitment procedures, measures used to assess areas of interest to the Air Force, the characteristics of participants, and analyses conducted for the wave 3 survey.

Sampling and Recruitment Procedures

This survey enabled us to capture a snapshot of the population that has interacted with the AFW2 program.[9] Our sampling frame for wave 3 was a subset of airmen enrolled in the AFW2 program as of August 2016. We obtained their names, contact information, and administrative data from the Air Force Personnel Center (AFPC). The subset included all of the airmen (*n*=713) who were in the final stages of separation and retirement, or had received a warm handoff to the VA,[10] at the time of the sample pull. These phases are known as "Reintegration/Transition" and "Stabilization/Resolution" in the continuum of care concept (AFW2). Given the Air Force's particular concern with airmen in the early stages of handoff to the VA, we included only airmen within the first six months of their separation in the Resolution phase.

At the time of the wave 3 survey, the eligibility requirements for enrolling in the AFW2 program were described as follows:

> An Air Force Wounded Warrior is any seriously or very seriously wounded, ill or injured Airman identified as Seriously Injured (SI) or Very Seriously Injured (VSI) on a Casualty Morning Report, or recommended by the medical community as having a highly complex medical condition. Also included are Airmen who have been referred to the Integrated Disability Evaluation System (IDES) for post-traumatic stress disorder, traumatic brain injury and/or other mental health conditions, or Air Reserve Component Airmen who have been retained for more than six months on medical Title 10 orders, or returned to Title 10 orders, for medical conditions related to deployment. (AFW2 Program, undated-a)

Given the relatively small number of potential wave 3 survey participants, we chose to take a census rather than select a subsample from the sampling frame. We advertised the study to prospective participants by publishing a one-page summary of findings from our wave 2 survey

[9] The research plan was reviewed and approved by the research sponsors; RAND's institutional review board, the Human Subjects Protection Committee; the Air Force Office of Research Oversight and Compliance; and was licensed by the Air Force Survey Office.

[10] As described by the AFW2 website, this warm handoff process includes general assistance with medical case management, as well as with other available services and notifications including coordination with the Department of Labor, Social Security Administration, and others. See AFW2, undated-c.

in the AFW2 program's general Facebook page as well as more targeted Facebook groups' announcements. These appeared in October 2016.

We mailed initial invitations to potential participants' home addresses. These invitations included instructions on how to complete the survey online, if desired, through a unique survey login code. Throughout the invitation and consent procedures, we assured participants that the Air Force would see their information only in the aggregate, and that participation would not affect their benefits.

We structured our data collection to facilitate web participation but with the recognition that phone participation was likely to predominate. Approximately a week following the initial letter mailing, we contacted potential participants by email and again invited them to take the survey online. Approximately one month after mailing the initial letter, we contacted potential participants by phone and invited them to complete the survey by phone. During that contact, participants could indicate that they had already started or were planning to start the web survey. Airmen who preferred to participate by phone could complete the survey then or schedule a callback if the initial call had been made at an inconvenient time. In circumstances in which someone was not interested in participating by phone, we gave information on how to participate online. Additional reminder emails went out every few weeks during the calling period.

We worded survey items identically across the online and telephone survey administration modes. However, we modified instructions as needed to accommodate differences in aural and visual presentation of survey items. On average, we estimated the survey to take approximately 25 minutes to complete.

The survey was in the field from October 6, 2016, through December 12, 2016. Of the 713 airmen whom we invited to participate, 270 completed the survey; 147 airmen completed the survey by phone (54 percent). The response rate for the overall wave 3 sample was 38 percent (270 ÷ 713).[11]

Measures

As described in previous reports (Sims et al., 2015; Sims et al., 2016), the majority of airmen in the population at the study's inception in 2011 had primary injuries of a psychological rather than physical nature due to a focus on combat-related injuries. After the expansion of the AFW2 program to include airmen whose injuries were incurred in situations other than combat, the AFW2 enrollee population was characterized by a majority of airmen with non–combat-related

[11] Thirty-eight percent, while not high, is comparable to other response rates; see, e.g., Baruch, 1999, who reported declines in average response rates over the years such that the average in 1995 was 48.4 percent. Newell et al., 2004, reported similar declines for military surveys. More recently, Miller and Aharoni, 2014, summarized evidence from military and civilian surveys suggesting that response rates were declining and cited overall response rates for recent Air Force surveys among active duty airmen ranging from 15 percent (2010 Air Force Caring for People Survey) to 31 percent (2012 Air Force Climate Survey). They noted that there is no scientifically established minimum response rate to minimize response bias.

injuries and a sizable minority of individuals with combat-related injuries. Thus, we focused on both psychological and physical injuries in our selection of constructs to measure in the current wave. We used well-validated measures of the constructs of interest when such measures were available. When well-validated measures were not available, e.g., to assess utilization and perceptions of nonmedical case management and other offered programs, we created items to tap the construct of interest. Our points of contact in the AFW2 programs, the Air Force Directorate of Services and the Air Force Surgeon General, reviewed early drafts of the survey and provided feedback on the overall approach and specific sections and items, which we incorporated into the final version. We had also employed limited cognitive interviewing with survey research experts at RAND to refine and improve wave 1 of the survey. Table 3.1 summarizes the measures and their provenances. The final survey is in Appendix A, and more detailed information on the measures is in Appendix B.

Table 3.1. Survey-Measure Overview

Airman Experienced Outcome/Area	Information Collected	Measure and Supporting Citations	Estimated Number of Items or Time to Complete Measure
Program Utilization and Perceptions			
Air Force Wounded Warrior program	Airman's contact with AFW2; help and services the airman has received from AFW2; perceptions of AFW2's effectiveness and helpfulness; and overall satisfaction with AFW2	Created for this project with assistance from program personnel; variants fielded in waves 1 and 2	30 items
Recovering Airman Mentoring Program	Suitability and benefits of mentor; satisfaction	Created for this project with assistance from program personnel	5 items
Military Adaptive Sports Program	Benefits of and satisfaction with program	Created for this project with assistance from program personnel	5 items
Education and Employment Initiative	Benefits of regional coordinator, satisfaction with services	Created for this project with assistance from program personnel	6 items
Operation Warfighter program	Benefits of and satisfaction with program and internship	Created for this project with assistance from program personnel	5 items

Airman Experienced Outcome/Area	Information Collected	Measure and Supporting Citations	Estimated Number of Items or Time to Complete Measure
Airman and Family Readiness Centers	Benefits of and satisfaction with centers and services	Created for this project with assistance from program personnel	2 items
Transition Assistance Program	Benefits of and satisfaction with services	Created for this project with assistance from program personnel	2 items
	Health		
Physical health and pain	General health, role limitations due to physical health, and pain	SF-36 subscales (Hays, Sherbourne, and Mazel, 1993); pain item from Hays et al. (2009)	1 minute
Medical conditions	Most common physical injuries and conditions in our population including amputation, blindness, cancer, and fibromyalgia at a minimum; other conditions based on most common conditions in veteran airmen; the condition that interferes most with the participant's daily activities	Created from a combination of most prevalent service-connected disabilities among new recipients according to the 2014 Annual Benefits Report (VA, 2015), the 2015 DES report (ASMARA, 2016), and the conditions in the data cuts prepared earlier this fiscal year by study team	1 minute
	Health Care Utilization and Barriers		
Health care utilization for physical conditions and injuries, unmet need/desire for care, barriers to care	Number of visits in past 12 months for physical conditions, where received care, unmet need/desire, perceived barriers to care	Medical care utilization assessed with item adapted from Medical Expenditure Panel Survey (AHRQ, 2014); unmet need/desire for medical care; barriers to medical care from RAND Invisible Wounds of War Study (Tanielian and Jaycox, 2008)	13 items

	Mental Health		
Current PTSD screener	Extent to which respondent has been bothered by symptoms of PTSD during the past month; whether symptoms were due to military exposure to stressful experiences	Primary Care–PTSD (PC-PTSD)	1 minute
Current depressive symptoms	Extent to which respondent has been bothered by symptoms of depression during the past two weeks	Patient Health Questionnaire-2 (PHQ-2) (Kroenke, Spitzer, and Williams, 2003)	<1 minute
	Mental Health Treatment History		
Mental health treatment history, unmet need/desire, barriers, and preferences	Physical and mental health services received, barriers to obtaining treatment, type and setting of treatment desired if respondent wanted treatment; family support for treatment	Some adapted from Invisible Wounds (Schell and Marshall, 2008)	21 items
	Coordination of Care		
Care coordination	Number of health care professionals involved in airman's care; how well-informed personal doctor is about care provided by other providers; who coordinated care; satisfaction with care coordination; patient involvement in decisions	Adapted from Consumer Assessment of Health Plans Survey (CAHPS) Health Care Survey of DoD Beneficiaries	6 items
	Family Relationships and Social Support		
Relationship status	Relationship status	Created for this project with assistance from program personnel	1 item
Social support	Presence of primary supporter; relationship and social satisfaction	Created for this project; variants fielded in waves 1 and 2	6 items

Integration of family members and friends into Comprehensive Recovery Plan (CRP)	Whether family members and friends have been included in the development and implementation of the CRP; treatment planning and implementation for medical and mental health care; whether family members and friends provide encouragement for obtaining and adhering to treatment for physical and mental health problems; being socially active; and seeking employment.	Created for this project at suggestion of program personnel	4 items
		Work and Career	
Employment status	Whether respondent is currently working or not, and how often	Needs Assessment of New York State Veterans (Vaughan et al., 2011) Invisible Wounds survey (Schell and Marshall, 2008)	2 items
Barriers to employment	Factors that make it difficult for respondent to obtain employment	Adapted from the Wounded Warriors project survey (Franklin et al., 2010); variation relevant for employed participants developed for wave 2 based on wave 1 items	11 items
Income and disability compensation	Information about total household income and number of people supported by income in household	Invisible Wounds survey (Schell and Marshall, 2008)	2 items
		Demographics	
Education, number of dependent children	Highest level of education completed	Invisible Wounds (Schell and Marshall, 2008); adapted from other surveys	2 items
		Air Force Service History	
Air Force service history	Length of most recent deployment, month and year returned, total number of combat deployments	Some items created for this project, some adapted from Invisible Wounds survey (Schell and Marshall, 2008)	3 items

Sociodemographic, Service History, Injury, and Deployment History Characteristics

To reduce respondent burden and to enable comparisons of the target population with the sample of survey completers, we extracted sociodemographic, service history, injury, and

deployment history characteristics from administrative data that AFPC provided. Specifically, these characteristics included gender, race and ethnicity, age, highest level of education, component during active service, retired or active status, Air Force specialty code grouping, grade, number of previous deployments, the operation that the respondent's most recent deployment supported, duration of the respondent's most recent deployment, years since the respondent's return from his or her most recent deployment, total active years in the military, and years since the respondent retired from the Air Force. This information was provided for the entire population of AFW2 enrollees, both those who participated in the survey and those who did not.

Survey Participants

In terms of their sociodemographic characteristics, our survey participants were largely white, married males who lacked a college degree; they were, on average, 33 years old (see Table 3.2).

Demographics

Table 3.2. Respondent Characteristics (*N* = 270)

Characteristic	Percentage	95% CI LL	95% CI UL
Male	70	64	76
Race/ethnicity			
Hispanic	13	9	17
Non-Hispanic Black or African American	13	9	17
Non-Hispanic White	63	58	69
Other	11	7	14
Married	59	53	65
College degree or higher	20	15	24
	Mean	**Standard Error**	
Age	33.11	0.46	

NOTE: Point estimates are weighted. CI = confidence interval. LL = lower limit. UL = upper limit.

Air Force Service History and Injury Characteristics

As shown in Table 3.3., most survey participants were enlisted from the active component, and, on average, had served in the Air Force for over 11 years. Most participants had already

separated from the Air Force at the time of survey participation, and these airmen had been separated for roughly three months. The majority of survey participants had sustained injuries outside of combat and were in the stabilization and resolution phase of recovery (versus reintegration and transition).

Table 3.3. Overall Air Force Service History and Injury Characteristics (*N* = 270)

Characteristic	Percentage	95% CI LL	95% CI UL
Component[a]			
Active duty	87	83	90
Reserve	5	2	7
Air National Guard	9	6	12
Enlisted	87	83	90
Separated from service	57	51	63
Combat-injured	12	8	16
Recovery phase: Stabilization/resolution (vs. reintegration/transition)	73	67	78
	Mean	**Standard Error**	
Total years of military service	11.33	0.38	
Months since most recent Air Force separation[b] (among airmen who were separated from the Air Force, *N* = 150)	3.20	0.43	

NOTE: Point estimates are weighted.
[a]Percentages for component sum to more than 100 due to rounding error.
[b]Months since most recent Air Force separation was computed as the amount of time between the airman's date of separation and one month prior to the administrative data pull, which was considered the point in time at which records would have been most recently updated prior to RAND's receipt of the administrative data.

Deployment History

As shown in Table 3.4, most survey participants had deployed at least once, and their most recent deployment was in support of Operation Enduring Freedom. Among those who had deployed, the average duration of their most recent deployment was nearly five months, and they had returned from their most recent deployment nearly five years before participating in this survey.

Table 3.4. Deployment History (*N* = 270)

Characteristic	Percentage	95% CI LL	95% CI UL
Number of combat deployments			
0	27	22	33
1	22	17	27
2	22	17	27
3 or more	29	23	34
Most recent deployment[a]			
Operation Enduring Freedom	67	60	74
Operation Iraqi Freedom	12	7	16
Other	21	15	27
	Mean	**Standard Error**	
Length of most recent deployment in months[a]	4.75	0.21	
Years since return from most recent deployment[a]	4.64	0.18	

NOTE: Point estimates are weighted.
[a]Point estimates for characteristics of the airman's most recent deployment were computed only for the subset of participants who had deployed at least once (*N* = 197).

Analyses

Preliminary analyses included examination of nonresponse bias. The sample of survey completers resembled the population of airmen enrolled in the AFW2 program on nearly all sociodemographic and service history characteristics available in administrative data from the Air Force (see Appendix C, Table C.1). However, the percentage of airmen in the active component was slightly lower among those who completed the survey (81.1 percent) relative to the population (86.8 percent). Therefore, we created poststratification sampling weights to reduce the effect that nonresponse bias might have on population estimates generated from analyses of the sample of survey completers. We included these sampling weights in all analyses, and we presented unweighted sample sizes (*N*s) and weighted percentages.

We also assessed the effects of survey completion mode (online versus phone) on item responses. We did not observe differences by mode on the key outcomes of interest (physical health, mental health, and social support) measured in the survey and instead observed differences by mode on sociodemographic and service history characteristics that were assessed administratively. Accordingly, we interpreted the observed mode differences as reflecting differences in preferences for online rather than phone as a function of certain individual characteristics rather than a measurement effect in which participants interpreted items

differently across the web and phone modes of administration.[12] Therefore, we combined online and phone survey completers into a single sample and reported findings for the entire sample to achieve better representation of the target population than would be achieved by reporting differences separately for online and phone survey completers.

Substantive analyses included computation of univariate descriptive statistics of key outcomes in the overall wave 3 sample. We report both point estimates and their 95-percent CIs[13] for all outcomes of interest. These numbers represent the current status of the airmen in the sample—that is, a "pulse" to determine how well airmen in the sample are doing as a whole.

[12] It is also possible that administrative data are measured with greater accuracy than self-reported data, and that we simply had insufficient power to detect mode differences in key outcomes of interest assessed by self-report. In addition, true differential effects by mode of survey administration can be inferred only in the presence of random assignment to mode of survey administration.

[13] CIs help convey the uncertainty that is found in any estimate. Their interpretation is as follows: For the 95-percent CIs that we report, if we measured the same variables in the same way from the same population, in 95 percent of those samples, our results would fall within the upper and lower bounds we report. In cases in which our analyses rest on small sample sizes, there is greater uncertainty in our estimates, and our CIs are wider. For analyses with larger samples, our estimates can be more precise, and our CIs might be quite narrow. When we report that groups are significantly different, the point estimates for the groups are sufficiently different that, even taking into account the estimates' uncertainty, the groups are different on that variable.

Chapter 4. Health and Well-Being

In this chapter, we provide an overview of the key findings on airmen's previously diagnosed medical conditions, physical health and related service utilization, and mental health and mental health service utilization.

History of Medical Conditions

To provide context for interpreting findings about health care utilization, we asked participants to indicate the medical conditions, both physical and psychological, with which they had ever been diagnosed by a health care professional. Comorbidity of medical conditions was the rule rather than the exception: 91 percent of participants reported having been diagnosed with at least two medical conditions, physical or psychological.

As shown in Table 4.1,[14] the vast majority of participants reported having been diagnosed with at least one physical condition (90 percent). Back pain was the most common physical condition with which participants reported having been diagnosed by a health care professional (64 percent), followed by tinnitus (57 percent), limited motion or other impairment of the knee or ankle (49 percent), and migraines (42 percent).

In addition, more than three-quarters of participants reported having been diagnosed with at least one psychological condition (80 percent). Nearly two-thirds of participants reported having been diagnosed with an anxiety disorder (63 percent) and major depression (63 percent), and most participants reported having been diagnosed with PTSD (58 percent). Much smaller percentages of participants reported having been diagnosed with a personality disorder (15 percent) or substance use disorder (11 percent).

[14] There may be double-counting of some medical conditions assessed due to overlap in their definitions. For example, PTSD was considered an anxiety disorder in the *Diagnostic and Statistical Manual of Mental Disorders*–IV (DSM-IV) until the DSM-5 was released in 2013, and arthritis is a specific type of joint or inflammation disorder.

Table 4.1. Medical Conditions Diagnosed by a Health Care Professional (*N* = 270)

	Medical conditions diagnosed by a health care professional[a]		
		95% CI	
Condition	**Percentage**	**LL**	**UL**
Physical			
Back pain	64	58	70
Tinnitus (ringing in the ears)	57	50	63
Limited motion or other impairment of the knee or ankle	49	42	55
Migraine	42	36	49
Joint disorders or inflammation	40	34	46
Arthritis	36	30	42
TBI or concussion	27	22	33
Poor vision/blindness	17	13	23
Paralysis or spinal cord injury	17	13	22
Neuritis (inflammation of the nerves)	12	9	17
Cancer (any form, including leukemia, melanoma, etc.)	11	8	15
Fibromyalgia	8	5	12
Epilepsy	5	3	9
At least one physical condition	90	86	94
Psychological			
Anxiety disorder	63	57	69
Major depressive disorder (depression, clinical depression)[b]	63	57	69
PTSD	58	51	64
Personality disorder	15	11	21
Substance use disorder	11	7	15
At least one psychological condition	80	75	85
Other	42	36	48

[a] Participants were asked to "indicate whether you have been diagnosed by a health care professional as having the condition."
[b] Major depressive disorder is not synonymous with the terms *depression* or *clinical depression*. However, we believed that survey respondents might be more familiar with those terms than with *major depressive disorder* and so included them on the survey to enable identification of cases of major depressive disorder.

Physical Health

We assessed respondents' physical health using the SF-36 subscales for general health and for role limitations due to physical health. The SF-36 is a well-validated and widely used measure of physical health and functioning (Hays, Sherbourne, and Mazel, 1993; Ware et al.,

1993). As context for interpretation of scores on these subscales, average (mean) scores were 57.0 (standard deviation [SD] = 21.1) on the general health subscale and 53.0 (SD = 40.8) on the role limitation subscales in a sample of U.S. adult patients with chronic illnesses such as hypertension, diabetes, coronary heart disease, and depression (Hays, Sherbourne, and Mazel, 1993).

On average, participants perceived that their general health was not very good and that their performance of daily activities was limited by their physical health (see Table 4.3). Specifically, average (mean) scores were 39.56 (standard error [SE] = 1.41) on the general health subscale and 31.86 (SE = 2.37) on the role limitation subscales.

Table 4.2. Current Physical Functioning (*N* = 270)

			95% CI	
Subscale	**Mean**	**SE**	**LL**	**UL**
General health	39.56	1.41	36.80	42.33
Role limitations due to physical health	31.86	2.37	27.18	36.53

NOTE: General health and role limitations due to physical health are subscales of the SF-36 that were scored according to the RAND method (Hays, Sherbourne, and Mazel, 1993). For both subscales, possible scores range from 0 to 100, with higher scores on general health indicating better overall health and higher scores on role limitations due to physical health indicating fewer role limitations due to physical health.

Health Care Utilization and Barriers for Physical Conditions and Injuries

We also asked airmen to describe their health care utilization for their physical conditions. As shown in Table 4.3, nearly half of participants (47 percent) reported ten or more visits to a medical professional's office in the past 12 months, while about 11 percent reported none.

Table 4.3. Number of Medical Visits for Physical Conditions and Injuries in the Past 12 Months (*N* = 270)

		95% CI	
Number of Visits	**Percentage**	**LL**	**UL**
Ten or more	47	41	53
Five to nine	22	17	28
One to four	20	15	26
None	11	8	16

NOTE: Participants were asked, "In the last 12 months, how many visits did you make to any medical providers like a family doctor, general internist, nurse or nurse practitioner, or specialists to get medical care, tests, or treatment for [their] physical conditions or injuries?"

We also asked airmen who reported having received medical care for physical conditions or injuries over the past year to indicate whether they had received care at an MTF, civilian facility,

or VHA facility, or some combination of those (see Table 4.4). As nearly half of airmen had not yet separated at the time of survey participation, and those who had separated had done so an average of only three months prior to our data pull, it would be expected that most of those who received care in the past year would have done so at an MTF. Indeed, this is what we found: Over two-thirds of participants who reported having had at least one visit to a medical professional in the past 12 months reported having received care at an MTF (68 percent). Slightly less than two-thirds of participants reported having received care at a civilian facility (62 percent). Just under half (49 percent) of participants reported having received care at the VA. In addition, the majority of those who had received medical care for physical conditions or injuries in the past year (57 percent) reported having received care at two or three facilities.

Table 4.4. Settings in Which Health Care for Physical Conditions and Injuries Was Received in the Past 12 Months (*N* = 241)

Facility Type	Percentage	95% CI	
		LL	UL
MTF	68	62	74
Civilian	62	56	69
VHA	49	43	56

NOTE: Participants who indicated having had at least one medical visit for physical conditions and injuries in the past 12 months were asked, "Where did you receive medical care, tests, or treatment for your physical conditions or injuries?" The denominators for the percentages reported in the table were limited to participants who reported having had at least one visit to a medical provider in the past 12 months.

Roughly one-third (33 percent, 95 percent CI [27, 39]) of participants indicated that there was a time in the last 12 months when they wanted to get medical care, tests, or treatments for physical conditions or injuries that they or a doctor believed necessary, but did not end up seeking such care. Airmen who reported such a time were given a list of concerns and asked to indicate which of these concerns prevented them from seeking or obtaining care.

As shown in Table 4.5, difficulty scheduling an appointment was the most commonly endorsed logistical barrier, at 58 percent. Not knowing where to get help, another logistical barrier, was endorsed by nearly half of participants (46 percent). Less than half of endorsed barriers were related to beliefs about and preferences for treatment. About 41 percent of airmen indicated that they believed that the care, tests, or treatments available to them were unsatisfactory. Roughly 41 percent of airmen noted that they believed they could handle the problem on their own. The least frequently endorsed barriers were difficulty getting childcare or time off of work (18 percent) and noting that care, tests, or treatments were too unpleasant to undergo (18 percent). We also examined the total number of barriers to physical health care endorsed and found that about 40 endorsed four or more barriers to care. Thus, most participants perceive multiple barriers to care.

Table 4.5. Barriers to Health Care for Physical Conditions and Injuries Among Airmen Who Desired Help but Did Not Receive It (*N* = 89)

Type of Barrier	Percentage	95% CI LL	95% CI UL
Logistical			
Difficulty scheduling an appointment	58	47	68
Not knowing where to get help or whom to see	46	35	57
Was refused services	22	14	32
Difficulty arranging transportation to treatment	22	14	32
Difficulty getting childcare or time off of work	18	11	27
Beliefs about and perceptions of the treatment			
Believing that the care, tests, or treatments available to you are not very good	41	31	52
Believing you can handle the problem on your own	41	30	52
Care, tests, or treatments took too long	31	22	42
Care, tests, or treatments were too unpleasant to undergo (e.g., side effects)	18	11	28
Other			
Other reason not mentioned	40	30	52
Total number of barriers endorsed			
Four or more	40	30	51

NOTE: The denominator for percentages reported in this table includes only those participants who indicated that there had been a time in the past 12 months when they wanted to get medical care, tests, or treatments for physical conditions or injuries that they or a doctor believed necessary, but did not end up seeking out such care.

Mental Health

As shown in Table 4.6, the majority of participants screened positive for current PTSD or MDD (68 percent), underscoring that mental health problems are a significant concern for a notable proportion of this population. Nearly two-thirds of participants screened positive for PTSD (62 percent), roughly half screened positive for MDD (51 percent), and nearly half screened positive for both conditions (45 percent).

Table 4.6. Positive Screens for Posttraumatic Stress Disorder and Major Depressive Disorder (*N* = 270)

		95% CI	
Condition	**Percentage**	**LL**	**UL**
PTSD	62	56	68
MDD	51	45	57
Both	45	39	51
Neither	32	27	38

Mental Health Care Utilization, Barriers, and Preferences

Among those who screened positive for PTSD or MDD (*N* = 185), rates of mental health services utilization in the past year were high: 92 percent (95 percent CI [88, 96]) reported that they had received medication, psychotherapy, or some other treatment for "stress, emotional, alcohol, drug, or family problems" in the past year. As shown in Table 4.7, three-quarters of participants who screened positive for PTSD or MDD reported that they had received both medication and psychotherapy (75 percent).

Table 4.7. Mental Health Treatment Modality of Those Who Screened Positive for Posttraumatic Stress Disorder or Depression (*N* = 185)

		95% CI	
Treatment	**Percentage**	**LL**	**UL**
Neither medication nor therapy	8	5	13
Medication or counseling or talk therapy provided by a mental health specialist, but not both	17	12	23
Both medication and therapy	75	67	81

As shown in Table 4.8, of those who had received some form of mental health treatment in the past year, roughly two-thirds had received mental health care in an MTF (67 percent), slightly more than half had received mental health care in a VHA facility (55 percent), and nearly half had received care in a civilian setting (47 percent). As with physical health care, it would be expected that many participants would receive mental health care in multiple settings given that most of the airmen in this population are transitioning out of the Air Force. Roughly half of participants who had received mental health treatment in the past year reported having been seen in two or more settings (52 percent).

Table 4.8. Settings in Which Mental Health Services Were Received in the Past 12 Months (*N* = 214)

Mental Health Service Setting	Percentage	95% CI LL	95% CI UL
MTF	67	60	73
VHA facility	55	48	62
Civilian facility	47	40	54

NOTE: The denominator for percentages in this table is limited to airmen who received mental health services in any setting.

Although the rate of mental health service utilization in the past year was high, roughly one-third of participants (33 percent, 95 percent CI [27, 39]) reported that there was a time in the past 12 months when they wanted to get professional help for stress, emotional, alcohol, drug, or family problems, but could not. As shown in Table 4.9, among those who reported difficulty obtaining care when desired in the past 12 months, the most commonly endorsed barriers to mental health care were difficulty scheduling an appointment (54 percent), concerns that receiving professional help could harm one's career (44 percent), and belief in one's ability to handle problems on one's own (43 percent). Other commonly endorsed concerns included medications having too many side effects (40 percent); believing that the care, tests, or treatments available are not of very good quality (37 percent); not knowing where to get help or who to see (37 percent); concerns about loss of respect from family, friends, or co-workers (33 percent); and concerns about being denied a security clearance in the future (31 percent). We also examined the total number of barriers to mental health care endorsed and found that over half of participants (54 percent) endorsed four or more barriers to care. Thus, most participants perceive multiple barriers to care.

Table 4.9. Barriers to Mental Health Service Utilization Among Airmen Who Desired Help but Did Not Receive It (*N* = 91)

Type of Barrier	Desired Help but Did Not Receive It		
		95% CI	
	Percentage	LL	UL
Logistical			
Difficulty scheduling an appointment	54	43	65
Not knowing where to get help or whom to see	37	27	48
Difficulty getting childcare or time off of work	17	10	27
Institutional and cultural			
Professional help could harm airman's career	44	33	55
Concerns that friends, family, or coworkers would respect airman less	33	24	44
Concerns about airman being denied a security clearance in the future	31	22	42
Concerns about confidentiality of treatment	29	20	40
Concerns that commander or supervisor would respect airman less	26	18	37
Beliefs about and preferences for treatment			
Belief in ability to handle problem on your own	43	32	54
Medications have too many side effects	40	30	51
Belief that the care, tests, or treatments available to you are not very good	37	27	48
Other			
Other reason not mentioned	47	36	58
Total number of barriers endorsed			
Four or more	54	43	65

NOTE: The denominator for this table is limited to airmen who reported that there was a time in the past 12 months when they wanted to get professional help for stress, emotional, alcohol, drug, or family problems, but did not.

We also asked participants about their preferences for mental health care settings and types of providers if they wanted mental health care and cost were not an issue (see Table 4.10). Slightly over half of participants expressed a preference for private civilian providers. Comparable proportions of participants reported a preference for providers in MTFs (20 percent) and VA (21 percent). Regarding preferences for the type of mental health care, the majority of participants indicated that they would want to receive both medication and therapy (59 percent). Nearly one-third expressed a preference for psychotherapy alone (32 percent), and only 7 percent reported that they would prefer to receive medication alone.

Table 4.10. Mental Health Service Preferences (*N* = 270)

Preference	Percentage	95% CI LL	95% CI UL
Preferred mental health services setting[a]			
MTF	20	15	25
VA facility	20	15	25
Private civilian provider	57	51	63
Preferred type of mental health service[b]			
Medication prescribed by a health care provider	7	4	10
Some type of counseling or talk therapy provided by a mental health specialist	32	26	38
Both medication and therapy	59	52	65

NOTE: Percentages may not sum to 100 due to missing data.
[a] Participants were asked "If you wanted to get mental health care and could go to any type of provider free of charge, would you go to a…"
[b] Participants were asked "If you wanted to get mental health care and could afford any of the following types of treatment, which one would you choose?"

Coordination of Health Care

Considering both mental and physical health together, very few individuals were seen in only one system of care. Of those who reported receiving health care for mental or physical condition, or both (N = 266), 14 percent (95 percent CI [10, 19]) were seen only in MTFs, 11 percent (95 percent CI [7, 15]) only in VAs, and 10 percent (95 percent CI [7, 14]) only in the civilian sector. While this means about a third of respondents who received some care in the past year were seen in only one system of care, by far the larger proportion are those who received care in at least two systems of care (66 percent; 95 percent CI [60, 72]). Thus, for two-thirds, coordination of care across systems was potentially needed, depending on the timing. Transitions may be sequential, as when an airman transitions out of the Air Force and moves from an MTF to a VHA, which would require a warm handoff for coordination.[15] However, transitions may also be ongoing and concurrent, as when civilian care is used to supplement care in either the MTF or the VHA, which would ideally have more intense coordination between simultaneous providers. Even for airmen seen in only one system, fewer than ten saw only one provider, indicating that coordination of care within systems was also a potential issue for many.

[15] Air Force Instruction 34-1101 refers to a Memorandum of Understanding between DoD and the VHA, which specifies that a change in lead coordinator role requires person-to-person communication as a part of this warm handoff between the person serving the role of lead coordinator at the MTF to the person who will serve the role of lead coordinator at the VHA. As noted by a peer reviewer, "warm handoff" traditionally means that one provider makes contact with another provider to transfer relevant information and insights to enable the smooth transition of care and facilitate a therapeutic rapport with the client. Handoffs between concurrent providers may involve more general transfers of information from involved providers to benefit the client as treatment progresses.

We assessed respondents' reports of efforts to coordinate their health care and their satisfaction with the coordination of their care. To ensure the relevance of items about coordination of care to survey participants, we began this line of inquiry by asking how many different doctors or health care providers airmen had seen for any type of care, including physical and mental health care, in the past 12 months. As shown in Table 4.11, nearly all airmen reported having seen at least two health care providers in the past 12 months (96 percent). Slightly over one-third of airmen reported having seen between two and five health care providers (36 percent) or ten or more health providers (33 percent), and over a quarter noted six to nine health providers (27 percent) having administered care in the past 12 months.

Table 4.11. Number of Health Care Providers Who Provided Care in the Past 12 Months (*N* = 270)

Number of Providers	Percentage	95% CI LL	95% CI UL
0 or 1	4	2	7
2–5	36	30	42
6–9	27	21	32
10 or more	33	27	39

NOTE: Participants were asked to report the number of doctors or other health care providers from which they had received care in the last 12 months. Participants were asked to include their "personal doctor, mental health care provider, dental care providers, and any other doctors or other health care providers that provided care to them." Response options for this question included 0, 1, 2–5, 6–9, and 10 or more.

Of those who reported having seen two or more health care providers during the past year (*N* = 259), 37 percent (95 percent CI [31, 43]) reported that a lead coordinator was assigned.[16] When asked to identify the different sources of help they received with the coordination of their care, the great majority of participants (81 percent) reported that they helped to coordinate their own care. As Table 4.12 shows, the next most commonly identified sources of help with care coordination were doctors or other health care providers (50 percent), clinical case or care manager at an MTF (44 percent), someone from the participant's health plan (32 percent), and a clinical case or care manager at the VA (30 percent). Roughly a quarter of participants reported that a friend or family member (25 percent) or an Air Force Recovery Care Coordinator (25 percent) had helped with coordination of their care, and less than one-fifth of participants reported having received help from someone in their doctor's office or clinic (19 percent). The least-commonly identified sources of help with care coordination were a representative of another organization (10 percent) and a Federal Recovery Care Coordinator (8 percent). Fewer than ten participants reported that no one helped to coordinate their care.

[16] Lead coordinators are officially assigned when an airman's situation is complex and long-term; however, given that the role of lead coordinator (and person filling that role) changes as airmen proceed through the recovery coordination process, they may not identify themselves as such to airmen.

Table 4.12. Sources of Help with Care Coordination in the Past 12 Months (*N* = 259)

Sources of Help	Percentage	95% CI LL	95% CI UL
Self	81	76	86
Doctors or other health providers	50	43	56
Clinical case or care manager at the MTF	44	38	51
Someone from my health plan	32	26	38
Clinical case or care manager at the VA	30	24	36
Friend or family member	25	20	31
Air Force Recovery Care Coordinator	25	19	30
Someone else from my doctor's office or clinic	19	14	24
Representative of another organization	10	6	14
Federal Recovery Care Coordinator	8	5	12

NOTE: The denominator for these percentages was limited to participants who reported having received care from two or more health care providers in the past year.

In addition, we asked respondents about their perceptions of their health care providers' awareness of the other care they had received (see Table 4.13). Nearly half of survey participants perceived that their health care providers were never or only sometimes aware of the care they had received from other providers (48 percent), and half perceived that their health care providers were usually or always aware of the care they had received from other providers (50 percent).

Table 4.13. Perceptions of Health Care Providers' Awareness of Other Care Received (*N* = 268)

How Often Health Care Provider Seemed Informed About Care Received from Other Health Care Providers	Percentage	95% CI LL	95% CI UL
Never	16	12	21
Sometimes	33	27	39
Usually	29	23	35
Always	21	16	26

NOTE: The denominator for this item was limited to participants who reported having seen at least one health care provider in the past year. Percentages do not sum to 100 because participants with missing data on this item were included in the denominator.

Table 4.14 below shows that, overall, roughly half of participants who had received care from at least two health care providers in the past 12 months reported that they were satisfied or very satisfied with the coordination of their care. The other half was almost evenly divided into participants who were neither dissatisfied nor satisfied and participants who were dissatisfied or very dissatisfied with the coordination of their care. Thus, although a slight majority of participants appear to be satisfied overall with the coordination of their care, a nontrivial minority of participants indicated room for improvement in coordination of care.

Table 4.14. Overall Satisfaction with Coordination of Care in the Past 12 Months (*N* = 259)

Satisfaction with care coordination	Percentage	95% CI LL	95% CI UL
Dissatisfied or very dissatisfied	23	17	28
Neither dissatisfied nor satisfied	24	19	30
Satisfied or very satisfied	53	47	59

NOTE: The denominator for this item was limited to participants who reported having seen at least two health care providers in the past year.

Given the variation observed in perceptions of providers' awareness of other care received and overall satisfaction with care coordination, we sought to identify other characteristics of care received that might help to explain this variation. Specifically, we focused on whether receiving help with care coordination from a professional who had an explicit responsibility to help with care coordination explained significant variation in satisfaction with care coordination and perceptions of health care providers' awareness of care received from other providers. Accordingly, we created two mutually exclusive groups of participants: those who had received help with care coordination from a case manager at the MTF, case manager at the VA, Federal Recovery Care Coordinator, or Air Force Recovery Care Coordinator, and those who had not received help with care coordination from any of those sources of assistance. Then we examined differences in perceptions of the quality of care coordination across these two groups by comparing their mean ratings of perceived providers' awareness of other care received and levels of overall satisfaction with care coordination and conducting tests of significance.[17] As shown in Table 4.15, the group that received assistance from a professional whose role is focused on care management, coordination, or both had significantly more positive perceptions regarding their providers' awareness of care received from other providers ($F [1, 257] = 8.32$, $p < 0.01$) and significantly higher average satisfaction with care coordination ($F [1, 257] = 22.58$, $p < 0.001$).

Table 4.15. Mean Differences in Perceptions of Coordination of Care by Professional Coordination of Care (*N* = 259)

Care Coordination Subgroups	Mean	SE	95% CI LL	95% CI UL
Perception of health provider awareness of other care				
MTF, VA, Federal, or Air Force Coordinator (N = 151)	2.71	0.083	2.55	2.88

[17] We conducted Wald tests of significance, which allowed for inclusion of post-stratification sampling weights in the analysis.

Care Coordination Subgroups	Mean	SE	95% CI LL	95% CI UL
Other Care Coordination (N = 108)	2.33	0.102	2.13	2.53
Overall satisfaction with care coordination				
MTF, VA, Federal, or Air Force Coordinator (N = 151)	3.68	0.086	3.52	3.85
Other care coordination (N = 108)	2.96	0.126	2.71	3.21

NOTE: This analysis was limited to the subset of participants who reported having received health care from at least two providers in the past year to ensure that care coordination was a relevant concept. Perceptions of how often health providers were aware of care received from other providers were measured on a four-point scale ranging from 1 (never) to 4 (always). Overall satisfaction with care coordination was measured on a five-point scale ranging from 1 (very dissatisfied) to 5 (very satisfied).

As shown in Table 4.16, participants were also asked how often they were involved as much as they wanted to be in decisions about their health care, both physical and mental. Slightly more than three-quarters of participants reported that they were always or usually involved as much as they wanted in decisions about their health care (79 percent). However, 21 percent of participants indicated that they were involved as much as they wanted in decisions about their health care only sometimes or never.

Table 4.16. Patient Involvement in Health Care Decisions (*N* = 268)

How Often Participant Was as Involved as He or She Wanted to Be in Health Care Decisions	Percentage	95% CI LL	95% CI UL
Never or sometimes	21	16	26
Usually	27	21	33
Always	52	45	58

NOTE: Participants were asked, “In the last 12 months, how often were [they] involved as much as [they] wanted in decisions about [their] health care, including physical and mental health care?” Participants who answered “not applicable” to this question were excluded from the denominator for the percentages reported in the table.

Summary

This chapter provided an overview of the key findings on airmen’s previously diagnosed medical conditions, physical health and related service utilization, and mental health and mental health service utilization, as well as coordination of care. As would be expected for a population of airmen who, by definition, have medical concerns of sufficient magnitude that they are being considered for medical retirement, reported diagnoses of both physical and psychological health conditions were frequent. From an array of 19 different conditions, 91 percent reported being diagnosed with at least two conditions. Considering physical and psychological conditions

separately, 90 percent reported a diagnosis of at least one physical condition, and 80 percent reported being diagnosed with at least one psychological condition. In addition to asking airmen which diagnoses they had received, we also included brief symptom screeners for PTSD and depression, to gauge current experience of symptoms. Although the nature of our population was broader than in prior waves, which focused only on the combat injured rather than being inclusive of all wounded, ill, and injured, many were experiencing sufficient symptoms to screen positive for these conditions—62 percent for PTSD and 51 percent for depression.

The health care landscape for these airmen was complex. Many airmen were in treatment, as would be expected, with 66 percent reporting that they had received care for physical or mental health conditions in multiple systems over the past year. Even of those who were seen in only one system, fewer than ten airmen saw only one provider, indicating that the majority had to engage with multiple providers even if they were not bridging multiple systems of care.

For physical conditions, the MTF was the most common setting in which care was received (68 percent). Many airmen reported having numerous health care visits in the past year for physical conditions, with 47 percent reporting ten or more visits and only 11 percent reporting having had no visits. Of airmen who screened positive for current PTSD or depression, the majority (91 percent) reported having received treatment in the past 12 months, with 75 percent indicating they were getting both medication and therapy. As with physical conditions, the MTF was the most commonly reported location for care among those who received mental health services (67 percent).

For both physical and mental health conditions, roughly one-third of airmen reported difficulty obtaining treatment during the past year for that type of condition. Of those who reported difficulty obtaining treatment, the following barriers were fairly common for both physical and mental health: difficulty scheduling an appointment, not knowing where to get help or whom to see, and belief in one's own ability to handle the problem. Given the known stigmatization of mental health problems and related institutional and cultural barriers to care, we also asked those who reported having desired and not received mental health treatment during the past year about these types of barriers. As in past years, concerns that getting help could harm their career (44 percent), concerns about loss of respect from friends and family (33 percent) and supervisors (26 percent), as well as related concerns over getting or keeping a security clearance (31 percent), were frequently reported barriers. Concerns about the side effects of medication were also frequently reported (40 percent).

Of those who reported having seen two or more providers in the past year (96 percent of airmen in our population), 37 percent were assigned a lead coordinator, although it is important to note that at the time of the survey, only those with physical conditions would be routinely assigned one. Sources of help with care coordination included the airmen themselves (80 percent), health providers such as doctors (50 percent), and care coordination professionals such as Air Force Recovery Care Coordinators (25 percent). Only half reported that their providers were usually or always aware of other care provided; 16 percent reported their providers never

were. More than half were satisfied or very satisfied with coordination of care (53 percent), but a substantial minority (23 percent) were dissatisfied or very dissatisfied. Given that airmen generally saw multiple providers in multiple systems of care, this is likely to be a continuing issue for airmen in the same stage of transition as our study population.

Chapter 5. Interpersonal Relationships, Employment, and Financial Stability

In this chapter, we provide an overview of the key findings on airmen's interpersonal relationships, including the integration of family members and friends into the recovery process, employment status and barriers to employment, and financial stability.

Interpersonal Relationships

As shown in Table 5.1, the majority of participants were married or living together as married (56 percent). The next most common relationship status was "no current exclusive relationship" (31 percent), followed by "dating exclusively" (6 percent) and "separated" (5 percent).

Table 5.1. Current Relationship Status (*N* = 270)

Relationship Status	Percentage	95% CI LL	95% CI UL
Married or living together as married	56	50	62
Separated	5	3	9
Dating exclusively	6	4	10
No current exclusive relationship	31	26	37

Nearly half of participants reported having no children (47 percent, 95 percent CI [41, 54]). Similar proportions of participants reported having one child (20 percent, 95 percent CI [15, 25]), two children (17 percent, 95 percent CI [12, 22]), or three children (15 percent, 95 percent CI [11, 20]).

To determine whom the airmen consider their key source of social support, we asked each to identify the one person "who most often helps you deal with problems that come up." We asked each airman to select this person's relationship to him or her from a list of response options that included spouse or domestic partner, boyfriend or girlfriend, child, parent or parent-in-law, sibling or sibling-in-law, other relative, a friend, or not applicable (do not share problems with anyone). As shown in Table 5.2, about half of respondents selected a spouse or domestic partner as the primary supporter.

Those who said that no one helps them, which was the second most frequently chosen response at about 17 percent, were asked what best described the reason why. Although over half said it was because they did not ask for help (54 percent), 42 percent reported that it was because they lacked someone to help or because requested help was not provided.

Table 5.2. Relationship of Primary Supporter to Airman (*N* = 270)

Relationship	Percentage	95% CI LL	95% CI UL
Spouse or domestic partner	49	42	55
Boyfriend or girlfriend	4	2	6
Parent(s)/parent(s)-in-law	11	7	14
Child, sibling/sibling-in-law, or other relative	8	4	11
Friend	13	8	17
No one	17	12	21
Why no one helps participant with problems[a] (*N* = 48)			
Does not have anyone to help or asks for help but does not receive it	42	29	57
Does not ask for help because takes care of problems on one's own	54	39	68

NOTE: To identify the one person whom participants view as their "primary supporter," participants were asked, "Who most often helps [them] deal with problems that come up?"
[a]Those who answered "no one" to the question about who most often helps them with problems that come up were then asked, "Which of the following best describes why [they] answered that [they] have "no one" who helps [them] deal with problems that come up?" Numbers do not sum to 100 percent due to missing responses.

We also asked specifically about the participant's relationship with the person who provides the greatest sense of emotional security and well-being. As Table 5.3 shows, spouses or domestic partners were the primary providers of emotional support, followed by a parent or parent-in-law (14 percent), then a child, sibling, or other relative (13 percent). Just over one-tenth of participants reported that no one provides them with the greatest sense of emotional security and well-being (11 percent). Of the participants who reported having both a primary supporter to help with problems that come up and a primary provider of emotional support ($N = 210$), the majority reported that the person who helps with problems that come up is the same person who provides them with the greatest sense of emotional security and well-being (85 percent, 95 percent CI [79, 90]).

Table 5.3. Relationship That Provides the Greatest Emotional Support to Airman (*N* = 270)

Relationship	Percentage	95% CI LL	95% CI UL
Spouse or domestic partner	47	41	53
Parent/parent-in-law	14	10	19
Child, sibling/sibling-in-law, or other relative	13	10	18
Friend	10	7	14
Boyfriend or girlfriend	4	3	8
No one	11	8	16

NOTE: Participants were asked, "With whom do you have the relationship that provides you with the greatest sense of emotional security and well-being?"

To gain more insight into participants' interpersonal needs, we also asked about desired help connecting with others on a personal level and satisfaction with social activities and relationships. The majority of participants (74 percent, 95 percent CI[68, 79]) indicated that they would not like help connecting with others on a personal level. When asked to rate their satisfaction with social activities and relationships, roughly half of participants (49 percent) characterized this as "good, very good, or excellent" (95 percent CI[43, 56]). The other half of participants were divided nearly evenly between responses of "fair" (26 percent, 95 percent CI[20, 31]) and "poor" (23 percent, 95 percent CI[18, 29]).

Integration of Family Members and Friends into the Recovery Process

As shown in Table 5.4, family members and friends were integrated into the recovery process in a variety of ways, with the vast majority of participants reporting that their family members and friends provided support in all aspects of recovery assessed. Specifically, most participants reported that family members or friends provided support with getting treatment for physical conditions and injuries (85 percent); getting treatment for stress, emotional, alcohol, drug, or family problems (83 percent); encouraging social activity (84 percent); and efforts to find or keep a job (79 percent).

Table 5.4. Integration of Family Members and Friends into the Recovery Process

Family Members or Friends Provide Support in…	*n*	Percentage	95% CI LL	95% CI UL
Getting treatment for physical conditions and injuries	250	85	80	90
Getting treatment for stress, emotional, alcohol, drug, or family problems	225	83	78	88
Encouraging social activity	247	84	79	89
Efforts to find or keep a job	215	79	73	84

NOTE: The denominator for each item, shown under the column labeled "*n*," is limited to participants who answered "agree" or "disagree" and excludes those who indicated "not applicable." The column for "Percentage" contains the percentages of participants who agreed that family members or friends provide support in the manner described in the far left column.

Employment Status and Barriers

We examined employment status among all survey participants and found that the most-commonly endorsed category was "employed full-time" (24 percent) (see Table 5.5). A notable percentage of airmen reported that they were disabled and not working (20 percent). Nearly one-fifth of airmen were unemployed and looking for work (17 percent). According to the Bureau of Labor Statistics (BLS) U-3 measure (U.S. Department of Labor, 2013), which calculates unemployment as the percentage of those in the labor force who are unemployed and looking for

work, 35 percent of airmen at the time of the survey were unemployed. This high number is unsurprising given that many airmen in our sample are transitioning from the Air Force to civilian life.

Because our sample contained many airmen who are in the active component and on active duty and are therefore, by definition, employed, these numbers might be skewed toward a lower unemployment rate. Therefore, we also examined employment status after excluding airmen who were currently in the active component and on active duty. As shown in Table 5.5, the most commonly endorsed status was "disabled and not working" (25 percent). As might be expected in a group on the cusp of transition out of service, unemployment was quite high (41 percent) according to the Bureau of Labor Statistics U-3 measure (U.S. Department of Labor, 2013). However, only 18 percent of all airmen who were neither on active duty nor in the active component reported that they were unemployed and looking for work.

Table 5.5. Current Employment Status

Current Employment Status			
Entire Sample (*N* = 270)	**Percentage**	**95% CI LL**	**95% CI UL**
Working full-time	24	19	30
Working part-time	7	4	11
Unemployed and looking for work	17	12	21
Not working and not looking for work (homemaker, retired from working, and unemployed and not looking for work)	14	10	18
Disabled and not working	20	15	25
Student (full- or part-time)	17	12	22
Unemployment rate based on BLS U-3 (official) measure of unemployment[a,b] (*N* = 131)	35	26	43
Excluding Current Active Duty and Active Component (*N* = 171)	**Percentage**	**95% CI LL**	**95% CI UL**
Working full-time	20	14	26
Working part-time	7	3	11
Unemployed and looking for work	18	12	25
Not working and not looking for work (homemaker, retired from working, and unemployed and not looking for work)	12	7	17
Disabled and not working	25	18	32
Student (full- or part-time)	18	12	24
Unemployment rate based on BLS U-3 (official) measure of unemployment[a,c] (*N* = 75)	41	29	53

NOTE: Active-duty, active component airmen were excluded from these calculations because they are, by definition, employed full-time.
[a] Calculated as the percentage of people who are unemployed and looking for work divided by the workforce, which includes everyone who is working full time, working part time, or unemployed and looking for work.
[b] The denominator for this percentage was 131, which is the number of participants in the total sample who were working full-time, working part-time, or unemployed and looking for work.
[c] The denominator for this percentage was 75, which is the unweighted number of participants who were working full-time, working part-time, or unemployed and looking for work and not both active-duty and in the active component.

We also considered that educational opportunities might be pursued by participants who selected an employment status other than full- or part-time student. To assess the educational pursuits of these participants, we also asked this subgroup of participants a separate follow-up question about whether they were currently pursuing any college or graduate educational opportunities. Of these 230 participants whose employment status was other than full- or part-time student, 19 percent (95 percent CI [13, 24]) reported that they were pursuing college or graduate educational opportunities on a full-time basis, and 13 percent (95 percent CI [8, 17]) reported pursuing college or graduate educational opportunities on a part-time basis. Combining these participants with those who endorsed full- or part-time student as their employment status, 43 percent (95 percent CI [37, 50]) of all participants reported that they were currently pursuing some form of college or graduate educational opportunities.

If an airman indicated being unemployed (whether looking for work or not), we asked the respondent what barriers he or she perceived to employment. For ease of presentation, in Table 5.6, we have grouped these notionally into disability-related barriers, concerns about qualifications or skills, disincentives to employment, and "other." The most frequently endorsed barriers were feeling uncomfortable or anxious when thinking about working in the civilian workplace (58 percent), feeling not physically capable (51 percent), and lacking confidence in oneself and one's abilities (48 percent).

Table 5.6. Perceived Barriers to Obtaining Employment Among Those Not Currently Employed (*N* = 116)

Perceived Barriers	Percentage	95% CI LL	95% CI UL
Disability-related barriers			
Not physically capable	51	42	61
No one will hire me because of my injury or disability	32	24	41
Concerns about qualifications, skills, or abilities needed for civilian labor market			
I feel uncomfortable or get anxious when thinking about working in the civilian workplace	58	49	67
I lack confidence in myself and my abilities	48	39	58
Due to my long and/or multiple deployments, I feel behind compared to my peer civilian counterparts	26	19	35
I do not have the tools or knowledge to translate my military skills to the civilian workforce	25	18	34
Disincentives to obtain employment			
Available jobs don't pay enough	31	23	40
Would lose financial benefits (e.g., disability benefits)	18	12	27
Other			
Do not need a job because I receive benefit payments	30	22	40
Pursuing an education	26	18	35
Family prefers I stay at home	18	12	26

NOTE: Barriers to obtaining employment were assessed only among those who indicated that they were unemployed and looking for work, unemployed and not looking, or disabled and not working.

If an airman indicated being employed full- or part-time, we also asked about a slightly different set of barriers relevant to maintaining current employment or finding another job. As shown in Table 5.7, the most frequently endorsed barriers were worries that people would be reluctant to hire them because of their injury or disability (47 percent), feeling uncomfortable or

anxious when thinking about working in the civilian workplace (46 percent), and worries about the pay of available jobs (43 percent).

Table 5.7. Perceived Barriers to Maintaining or Obtaining Additional Employment Among Those Employed Full- or Part-Time (*N* = 88)

Perceived Barriers	Percentage	95% CI LL	95% CI UL
Disability-related barriers			
People will be reluctant to hire me because of my injury or disability	47	36	58
Not physically capable	28	19	39
Concerns about qualifications, skills, or abilities needed for civilian labor market			
I feel uncomfortable or get anxious when thinking about working in the civilian workplace	46	35	57
I lack confidence in myself and my abilities	32	22	43
Not qualified/lack education	31	22	42
Due to my long and/or multiple deployments, I feel behind compared to my peer civilian counterparts	23	15	33
I do not have the tools or knowledge to translate my military skills to the civilian workforce	17	11	28
Disincentives to obtain employment			
Available jobs don't pay enough	43	32	54
Other			
Do not know about available jobs	18	11	28

NOTE: Barriers to maintaining or obtaining additional employment were assessed only among those who indicated that they were currently employed full- or part-time.

Financial Stability

The U.S. Census Bureau reported that median household income in the United States in 2015, the year for which our respondents reported income, was $56,516 (U.S. Census Bureau, 2016). As shown in Table 5.8, about 42 percent of respondents indicated that their household income fell between $40,000 and $74,999. About 21 percent (excluding active duty, 24 percent), indicated that their income was at least $75,000. Approximately nine percent of respondents might be at risk of falling below U.S. Department of Health and Human Services (HHS) poverty guidelines, based on the number of people their 2015 household incomes supported. HHS poverty guidelines determine eligibility for certain federal aid programs and are not the same as the poverty thresholds that the Census Bureau reports. Note that this is a rough categorization based on the categorical nature of how household income was reported in our survey. For example, the guideline poverty level for a household of two people in the contiguous United States is $15,930 or less in household income; however, we coded someone as "at risk" if

anything less than $20,000 supported a household of two people. Thus, our at-risk categorization is more inclusive than the poverty guidelines. Results excluding the active-duty, active-component airmen were similar.

Table 5.8. Financial Resources and Responsibilities

	Total Sample (*N* = 270)			Excluding Active-Duty, Active Component (*N* = 171)		
Financial Indicators	**Percentage**	**95% CI LL**	**95% CI UL**	**Percentage**	**95% CI LL**	**95% CI UL**
Household income before taxes in 2015, in thousands of dollars						
Less than 40	35	29	41	35	27	42
40 to less than 75	42	36	48	39	31	47
75 or more	21	17	26	24	18	30
Number of people in household that the total household income supports, including the respondent						
1	31	25	37	34	27	42
2 or 3	37	31	44	36	28	44
4 or more	32	27	38	30	23	37
Below the 2015 HHS federal poverty guidelines[a]	9	5	13	9	4	14

[a]The 2015 HHS federal poverty guidelines are defined only for U.S. residents, so we excluded airmen who reside outside of the United States from this calculation.

Summary

In this chapter, we provided an overview of the key findings on airmen's interpersonal relationships, including the integration of family members and friends into the recovery process, employment status and barriers to employment, and financial stability. A substantial minority of airmen (17 percent) reported a lack of primary supporters, defined as the person that most often helps them deal with problems that come up. Among airmen who said they did not have a primary supporter, 42 percent said it was because they either had no one available or because desired help was unable to be obtained. The people identified as primary supporters (for those who had them) were most often spouses or partners (49 percent) and are also most often the same person who was reported to provide the greatest sense of emotional security and well-being (85 percent) for those who reported emotional support. Those who have access to social support indicate that it is integrated into many important aspects of reintegration, including getting treatment, social activities, and efforts to find and keep a job.

Among airmen who were not currently serving, the rate of those who were unemployed and actively looking for work as a proportion of those in the workforce (defined as employed part- or full-time, or looking for work) was quite high (41 percent), as might be expected in a group on the cusp of transition out of service. This number does exclude airmen not in the workforce such as those who say they are disabled and not working, retired, or seeking an education. If an airman indicated being unemployed (whether looking for work or not), disabled and not working, or retired, we asked the respondent about perceived barriers to employment. The most-frequently endorsed barriers were feeling uncomfortable or anxious when thinking about working, feeling not physically capable, and lacking confidence in themselves and their abilities. About 9 percent of airmen reported potential financial challenges, with their answers indicating that they might be falling below HHS's poverty guidelines.

Thus, although the majority of airmen did not report significant social, occupational, or financial problems, there are still some indicators of concern. Of those who said they had no primary supporter, a substantial proportion said it was because either no one was available, or because those asked for help were unable to provide it. Although a minority of airmen were seeking employment, the official unemployment rate for these airmen was quite high, indicating many had not yet transitioned into new employment. And, although a minority, the 9 percent of airmen at risk according to the poverty guidelines still represents a vulnerable subgroup of airmen in need of assistance.

Chapter 6. Program Utilization and Perceptions

In this chapter, we describe key findings on airmen's utilization and perceptions of the key nonmedical Air Force programs that serve wounded airmen. First, we report airmen's utilization and perceptions of the AFW2 program, which includes Air Force Recovery Care Coordination under its "brand umbrella." Then we describe utilization and perceptions of several more recently developed programs that provide services to airmen in our population. These programs include TAP, Airman and Family Readiness Centers, MASP, E2I, OWF, and RAMP.

Air Force Wounded Warrior Program

As shown in Table 6.1, most respondents (74 percent of those surveyed) reported that they had received help or services from a nonmedical case manager of AFW2. Given that we drew our sample from the population of AFW2 enrollees, this high level of program utilization is unsurprising.

We asked each respondent who had received help or services from an AFW2 representative to indicate *which* of several types of services or help he or she had received. The most commonly received types of AFW2 services were regular supportive calls (83 percent), support for a concern (80 percent), help or advice for filling out paperwork (80 percent), and having someone contact the airman (78 percent). Other types of help received by a majority of program users were referrals to other services (74 percent), advice for dealing with red tape (71 percent), advice for life matters (61 percent), and help adjusting to or coping with service-related physical or mental health conditions (55 percent). The least commonly received services were assistance with goal-setting and planning for the future through development of a Comprehensive Recovery Plan (CRP) or Recovery Care Plan (RCP) (46 percent), follow-up after development of a CRP or RCP (43 percent), or some other service. It is possible that due to variation in the manner of presentation and inconsistency of "branding" of CRPs and RCPs, some airmen who have a CRP or RCP may not be aware that they have one and so may not have endorsed these items.

Table 6.1. Air Force Wounded Warrior Program Utilization (*N* = 270)

	Percentage	95% CI LL	95% CI UL
Help or services received from nonmedical case manager of AFW2 program	74	68	79
Types of help or services received from AFW2 among those who had received help or services (N = 201)			
Regular supportive calls	83	77	88
Support for a concern	80	74	86
Help or advice for filling out paperwork	80	74	86
Contacted to receive assistance	78	72	84
Referrals to other services	74	68	81
Advice for dealing with red tape	71	65	78
Advice for life matters	61	54	68
Help adjusting to or coping with service-related physical or mental health conditions	55	48	62
Assistance with goal-setting and planning for future through development of CRP or RCP	46	38	53
Follow-up after development of CRP and RCP	43	35	50
Some other type of service	31	25	38

NOTE: The denominator for all percentages in the table except for "Help or services received from nonmedical case manager of AFW2 program" is limited to participants who reported having had contact with a nonmedical case manager of the AFW2 Program (*N* = 201).

Those who reported that they had a CRP or RCP were asked what life areas were covered in the goal-setting and planning that they had done with their AFW2 case manager. As shown in Table 6.2, work or education was the most frequently reported category (84 percent). Goal-setting related to finances was also quite common (73 percent), along with goal-setting related to stress, emotional, substance, or family problems (69 percent) and physical health problems (67 percent). Less than half of participants (42 percent) indicated goal-setting and planning for personal relationships.

Table 6.2. Life Areas Covered in Goal-Setting and Planning with Air Force Wounded Warrior Case Manager (*N* = 96)

Goal-Setting and Planning	Percentage	95% CI LL	95% CI UL
Work or education	84	75	91
Finances	73	63	81
Stress, emotional, alcohol, drug, or family problems	69	58	77
Physical health problems	67	56	76
Personal relationships	42	33	53

NOTE: The denominator for these percentages includes only airmen who indicated in a previous question that they had a CRP or RCP.

Of respondents who reported having received at least one type of service or help from an AFW2 representative, we asked whether they agreed or disagreed with several statements designed to assess their perceptions of specific services that AFW2 provides and their overall satisfaction with the program. As shown in Table 6.3, the vast majority of respondents agreed that AFW2 case managers provide good information on available resources (92 percent), are easy to get in touch with (89 percent), and are able to give needed support (87 percent), indicating that the great majority of respondents perceive case managers positively. Overall, 87 percent agreed that they were satisfied overall with the services provided.

Table 6.3. Air Force Wounded Warrior Case Management Satisfaction (*N* = 198)

Perception	Percentage	95% CI LL	95% CI UL
Would recommend the AFW2 program to a friend	94	90	96
Case managers provide good information on available resources	92	86	95
Case managers are easy to get in touch with	89	83	92
Case managers are able to give me support*	87	82	92
Likely to continue to use AFW2 program support	86	80	90
Services available through AFW2 case managers can help with issues caused during Air Force service*	79	74	85
Case managers can help me achieve my goals	77	71	83
Services provided by the AFW2 program help with reintegration issues	72	65	78
Case managers can provide useful information on medical conditions and the recovery process	71	64	77
Case managers helped me believe that I could improve my life	44	37	51
Overall satisfied with services provided by AFW2 program	87	82	92

NOTE: To ensure that respondents would have at least some relevant experience to inform their assessments of the AFW2 program, we limited the denominator for these percentages to respondents who reported having used at least one service. The percentages reflect the weighted proportions of respondents who agreed with the AFW2 program perception listed in the left column. The asterisk (*) marks a statement that was negatively worded in the survey, i.e., the respondent was asked whether he or she agreed or disagreed that "The services available through AFW2 case managers can't really help me deal with any issues caused during my Air Force service."

We also asked participants how often they had been contacted by AFW2 case managers in the past 90 days. As shown in Table 6.4 below, the majority of respondents (52 percent) reported having been contacted by their AFW2 case manager once a month. The least frequently reported amount of contact was multiple times per week (5 percent).

We also asked airmen about whether their amount of contact with AFW2 case managers was enough. Overall, 77 percent of airmen who had received at least one service from AFW2

reported that their frequency of contact with an AFW2 case manager is sufficient (see Table 6.4). We also examined reported sufficiency of contact by frequency of contact with AFW2 case managers and found that the proportion of participants who reported sufficient contact declined as the frequency of contact declined. While frequency of contact was considered sufficient by the vast majority of those who had had contact with an AFW2 case manager at least once a week (97 percent) or once a month, (88 percent), it was considered sufficient by less than half (42 percent) of participants whose frequency of contact was no more than once every few months.

Table 6.4. Air Force Wounded Warrior Program Contact Frequency and Sufficiency of Contact Frequency (*N* = 198)

		95% CI	
Perception	**Percentage**	**LL**	**UL**
Frequency of contact in past 90 days			
Multiple times a week	5	2	8
Once a week	16	11	22
Once a month	52	45	59
Once every few months	18	12	23
Less than once every few months	10	5	14
Frequency of contact with AFW2 case manager is often enough to get needed services			
Overall sample (*N* = 198)	77	71	83
Contact with AFW2 case manager at least once a week (*N* = 41)	97	90	100
Contact with AFW2 case manager once a month (*N* = 99)	88	81	94
Contact with AFW2 case manager no more than once every few months (*N* = 58)	42	28	55

NOTE: To ensure that respondents would have at least some relevant experience to inform their assessments of the AFW2 program, we limited the denominators for all of the percentages to respondents who reported having used at least one service.

We also asked participants about their use of some relatively new programs that offer services for wounded warriors (new relative to AFW2), as well as some of the more generally available and relevant programs or services. Rates of uptake varied widely (see Table 6.5). The majority of airmen reported having received services from TAP (77 percent) and Airman and Family Readiness Centers (60 percent). Rates of utilization were much lower for MASP (18 percent), E2I (16 percent), OWF (7 percent), and RAMP (5 percent), all of which have been more recently developed. The low rates of uptake for some of these programs may be partly explained by their newness. Differences in rates of program utilization may also be at least partly attributable to differences in the breadth of services offered. That is, the more commonly used programs offer services that are relevant to many—if not most—airmen. For example, TAP provides briefings on VA benefits, and the Airman and Family Readiness Centers connect

airmen and their families to a broad array of resources. The less commonly used programs, by contrast, offer a narrower set of resources designed to target a specific problem (e.g., finding employment, as E2I and OWF do) and may therefore appeal to a smaller subset of airmen.

Table 6.5. Utilization of Other Programs That Serve Wounded Airmen (*N* = 270)

	Percentage	95% CI LL	95% CI UL
Transition Assistance Program			
Yes	77	72	82
No	21	16	26
Airman and Family Readiness Centers			
Yes	60	54	66
No	38	32	44
Military Adaptive Sports Program			
Yes	18	13	23
No	76	71	81
Not Applicable	5	3	8
Education and Employment Initiative			
Yes	16	12	21
No	76	71	81
Not Applicable	5	2	8
Operation Warfighter			
Yes	7	3	10
No	88	83	92
Not Applicable	5	3	8
Recovering Airman Mentorship Program			
Yes	5	2	7
No	90	86	94
Not Applicable	5	2	7

NOTE: We did not report the percentage of respondents who indicated that the A&FRCs and TAP were not applicable to them because fewer than ten participants endorsed that response option.

Below we report findings on perceptions of each of these programs and services among airmen who have used them. We do not present additional findings on users' perceptions[18] of

[18] We assessed users' perceptions of OWF with items such as "The Operation Warfighter program has connected me with local internships that will help me reach my career goals," and "The Operation Warfighter program has helped my chain of command and internship supervisor coordinate to schedule my internship." We assessed perceptions of RAMP with items such as "My mentor was well-matched to me based on similarity in our personal experiences" and "My mentor has asked me what I want or need help with."

OWF and RAMP because the number of users of each program was too small to permit reliable estimation of the percentages of airmen who endorsed each perception.

Transition Assistance Program

We asked those who had received services from TAP about the ways in which the program had helped them and their overall satisfaction with the services they received. In general, program users reported very positive perceptions of TAP (see Table 6.6). The vast majority of program users reported that the VA benefits briefings provided helpful information, and over three-quarters of program users indicated that TAP employment assistance provided useful in transitioning to the civilian workplace. Over 80 percent of program users reported overall satisfaction with services received from TAP.

Table 6.6. Transition Assistance Program

	N	Percentage	95% CI LL	95% CI UL
VA benefits briefings provided helpful information about benefits	198	89	84	93
TAP employment assistance provided useful help to transition to civilian workplace	182	78	72	84
Overall satisfied with services from TAP	198	81	76	87

NOTE: The denominators for these percentages were limited to respondents who reported having used TAP to ensure that respondents would have at least some relevant experience to inform their assessment of the program. Participants who indicated that the item was "not applicable" were excluded from denominators, and denominators (unweighted) for each item are reported in the column labeled *N*. The percentages reflect the weighted proportions of respondents who agreed with the program perception listed in the left-hand column.

Airman and Family Readiness Centers

We asked airmen who had received services from the A&FRCs about the ways in which the centers had helped them and their overall satisfaction with services received (see Table 6.7). The vast majority of program users reported that the centers had connected them with helpful resources and expressed overall satisfaction with services received from the centers.

Table 6.7. Airman and Family Readiness Centers

	N	Percentage	95% CI LL	95% CI UL
Centers connected individual with helpful resources	150	88	83	94
Overall satisfied with services from centers	156	92	88	96

NOTE: The denominators for these percentages were limited to respondents who reported having used A&FRCs to ensure that respondents would have at least some relevant experience to inform their assessment of the program. Participants who indicated that the item was "not applicable" were excluded from denominators, and denominators (unweighted) for each item are reported in the column labeled *N*. The percentages reflect the weighted proportions of respondents who agreed with program perception listed in the left-hand column.

Military Adaptive Sports Program

Of those who had received services from MASP, the majority reported positive perceptions of services received. Nearly all participants agreed that MASP provided opportunities to spend time with other airmen who are in a similar situation, showed them new opportunities for growth, and provided stress relief (see Table 6.8). Most participants indicated that they were satisfied overall with the services they had received from MASP (90 percent).

Table 6.8. Military Adaptive Sports Program

	N	Percentage	95% CI LL	95% CI UL
Provided opportunities to spend time with other airmen who are in a similar situation	37	97	92	100
Showed new opportunities for growth	35	93	83	100
Provided stress relief	35	86	74	98
Overall satisfied with services from program	36	90	81	100

NOTE: The denominators for these percentages were limited to respondents who reported having used the MASP to ensure that respondents would have at least some relevant experience to inform their assessment of the program. Participants who indicated that the item was "not applicable" were excluded from denominators, and denominators (unweighted) for each item are reported in the column labeled *N*. The percentages reflect the weighted percentages of respondents who agreed with program perception listed in the far left column.

Education and Employment Initiative

In general, airmen who had received services from E2I were satisfied with the different types of services received (see Table 6.9). The vast majority of program users agreed that the regional coordinator provided good information to meet their needs and expressed overall satisfaction with services received from E2I (85 percent). Roughly three-fourths of program users considered

E2I to have helped them relate their military skills to the civilian job market, make progress on education and employment goals, and connect them with good local educational and employment opportunities. A smaller percentage—but still the majority—of program users reported that E2I had increased their confidence in their ability to work in the civilian workplace.

Table 6.9. Education and Employment Initiative

	N	Percentage	95% CI LL	95% CI UL
Regional coordinator provided good information to meet needs	41	90	79	100
Helped relate military skills to civilian job market	34	77	61	93
Helped make progress on education and employment goals	39	76	62	91
Connected individual with good local educational and employment opportunities	38	75	60	91
Increased confidence in ability to work in the civilian workplace	34	59	41	78
Overall satisfied with services from initiative	43	85	74	97

NOTE: The denominators for these percentages were limited to respondents who reported having used E2I to ensure that respondents would have at least some relevant experience to inform their assessment of the initiative. Participants who indicated that the item was "not applicable" were excluded from denominators, and denominators (unweighted) for each item are reported in the column labeled *N*. The percentages reflect the weighted percentages of respondents who agreed with program perception listed in the left-hand column.

Summary

We assessed airmen's utilization and perceptions of several Air Force programs that provide services to wounded airmen, including AFW2 and more-recently developed programs. Most airmen reported having received services from AFW2 (74 percent). Of airmen who had received services from AFW2, most endorsed positive perceptions of AFW2, with 87 percent indicating overall satisfaction with AFW2. Most airmen who had received services from AFW2 also indicated that their amount of contact with AFW2 case managers was sufficient.

Despite the overall positive perceptions of AFW2 program users, there were some aspects of AFW2 that were perceived less favorably by program users. Among those who received services from AFW2, only 44 percent agreed that AFW2 case managers could help them improve their lives. In addition, 27 percent of airmen who had received services from AFW2 reported having been contacted no more than once every few months by an AFW2 case manager, and, of these airmen, more than half considered this amount of contact insufficient.

The percentages of airmen who had received services from more-recently developed programs varied widely, ranging from 5 percent for RAMP to 77 percent for TAPS. For all of the newer programs whose uptake was high enough to permit examination of program perceptions (all but OWF and RAMP), the majority of program users reported positive perceptions of the programs and services.

Chapter 7. Conclusions and Recommendations

We examined well-being based on a range of indicators among a population that the Air Force identified as experiencing challenges substantial enough to warrant consideration for medical retirement due to a variety of illnesses, wounds, and injuries. Our wave 3 survey findings demonstrate that these airmen are confronting a range of challenges as they transition out of the Air Force and into the civilian world and the care of the VA. In this chapter we offer conclusions and recommendations for the Air Force to consider integrating into its ongoing efforts to mitigate these challenges. To streamline the presentation of conclusions and recommendations, we have categorized them into two groups: medical and nonmedical.

Medical

Taken together, survey findings indicate that airmen experienced challenges in the areas of care coordination and navigation of the health care system, as well as barriers to care related to concerns about the quality and confidentiality of health care. We offer the following recommendations to address these challenges and barriers to care:

Consider providing assistance from a professional with a designated care coordination role to improve care coordination outcomes. Survey results indicated that care coordination may be an issue for many airmen, with about half of airmen reporting that their providers were not aware of relevant care coordination information. A similar proportion reported lack of satisfaction with care coordination, with a substantial minority (23 percent) who were dissatisfied or very dissatisfied. Given that so many of our respondents received care in multiple systems, from multiple providers, and in the course of multiple appointments, it is very likely that the need for coordination was high. Similarly, given the complex care landscape faced by airmen, detailing the exact source of failed care coordination is difficult within our data. However, these are indications that stakeholders concerned about the coordination of care for airmen with these complex situations should continue efforts to improve coordination, both within and across systems. Because care coordination outcomes such as satisfaction and reported provider awareness of care information were significantly improved when a professional whose role is focused on care management and/or coordination from either the Air Force or VA was involved, however*, we suggest that care coordination may be enhanced by offering professional assistance that specifically targets care coordination.*

Continue consideration of system capacity and navigability initiatives to address the complexity and lack of capacity of the health care system. A complex system is one known problem; system capacity is another. About one-third of airmen reported having desired treatment for psychological conditions in the past year, but were unable to obtain it. A similar

proportion of airmen reported having desired treatment for physical conditions in the past year, but were unable to obtain it. For each type of condition, about half of airmen who desired but were unable to obtain care reported that one of the barriers to care was difficulty scheduling an appointment. Not knowing where to get help or who to see was also relatively common. There are several possible causes of scheduling difficulties, including a shortage of mental health care providers, inflexible clinic hours (e.g., clinics don't offer appointments in the evenings or on weekends), and difficulty navigating the bureaucracy of the medical clinic to reach the point of contact who handles appointment scheduling, as well as challenges in knowing with whom to schedule. We did not explicitly assess possible causes of scheduling difficulties, nor did we tie barriers experienced with the treatment setting in which they occurred. Offering targeted intervention recommendations is somewhat difficult absent this information. However, this has been a perennial concern noted in the first and second waves of the study as well. The repeat of this concern in wave 3 of the study, with the additional information that it is quite a common concern for those with physical conditions, suggests that *this is a persistent problem and that stakeholders should continue to seek to address it through consideration of system capacity, and system navigability, initiatives.*

Continue efforts to collect and publicize data on the quality of care provided and engage airmen in discussions of treatment options. Concerns about the quality of care available to airmen were also commonly endorsed as barriers to seeking treatment for both physical and mental conditions. For both types of conditions, belief that the treatments available to them are not very good, and a conviction that they would do better on their own, without professional treatment, was reported by more than a third who had desired but not obtained treatment in the past year. Concerns about the quality of care provided to service members and veterans are at least partly attributable to insufficient assessment, tracking, and reporting of the implementation of EBTs in practice across health care systems, including the VA, DoD, and civilian settings (Defense Health Agency, 2014; Hepner et al., 2016; Hussey et al., 2015), and calls for increased attention to the measurement of the quality of care provided through DoD and the VA and through TRICARE-participating care providers have been issued. While efforts are underway, much remains to be done in DoD, as well as other health care systems (VA and civilian settings), to improve the measurement of quality of care. To inform airmen's decisions about the treatment options that are best for them, it will be necessary to continue to *collect and publicize data on the quality of care provided*. Because ongoing measurement of the quality of care provided is critical to ensuring that EBTs adhere to the treatment protocol and are therefore likely to exert beneficial influences on mental health (e.g., Burnam et al., 2008; DiMatteo, Haskard-Zolnierek, and Martin, 2012; Institute of Medicine, 2014), such efforts serve a dual purpose: informing airmen of the quality of care available, and enhancing delivery of that care.

As noted, there are ongoing efforts to assess the quality of care provided to airmen. One example is the Health Care Survey of DoD Beneficiaries (HCSDB), which is modeled after the civilian CAHPS sponsored by the Agency for Healthcare Research and Quality. The HCSDB,

which is administered three times annually, examines DoD beneficiaries' experiences with health care and health plans and provides insight into the quality of care from patients' perspectives. According to the latest publicly available findings on airmen who used TRICARE and were surveyed in 2014, the Air Force scored significantly below benchmarks based on the CAHPS on several aspects of care, including ease of access, doctors' communication, customer service, and health care, but exceeded benchmarks on health plan and healthy behaviors such as smoking and body mass index (TRICARE, 2014).[19] Another example of efforts to measure the quality of care provided to airmen is a recent RAND assessment of the quality of care provided to service members who received direct or purchased care in the MHS (Hepner et al., 2016). This study suggests that the MHS has definite room for improvement in the adequacy of follow-up in the first weeks after diagnosis, although the system performed well in other areas such as assessment for suicidal ideation and substance abuse. While this evaluation also included some consideration of purchased care under the MHS, the depth of the evaluation for such care was necessarily limited by the availability of administrative data for those outpatient settings. The ongoing research on quality of care in various settings has also noted opportunities for improvement of existing care to ensure the best treatment (e.g., Hepner et al., 2016).

Continued discussions about patient beliefs about treatment and its efficacy can also have a positive influence on adherence to treatment (DiMatteo, Haskard-Zolnierek, and Martin, 2012). Options also exist for how to frame and conduct these discussions in the military context in a systematic manner, although these types of interventions need further study (Mott et al., 2014).

Consider revising DoD policies on the confidentiality of mental health treatment. Another type of barrier to mental health treatment that airmen commonly reported pertained to concerns regarding treatment confidentiality. Our findings show that approximately one-third of respondents who reported having desired but not obtained treatment for mental health conditions in the past year reported one or more of the following: concerns about confidentiality and concerns that treatment-seeking would negatively affect the respect of their colleagues and their career or would result in denial of a security clearance in the future (which, if treatment were confidential, would be mitigated as concerns). Efforts are ongoing to reduce or eliminate the stigma associated with seeking mental health treatment in the military (see, e.g., the description of programs in Weinick et al., 2011), and some limited work suggests that mental health treatment-seeking is unlikely to result in adverse career effects (Christensen and Yaffe, 2012; Rowan and Campise, 2006). Along with continuing efforts of demonstrable efficacy, *which would entail study of those initiatives' success*, we also suggest that DoD consider revising its policies on military mental health confidentiality standards for service members, echoing others' suggestions (e.g., Acosta et al., 2014; Engel, 2014; Neuhauser, 2011).

[19] Benchmarks for healthy behaviors come from population health goals specified in Healthy People 2020 (Healthy People 2020, 2019).

Military service members who seek mental health treatment do not enjoy the same protections of confidentiality that their civilian peers do (Neuhauser, 2011), though no empirical evidence suggests that limiting confidentiality in this way serves its intended purpose of fostering military readiness (Engel, 2014). Indeed, to the extent that mental health problems compromise military readiness and concerns about confidentiality limit seeking of mental health treatment, current policy might actually *compromise* military readiness. Moreover, applying the confidentiality standards observed in the civilian sector to the military is not without analogue: Pastoral counseling that chaplains provide is granted absolute confidentiality, and attorney-client privilege in the military is similar to that in the civilian world (Engel, 2014). A recent report on mental health stigma in the military recommended one approach to reconsider DoD policy, with the suggestion to convene a task force "to explore the tensions between a command's need to know a service member's mental health status and treatment history and the need for privacy" (Acosta et al., 2014, p. 101).

Nonmedical

Survey findings also highlighted several challenges in nonmedical domains, including interpersonal relationships and employment. We offer the following recommendations for improving services and programs that are designed to address these areas.

Connect airmen with social support deficits to available resources that provide social support and integrate family and friends into airmen's recovery process. Survey findings underscored the importance of social support to reintegration, and while the majority of airmen reported that they did not need help connecting with others on a personal level, for a minority of airmen the findings revealed troubling deficits in social support. A substantial minority of airmen (17 percent) reported a lack of primary supporters, which closely tracks the 24.6 percent of the U.S. general adult population that reported having no one with whom to discuss important matters in the 2004 General Social Survey (McPherson, Smith-Lovin, and Brashears, 2006). About 40 percent of airmen who lacked a primary supporter said it was either because they had no one available or because desired help was not obtained. Those who have access to social support indicate that it is integrated into many important aspects of reintegration, including pursuing treatment, social activities, and efforts to find and keep a job. Moreover, previous waves of this study documented that social support was related to an improvement in PTSD symptoms, which is a notable concern for our population even in the current study. Taylor (2011) summarized research linking social support, broadly construed, to health outcomes, including for physical conditions. Specifically, she summarized various studies that have shown that including families in behavioral change interventions or recruiting them in the promotion of particular medical treatment programs can be beneficial in maintaining the desired behaviors. A more recent review of peer-supported interventions for a wide variety of health and wellness-related outcomes (Ramchand et al., 2017) found that the use of peer educators showed promise

for improving knowledge, attitudes, beliefs, and perceptions (e.g., perceptions of stigma) and social outcomes and connectedness (e.g., social support). Additionally, they indicated that dyadic peer support studies showed promise for outcomes such as behavior change. These broad reviews suggest that integrating families and peers into reintegration has promise for our vulnerable airmen, as well.

Thus, while this vulnerable group is a relatively small subset in the overall cohort of airmen involved in AFW2, providers should be aware of social support as an issue and seek to make available services designed to alleviate deficits in this area, as well as continuing to integrate friends and family into reintegration efforts. Note that while we consider social support as its own domain, reintegration and support programs might help mimic the natural support system (i.e., family, friends, community, and spiritual and religious leaders) during a time when social supports are likely to be disrupted. Telephone calls and frequent contact with airmen enable these service providers to advise, guide, and assist with formulating life and recovery goals, or just listen. These programs can also provide support at critical transition junctures, such as immediately upon leaving service; ensuring a so-called warm handoff to other support structures, such as the VA, or during geographic relocations.

Continue providing employment assistance to transitioning airmen. Among airmen who were not currently serving, the unemployment rate was quite high (41 percent) and does not compare favorably to the U-3 unemployment rate for December 2016—4.5 percent, not seasonally adjusted (U.S. Department of Labor, Bureau of Labor Statistics, 2016), though this number excludes airmen not in the workforce such as those who say they are disabled and not working, retired, or seeking an education. A caveat to consider with regard to higher unemployment rates is that when service members leave the service, higher rates of unemployment are anticipated as a matter of course: By definition, these people have lost their employment. Further, as noted by Loughran (2014), the nature of military service means that many service members find it difficult to secure another job before leaving service, unlike some civilian job seekers. Airmen who responded to our survey were at the point of transition, and are very likely to need employment assistance. Reported barriers to finding a job included feeling uncomfortable or anxious when thinking about working, feeling not physically capable, and lacking confidence in themselves and their abilities. The literature suggests that attention to individual skill sets and the presentation thereof on resumes and in interviews, as well as individual preferences for work, pays dividends in the forms of employment, lasting employment, and satisfaction (Drake, Bond, and Becker, 2012; Liu, Huang, and Wang, 2014; Resnick, Rosenheck, and Drebing, 2006; Wanberg, 2012). Self-efficacy and other types of training can also be beneficial for those who are having difficulties finding employment (Liu, Huang, and Wang, 2014; Wanberg, 2012). Employment interventions are available to these individuals and may help: For example, it is notable that most participants in E2I reported that the program was helpful in translating military skills to a civilian context (77 percent) and increasing confidence in airmen's ability to work in a civilian context (59 percent).

Continually assess the uptake and performance of new programs for wounded airmen and consider revisions or discontinuation as warranted. Though many nonmedical programs offered by the Air Force enjoyed high saturation among respondents, and many also had reportedly high satisfaction, some programs had lower uptake. In part, this might be due to the relative newness of a given program, as the rollout of some programs was just beginning when we developed and fielded our survey. In addition, some programs have restricted eligibility or may appeal to a narrower subset of airmen than others. For example, A&FRC, a universal benefit that provides a broad array of resources to airmen and their families, had one of the higher rates of uptake among the programs. By contrast, MASP, which is designed to engage airmen in the early stages of recovery in recreational activities and sports such as volleyball, might be less commonly used because it is targeting a more specialized subset of airmen. Moreover, MASP might require greater density of users to be used; for example, playing sports often requires enough participants to form teams. Thus, implementing this type of program at a small base might prove particularly challenging. Finally, even if an airman is eligible for a given program, actual uptake depends on individual goals and desires.

Uptake of programs should continue to be monitored. For those for which uptake is consistently low and eligibility is not commensurately restricted, it may be worthwhile to consider marketing initiatives to increase awareness. Moreover, although this study does include an assessment of program perceptions, we did not conduct an evaluation of the effectiveness of any of these programs, i.e., examining the effects of program participation on outcomes in an experimental study (with random assignment of eligible program users to the program versus a control group that does not participate in the program). Thus, the true benefits of program participation cannot be definitively ascertained. Lastly, assessment of the benefit of programs should be ongoing. Even programs that help a small population may be beneficial and thus worthwhile for this vulnerable population. Programs or services with both low uptake and low efficacy, however, may warrant discontinuation.

Concluding Comments

The process of recovery and reintegration is likely to be challenging for wounded, ill, and injured airmen. A long-term approach is needed to be able to gauge the effectiveness of the many interventions and conditions that affect this process. However, although we endeavored to implement a holistic approach, no one analysis can encompass the complexities in real life, making it appropriate to leverage quality research from multiple avenues. As one of these avenues, and drawing from our long-term work with the Air Force on these issues, we offer several suggestions relevant to improving the quality of life for airmen experiencing a transition made more challenging due to a variety of injuries and illnesses.

Appendix A. Survey Instrument

AIRMEN SURVEY

PROGRAM ASSESSMENT

The Air Force Wounded Warrior Program (AFW2) provides case management and care coordination services to wounded, ill, and injured airmen to help them return to duty or, if this is not feasible, transition out of the Air Force and return to civilian life. Early in the recovery process, recovery care coordinators (RCCs) help particularly severely injured airmen develop and follow a Comprehensive Recovery Plan (CRP) that outlines goals for recovery. Later in the recovery process, nonmedical case managers help connect airmen to a wide array of services and resources to meet the individual airman's needs. Now I would like to ask you some questions about your experiences as a recipient of services from AFW2 personnel.

Air Force Wounded Warrior Questions

AFWW1. Have you received any help or services from a nonmedical case manager of the Air Force Wounded Warrior program?

1. Yes

2. No

3. (VOL) Not sure what the Air Force Wounded Warrior program is

98. (VOL) DK

99. (VOL) REF

[Programmer: If AFWW1 = yes, go to AFWW2. If AFWW1 = no/not sure/DK/REF, go to PR1.]

AFWW2. What help or services have you received from the Air Force Wounded Warrior case management personnel? Please tell me yes or no for each.

[Response options include:]

1. Yes

0. No

98. (VOL) DK

99. (VOL) REF

AFWW2a. Referrals to other services

AFWW2b. Help or advice for filling out paperwork

AFWW2c. Advice for life matters

AFWW2d. Advice for dealing with red tape (such as, who to call)

AFWW2e. They had someone contact you to give you assistance

AFWW2f. Regular supportive calls

AFWW2g. Support for a concern you had

AFWW2h. Assistance with goal-setting and planning for the future through the development of a Comprehensive Recovery Plan (CRP) or Recovery Care Plan (RCP)

AFWW2i. Follow-up after the development of your Comprehensive Recovery Plan and Recovery Care Plan to help you stay on track to meet your goals

AFWW2j. Help adjusting to or coping with physical or mental health conditions that you developed during or after your military service

AFWW2k. Some other help or service:_____

[PROGRAMMER: If respondent indicated that he/she has a Comprehensive Recovery Plan or Recovery Care Plan (yes to AFWW2h or AFWW2i), ask AFWW3a-e. If respondent indicated yes to at least one of AFWW2a-k and said No/DK/REF to both AFWW2h and AFWW2i, go to AFWW4. If AFWW2a-k ALL = No/DK/REF, go to PR1.]

AFWW3. Which of the following areas of your life are covered in the goal-setting and planning that you do with your Air Force Wounded Warrior case manager? Please tell me "yes" or "no" for each I read.

[Response options]

1. Yes

0. No

98. (VOL) DK

99. (VOL) REF

AFWW3a. physical health problems

AFWW3b. stress, emotional, alcohol, drug, or family problems

AFWW3c. personal relationships

AFWW3d. work or education

AFWW3e. finances

AFWW4. Please tell me whether you agree or disagree with each of the following statements about the Air Force Wounded Warrior case management personnel. For each statement I read, please say “agree” or “disagree.”

[Response options]

1. Agree

0. Disagree

98. (VOL) DK

99. (VOL) REF

AFWW4a. The case managers give you good information on what resources are available to you during your recovery process.

AFWW4b. The case manager helped you believe that you could improve your life.

AFWW4c. The services available through Air Force Wounded Warrior case managers can’t really help you deal with any issues caused during your Air Force service.

AFWW4d. Air Force Wounded Warrior case managers are easy to get in touch with if you wanted to contact them.

AFWW4e. You feel that the Air Force Wounded Warrior case managers are not able to give you the support you need.

AFWW4f. You feel the services provided by the Air Force Wounded Warrior program help you deal with reintegration issues.

AFWW4g. The case managers can help you to achieve your personal goals.

AFWW4h. The case managers can provide useful information on your medical conditions and recovery process.

AFWW4i. You would recommend the Air Force Wounded Warrior program to a friend.

AFWW4j. You are likely to continue to use Air Force Wounded Warrior Program support.

AFWW4k. Overall, you are satisfied with the services provided by the Air Force Wounded Warrior program.

AFWW5.1 About how often in the past 90 days have you been contacted by Air Force Wounded Warrior case managers?

1. Multiple times a week
2. Once a week
3. Once a month
4. Once every few months
6. (VOL) You have not been contacted by an Air Force Wounded Warrior case manager in the past 90 days
98. (VOL) DK
99. (VOL) REF

AFWW5.2 Is that:

1. Too often
2. About the right amount
3. Not often enough
98. (VOL) DK
99. (VOL) REF

Other Programs and Benefits for Wounded Airmen and Their Family and Friends

Now I would like to ask you some questions about other DoD and Air Force programs for wounded airmen.

PR1. Have you received services from the following programs?

[Response options]
1.Yes
0. No
97. Not applicable
98. (VOL) DK
99. (VOL) REF

PR1a. Recovering Airman Mentoring Program
PR1b. Military Adaptive Sports Program
PR1c. Education and Employment Initiative
PR1d. Operation Warfighter
PR1e. Airman and Family Readiness Centers
PR1f. Transition Assistance Program (TAP)

[Programmer: For each program from which the respondent has received services (for each "yes" response to PR1a-1f), ask questions below about the corresponding program; otherwise skip respondent out of questions about the program.]

Recovering Airman Mentoring Program

[Programmer: If PR1a = yes, ask RAMP1-5. If PR1a = no/not applicable/DK/REF, skip RAMP1-5.]

Please tell me whether you agree or disagree with each of the following statements about the Recovering Airmen Mentoring Program. For each statement I read, please say "agree," "disagree," or "not applicable."

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

RAMP1. Your mentor was well-matched to you based on similarity in your personal experiences.

RAMP2. Your mentor has asked you what you want or need help with.

RAMP3. Your mentor has helped you adjust to or cope with physical or mental health conditions that you developed during or after your military service.

RAMP4. Your mentor has provided assistance that you wouldn't otherwise get from other staff (e.g., medical staff, case managers, other nonmedical staff) who have assisted in your recovery.

RAMP5. Overall, you are satisfied with the assistance you've received from your mentor.

Military Adaptive Sports Program

[Programmer: If PR1b = yes, ask MASP1-5. If PR1b = no/not applicable/DK/REF, skip MASP1-5.]

Please tell me whether you agree or disagree with each of the following statements about the Military Adaptive Sports Program. For each statement I read, please say "agree," "disagree," or "not applicable."

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

MASP1. The Military Adaptive Sports Program has shown you new opportunities for growth.

MASP2. The Military Adaptive Sports Program has provided stress relief.

MASP3. The Military Adaptive Sports Program has provided opportunities to spend time with other airmen who are in a similar situation.

MASP4. The Military Adaptive Sports Program has helped with your rehabilitation.

MASP5. Overall, you are satisfied with the services you've received from the Military Adaptive Sports Program.

Education and Employment Initiative

[Programmer: If PR1c = yes, ask EEI1-6. If PR1c = no/not applicable/DK/REF, skip EEI1-6.]

Please tell me whether you agree or disagree with each of the following statements about the Education and Employment Initiative. For each statement I read, please say "agree," "disagree," or "not applicable."

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

EEI1. Your regional coordinator has provided good information to meet your needs.

EEI2. Your regional coordinator has helped you relate your military skills to the civilian job market.

EEI3. Your regional coordinator has connected you with good local educational and employment opportunities.

EEI4. Your regional coordinator has helped you make progress on your education and employment goals.

EEI5. Your regional coordinator has increased your confidence in your ability to work in the civilian workplace.

EEI6. Overall, you are satisfied with the services you've received from the Education and Employment Initiative.

Operation Warfighter

[Programmer: If PR1d = yes, ask OW1-5. If PR1d = no/not applicable/DK/REF, skip OW1-5.]

Please tell me whether you agree or disagree with each of the following statements about the Operation Warfighter program. For each statement I read, please say "agree," "disagree," or "not applicable."

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

OW1. The Operation Warfighter program has connected you with local internships that will help you reach your career goals.

OW2. The Operation Warfighter program has helped your chain of command and internship supervisor coordinate to schedule your internship.

OW3. The internship is a good match given your background and career goals (INTERVIEWER: if no internship has been assigned, select “not applicable”).

OW4. The internship has increased your confidence about obtaining civilian employment after the internship.

OW5. Overall, you are satisfied with the services you’ve received from Operation Warfighter.

Airman and Family Readiness Centers

[Programmer: If PR1e = yes, ask AFRC1-2. If PR1e = no/not applicable/DK/REF, skip AFRC1-2.]

Please tell me whether you agree or disagree with each of the following statements about Airman and Family Readiness Centers. For each statement I read, please say “agree,” “disagree,” or “not applicable.”

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

AFRC1. Airman and Family Readiness Centers have connected you with helpful resources.

AFRC2. Overall, you are satisfied with the services you’ve received from Airman and Family Readiness Centers.

Transition Assistance Program

[Programmer: If PR1f = yes, ask TAP1-3. If PR1f = no/not applicable/DK/REF, skip TAP1-3.]

Please tell me whether you agree or disagree with each of the following statements about the Transition Assistance Program, or “TAP.” For each statement I read, please say “agree,” “disagree,” or “not applicable.”

[Response options]

1. Agree

0. Disagree

97. Not applicable

98. (VOL) DK

99. (VOL) REF

TAP1. The VA Benefits briefings provided you with helpful information about your benefits.

TAP2. The TAP Employment assistance (such as interview skills training, resume help) provided you with useful help to transition to the civilian workplace.

TAP3. Overall, you are satisfied with the services you've received from TAP.

HEALTH

Now I am going to ask you some questions about your health.

Health-related Quality of Life

HE1. In general, would you say your health is:

[Response options]

Excellent..... 5
Very good..... 4
Good 3
Fair 2
Poor..... 1
(VOL) DK…….. 98
(VOL) REF…… 99

HE2. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health? Please tell me yes or no for each problem I read.

1. Yes
0. No
98. (VOL) DK
99. (VOL) Refused

HE2a.Have you cut down the amount of time you spent on work or other activities?
HE2b.Have you accomplished less than you would like?
HE2c.Were you limited in the kind of work or other activities that you could perform?
HE2d.Have you had difficulty performing the work or other activities, for example, it took extra effort?

HE3. In the past 7 days, how would you rate your pain on average on a scale of 0, no pain, to 10, the worst pain imaginable?

(Response options)

0	1	2	3	4	5	6	7	8	9	10
No pain										Worst pain imaginable

(VOL) DK…….. 98
(VOL) REF…… 99

Medical Conditions

MC1. I am going to read a list of different medical conditions. For each, please tell me whether you have been diagnosed by a health care professional as having the condition.

	Yes (1)	No (0)
1. Traumatic brain injury (TBI) or concussion		
2. Migraine		

3. Tinnitus (ringing in the ears)		
4. Epilepsy		
5. Poor vision/blindness		
6. Any amputated hands, arms, feet, or legs		
7. Paralysis or spinal cord injury		
8. Back pain		
9. Limited motion or other impairment of the knee or ankle		
10. Joint disorders or inflammation (other than arthritis)		
11. Arthritis		
12. Neuritis (inflammation of the nerves)		
13. Cancer (any form, including leukemia, melanoma, etc.)		
14. Fibromyalgia		
15. Post-traumatic stress disorder (PTSD)		
16. Major depressive disorder (Depression, clinical depression)		
17. Substance use disorder		
18. Personality disorder		
19. Anxiety disorder		
20. Other (please specify): **[SMALL TEXT BOX]**		

98. (VOL) DK
99. (VOL) REF

MC1a. Of the conditions you just mentioned, which one interferes most with your daily activities (such as taking care of yourself, working, doing errands, and chores)?

[Programmer: Show list of conditions endorsed in MC1 and allow only one response. If ALL MC1_1-MC1_20 = no/DK/REF, skip MC1a.]

HEALTH CARE UTILIZATION AND BARRIERS

Physical Conditions and Injuries

Health Care Utilization for Physical Conditions and Injuries

The next few questions are about medical care, tests, or treatment you've received for physical conditions or injuries.

HC1. In the last 12 months, how many visits did you make to any medical providers like a family doctor, general internist, nurse or nurse practitioner, or specialists to get medical care, tests, or treatment for your **physical conditions or injuries**? Please do not include visits for mental health care, tests, or treatments; dental care, tests, or treatments; prescription medicines; inpatient hospitalizations; or visits to a hospital emergency room or urgent care facility.

[Response options]

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5 to 9
6. 10 or more times
98. (VOL) DK
99. (VOL) REF

[Programmer: If the respondent answers >=1 visit to HC1, ask HC1a; if HC1a = 0/DK/REF, skip to HC2.]

HC1a. Where did you receive medical care, tests, or treatment for your physical conditions or injuries? [READ LIST, SELECT ALL THAT APPLY]

1. Military treatment facility
2. VA facility
3. Civilian facility
98. (VOL) Don't know
99. (VOL) Refused

Unmet Need/Desire for Medical Care for Physical Conditions and Injuries

HC2. In the last 12 months, was there ever a time when you wanted to get medical care, tests, or treatments for physical conditions or injuries that you or a doctor believed necessary but did not?

1. Yes
0. No
98. (VOL) Don't know
99. (VOL) Refused

[Programmer: If HC2=yes (1), ask HC3 question about barriers to care; otherwise skip to PTSDCT1.]

Barriers to Health Care for Physical Conditions and Injuries

HC3. Thinking back to the time or times when you wanted to get medical care, tests, or treatments for physical conditions or injuries but did not, which of the following concerns kept you from getting care? Please tell me yes or no for each I read.

"Did you not get care because of…"

98. (VOL) Don't know
99. (VOL) Refused

HC3a. Not knowing where to get help or whom to see
HC3b. Difficulty arranging transportation to treatment
HC3c. Difficulty getting childcare or time off of work
HC3d. Difficulty scheduling an appointment
HC3e. Was refused services
HC3f. Care, tests, or treatments took too long
HC3g. Believing that the care, tests, or treatments available to you are not very good
HC3h. Care, tests, or treatments were too unpleasant to undergo (such as side effects)
HC3i. Believing you can handle the problem on your own
HC3j. Other reason not mentioned

Mental Health

The next set of questions asks about mental health. As a reminder, we will keep all of your responses confidential.

Current Mental Health Symptoms

Current PTSD Screener (PC-PTSD)

PTSD1. In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the **past month**, you:

[Response options for PTSD1a-d]

1. Yes
0. No
98. (Vol.) DK
99. (Vol.) REF

PTSD1a. Have had nightmares about it or thought about it when you did not want to?

PTSD1b. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?

PTSD1c. Were constantly on guard, watchful, or easily startled?

PTSD1d. Felt numb or detached from others, activities or your surroundings?

[Programmer: IF ALL PTSD1a-PTSD1d=no/DK/REF, SKIP TO MDD1.]

PTSD2. Were these symptoms due to stressful experiences that occurred during a military deployment or other operation or training?

1. Yes
2. No
98. (VOL) DK
99. (VOL) Refused

Current Depressive Symptoms (Patient Health Questionnaire-8)

Now I'd like to ask you some questions about your mood, and problems that may have bothered you over the **last 2 weeks**. Please answer just for the last 2 weeks, even if that period has not been usual for you.

[Response options for MDD1 and MDD2]

0. Not at all,
1. Several days,
2. More than half the days, or
3. Nearly every day
98. (VOL) DK
99. (VOL) REF

MDD1. In the **last 2 weeks** how often have you been bothered by having little interest or pleasure in doing things?

MDD2. In the **last 2 weeks** how often have you been bothered by feeling down, depressed, or hopeless?

Mental Health Treatment History

MH1. In the last 12 months, have you received any of the following types of treatment for stress, emotional, alcohol, drug, or family problems? For each type of treatment I read, please tell me yes or no.

[Response options]
1. Yes
0. No
98. (VOL) DK
99. (VOL) REF

MH1a. Medication prescribed by a health care provider.
MH1b. Some type of counseling or talk therapy provided by a mental health specialist such as a psychiatrist, psychologist, counselor, or social worker;
MH1c. Some other treatment

[Programmer: After each yes at MH1, ask MH2.]

MH2. Where did you receive treatment for stress, emotional, alcohol, drug, or family problems? Please select all that apply.

Did you receive treatment at a… [READ LIST, SELECT ALL THAT APPLY]

1. Military treatment facility
2. VA facility
3. Civilian facility
98. (VOL) Don't know
99. (VOL) Refused

Unmet Need/Desire for Mental Health Treatment

MH3. In the last 12 months, was there ever a time when you wanted to get professional help for stress, emotional, alcohol, drug, or family problems but did not?

1. Yes
0. No
98. (VOL) Don't know
99. (VOL) Refused

[Programmer: If respondent answers 1 ("yes") to MH3, go to MH4; otherwise skip to MH5.]

Barriers to Mental Health Treatment

MH4. (Use different introductory question for each of the following 2 categories):

Thinking back to the time or times when you wanted to get professional help for stress, emotional, alcohol, drug, or family problems but did not, which of the following concerns kept you from getting professional help? Please tell me yes or no for each I read.

[Response options]

1. Yes
0. No
98. (VOL) Don't know
99. (VOL) Refused

[Programmer: IF MH3=1: Did you not get help because of…]
[Programmer: IF MH3=0: Would you not seek help because of…]

mh4a. Not knowing where to get help or whom to see
mh4b. Difficulty getting childcare or time off of work
mh4c. Difficulty scheduling an appointment
mh4d. Believing that the mental health treatments available to you are not very good
mh4e. Medications having too many side-effects
mh4f. Concerns about your treatment not being kept confidential
mh4g. Concerns that your friends, family, or coworkers would respect you less
mh4h. Concerns about harm being done to your career
mh4i. Concerns about being denied a security clearance in the future
mh4j. Concerns that your commander or supervisor might respect you less
mh4k. Believing you can handle the problem on your own
mh4l. Other reason not mentioned, specify: _____

Mental Health Treatment Preferences

MH5. If you wanted to get mental health care and could go to any type of provider free of charge, would you choose to go to a: [Read list, record only one response.]

1. Military treatment facility
2. VA facility
3. Civilian facility
98. (VOL) don't know
99. (VOL) refused

MH6. If you wanted to get mental health care and could afford any of the following types of treatment, which one would you choose? [Read list, record only one response]

1. Medication prescribed by a health care provider
2. Some type of counseling or talk therapy provided by a mental health specialist such as a psychiatrist, psychologist, counselor, or social worker
3. Both medication and counseling or talk therapy
98. (VOL) DK
99. (VOL) REF

Coordination of Care from Multiple Health Care Providers

Now I am going to ask you some questions about care coordination.

CC1. In the last 12 months, from how many doctors or other health care providers have you received care, in total? Please include your personal doctor, mental health care providers, dental care providers, and any other doctors or health care providers that provided care to you.

[INTERVIEWER, IF NEEDED. Definition of a health care provider: "Under federal regulations, a health care provider is defined as: a doctor of medicine or osteopathy, podiatrist, dentist, chiropractor, clinical psychologist, optometrist, nurse practitioner, nurse-midwife, or a clinical social worker who is authorized to practice by the State and performing within the scope of their practice as defined by State law, or a Christian Science practitioner."]

0. 0
1. 1
2. 2-5
3. 6-9
4. 10 or more
98. (VOL) DK
99. (VOL) REF

[Programmer: If CC1 = 0/DK/REF, skip to PI1. If CC1 = 1, skip to CC2. If CC1 = 2, 3, or 4, go to CC1.1.]

CC1.1 Was a lead coordinator assigned?

1. Yes
0. No
98. (VOL) DK

99. (VOL) REF

CC2. In the last 12 months, how often did your doctors or other health providers seem informed and up-to-date about the care you had received from other doctors or health providers?

1. Never
2. Sometimes
3. Usually
4. Always
98. (VOL) DK
99. (VOL) REF

[Programmer: If CC1 = 0/1/DK/REF, skip to PI1. Otherwise ask CC3.]

CC3. In the last 12 months, who helped to coordinate your care? Please answer yes or no for each that I read.

[Programmer: Response option 11 ("no one") should be offered only if the respondent says "no" to options 1-10 (do not allow for both 11 and any of 1-10 to be endorsed).]

1. Someone from your health plan
2. Clinical case or care manager at the military treatment facility (MTF)
3. Clinical case or care manager at the VA
4. Doctors or other health providers
5. Someone else from your doctor's office or clinic
6. A friend or family member
7. You
8. A Federal Recovery Care Coordinator
9. An Air Force Recovery Care Coordinator
10. Someone from another organization
11. No one
98. (VOL) DK
99. (VOL) REF

CC4. Overall how satisfied are you with the coordination of your care in the last 12 months?

1. Very dissatisfied
2. Dissatisfied
3. Neither dissatisfied nor satisfied
4. Satisfied
5. Very satisfied
98. (VOL) DK
99. (VOL) REF

Patient Involvement in Decisions about Treatment

PI1. In the last 12 months, how often were you involved as much as you wanted in decisions about your health care, including physical and mental health care?

1. Never
2. Sometimes
3. Usually
4. Always
5. (VOL) Not applicable
98. (Vol.) DK
99. (Vol.) REF

FAMILY RELATIONSHIPS AND SOCIAL SUPPORT

The next questions are about your relationships and social support.

Relationship Status

RS1. Are you…

1. Married and living together
2. Married and living separately by choice
3. Married and living separately due to separate military assignments
4. Living together as married (but not married)
5. Dating exclusively
6. No current exclusive relationship

98. (VOL) DK
99. (VOL) REF

Social Support

SS1. Who most often helps you deal with problems that come up? Please stop me when I read the option that best describes this person's relationship to you.

[INTERVIEWER: If respondent answers more than one person, ask them to pick who helps them the MOST]

1. Spouse or domestic partner **[Programmer: If RS1 equals 5 (dating exclusively) or 6 (no current exclusive relationship), skip this option.]**
2. Boyfriend or girlfriend **[Programmer: If RS1 equals 1-3 skip this option.]**
3. Child
4. Parent/parent-in-law
5. Brother/brother-in-law and/or sister/sister-in-law
6. Other relative
7. A friend
8. No one
98. (VOL) DK
99. (VOL) REF

[Programmer: If SS1=8 (no one), ask SS1_1. For all other responses to SS1, skip to SS2.]

SS1_1. Which of the following best describes why you answered that you have "no one" who helps you deal with problems that come up?

1. You don't have anyone to help
2. You ask for help but do not get it
3. You don't ask for help because you can take care of my problems on your own
98. (VOL) DK
99. (VOL) REF

SS2. With whom do you have the relationship that provides you with the greatest sense of emotional security and well-being? Please stop me when I read the option that best describes this person's relationship to you.

[INTERVIEWER: If respondent answers more than one person, ask them to pick who provides them with the GREATEST sense of security.]

1. Spouse or domestic partner **[Programmer: If RS1 = 5 (dating exclusively) or 6 (no current exclusive relationship), skip this option.]**
2. Boyfriend or girlfriend **[Programmer: If RS1 = 1, 2, or 3, skip this option.]**
3. Child
4. Parent/parent-in-law
5. Brother/brother-in-law and/or sister/sister-in-law
6. Other relative
7. A friend
8. No one
98. (VOL) DK
99. (VOL) REF

SS2_1. Is the (insert relationship type indicated in SS1 and SS2) who provides you with the greatest sense of emotional security and well-being the same person who most often helps you with problems that come up?

1. Yes
0. No
98. (VOL) DK
99. (VOL) REF

SS3. Would you like help connecting with others on a personal level?

1. Yes
0. No
98. (VOL) DK
99. (VOL) REF

SS4. In general, how would you rate your satisfaction with your social activities and relationships?

Excellent..... 5
Very good..... 4
Good 3
Fair 2

Poor..... 1
(VOL) DK…….. 98
(VOL) REF…… 99

Integration of Family Members and Friends into Comprehensive Recovery Plan Development and Implementation

Please tell me whether you agree or disagree with each of the following statements about how your family members and friends help with your recovery. For each statement I read, please say “agree” or “disagree.”

[Response options for FF1-FF4]

1. Agree
0. Disagree
97. Not applicable
98. (VOL) DK
99. (VOL) REF

FF1. Family members or friends support you in getting treatment for your physical conditions and injuries by, for example, reminding you to attend appointments, take medication, or do activities or assignments given by your health provider.

FF2. Family members or friends support you in getting treatment for stress, emotional, alcohol, drug, or family problems by, for example, reminding you to attend appointments, take medication, or do activities or assignments given by your health provider.

FF3. Family members or friends encourage you to be socially active by, for example, seeking out new friends and/or ways to be involved in your community or spending time with people you already know and like.

FF4. Family members and friends support you in your efforts to find or keep a job by, for example, helping you keep going when you feel discouraged about looking for a new

or different type of job or introducing you to other people who might be able to give you a job.

WORK, EDUCATION, AND INCOME

The next few questions are about work and education.

Employment Status

ES1. What is your current work status? Are you . . .

1. Working full-time
2. Working part-time
3. Unemployed and looking for work
4. Unemployed and not looking for work
5. Disabled and not working
6. Full-time student (and not employed)
7. Part-time student (and not employed)
8. Homemaker
9. Retired from working

98. (VOL) DK
99. (VOL) REF

Education

ED1. What is the highest level of education that you have completed?

[Programmer: Allow only one response.]

1. Less than high school
2. High school diploma (or GED)
3. 2-year college degree (AA)
4. 4-year college degree or higher (BA, BS, etc.)

98. (Vol.) DK
99. (Vol.) REF

[Programmer: Ask ED2 of all respondents whose answer to ES1 is working full-time (1), working part-time (2), unemployed and looking for work (3), unemployed and not looking for work (4), disabled and not working (5), homemaker (8), retired from working (9), DK (98), or REF (99). If respondent answers full-time student (6), part-time student (7), DK, or REF, skip to ID1.]

ED2. Are you currently pursuing any college or graduate educational opportunities?

1. Yes, full time
2. Yes, part time
3. No
98. (VOL) Don't know
99. (VOL) Refused

Barriers to Employment

[Programmer: If respondent answered ES1 = 3 "Unemployed and looking for work", ES1=4 "Unemployed and not looking for work", or ES1 = 5 "Disabled and not working", ask BE1 question about barriers to employment. If respondent answered ES1=1 or 2 (employed full-time or part-time), skip to BE2 question about barriers to employment. If respondent answered ES1=9 "Retired from working", skip to ID1 question about income.]

BE1. Which of the following make it difficult for you to obtain employment? Please tell me yes or no for each.

[Programmer: Response options include:]

1. Yes
0. No
98. (VOL) DK
99. (VOL) REF

BE1a. Available jobs don't pay enough
BE1b. Family prefers you stay at home
BE1c. Would lose financial benefits (such as disability benefits)
BE1d. Do not need a job because you receive benefit payments
BE1e. Pursuing an education

BE1f. Not physically capable

BE1g. No one will hire you because of your injury or disability

BE1h. You do not have the tools or knowledge to translate your military skills to the civilian workforce

BE1i. You feel uncomfortable or get anxious when thinking about working in the civilian workplace

BE1j. You lack confidence in yourself and your abilities

BE1k. Due to your long and/or multiple deployments, you feel behind compared to your peer civilian counterparts

[Programmer: If respondent answered ES1=1 or 2 (employed full-time or part-time), ask BE2 question about barriers to employment. Otherwise skip to ID1.]

BE2. Which of the following concerns you about keeping your job or getting another? Please tell me yes or no for each.

[Programmer: Response options include:]

1. Yes
0. No
98. (VOL) DK
99. (VOL) REF

BE2a. Not qualified/lack education

BE2b. Available jobs don't pay enough

BE2c. Do not know about available jobs

BE2d. Not physically capable

BE2e. People will be reluctant to hire you because of your injury or disability

BE2f. You do not have the tools or knowledge to translate your military skills to the civilian workforce

BE2g. You feel uncomfortable or get anxious when thinking about working in the civilian workplace

BE2h. You lack confidence in yourself and your abilities

BE2i. Due to your long and/or multiple deployments, you feel behind compared to your peer civilian counterparts

Income and Disability Compensation

The next few questions asks about your financial situation. As a reminder, all of these questions are confidential.

ID1. What was your household's total annual income from all sources before taxes in 2015? Include money from jobs, social security, retirement income, disability payments, unemployment payments, public assistance, investments and so forth. Please stop me when I read your income category:

1. Less than $10,000
2. 10,000 to less than $20,000
3. 20,000 to less than $30,000
4. 30,000 to less than $40,000
5. 40,000 to less than $50,000
6. 50,000 to less than $75,000
7. 75,000 to less than $100,000
8. $100,000 or more

98. (VOL) DK
99. (VOL) REF

ID2. Including yourself, how many people in your household are supported by your total household income? _____

[Programmer: Response options include numbers ranging from 1 to 15 or more, 98 DK, 99 REF]

DEMOGRAPHICS

And one final question.

Children

CHILD. Altogether, how many children do you have who live with you under the age of 18?

[Programmer: Please program responses ranging from 0-20+ in a drop-down menu, 98 DK, 99 REF.]

TERMINATION SCRIPT

Thank you very much for participating in this study. Before we say goodbye, I'd like to remind you that the Air Force offers programs to help Seriously and Very Seriously Wounded, Ill, and Injured Airmen. These programs include Recovery Care Coordination and the Air Force Wounded Warrior Program. If you'd like to call them, you can get in touch with a representative from the program by calling 1-800-581-9437. Thanks again for participating, and have a great day/evening!

[INTERVIEWER: Repeat phone number as needed. If respondent asks about hours, it is manned during business hours but after business hours the voice mail provides a phone number for an after-hours emergency contact.]

Appendix B. Detailed Measures Information

Health

Health-Related Quality of Life

To assess respondents' health-related quality of life, we used the SF-36 (Ware et al., 1993) subscales of general health and role limitations due to physical health. Respondents self-reported general health on a scale that ranged from 1 (excellent) to 5 (poor). We assessed role limitations due to physical health with four items asking the respondent about the occurrence of four problems with "work or other regular daily activities as a result of your physical health" during the preceding four weeks. We scored both subscales in accordance with the recommendations of Hays, Sherbourne, and Mazel (1993). Subscale scores range from 0 to 100, with higher scores indicating better health-related quality of life. The reliability and validity of the SF-36 have been extensively documented in past research (Brazier et al., 1992; Stansfeld, Roberts, and Foot, 1997; Ware et al., 1993).

In addition, we asked respondents to provide an average rating, on a scale of 0 to 10, of pain experienced over the preceding seven days. This scale was adopted from work conducted by Hays et al. (2009), in which the scale was validated in a nationally representative sample of the U.S. general population.

Medical Conditions

We asked respondents to indicate if they have been diagnosed by a medical professional as having any of 19 predefined medical conditions. We asked respondents who reported having been diagnosed with at least two medical conditions to select the condition that interfered the most with daily activities (e.g., taking care of oneself, working, doing errands and chores). The list of conditions was created from two sources: research conducted by the Department of Veteran's Affairs on the most prevalent service-connected disabilities in 2014 among new recipients (U.S. Department of Veteran Affairs, 2015; ASMARA, 2016) , the most recent year for which data were available at the time of the survey; and AFW2's administrative data on the most-commonly diagnosed conditions in the population of AFW2 enrollees in the fall of 2015, which is when the study team began designing the wave 3 survey.

Health Care Utilization and Barriers

Respondents were asked to indicate the number of times in the preceding 12 months that they had visited a health care provider for physical conditions or injuries. This measure was adapted from a similar item in the 2014 Medical Expenditure Panel Survey (AHRQ, 2014). To assess

barriers to care and unmet needs, we asked respondents to indicate if there had been a time in the past 12 months when they wanted to receive medical care, test, or treatments for a physical condition or injury, but did not. Potential barriers to care were drawn from the RAND Invisible Wounds of War study (Tanielian et al., 2008). The barriers assessed fall into three major categories: logistical barriers (e.g., difficulty scheduling an appointment or finding child care), institutional and cultural barriers (e.g., belief that seeking care would harm respondent's career), and beliefs and preferences for treatment (e.g., belief that treatment would not be effective). We also adapted some items from the 2014 MEPS that addressed barriers to care (e.g., belief that treatments took too long, which was classified as a belief or preference regarding treatment, and refusal of services, which was classified as a logistical barrier).

We also asked respondents to indicate the systems of care in which they had received care for physical conditions or injuries in the preceding 12 months. Respondents were able to select all that applied: military treatment facility, VA facility, or civilian facility.

Posttraumatic Stress Disorder Screening

To screen for current PTSD, we used the Primary Care–PTSD (PC-PTSD) screen (Prins et al., 2003), a four-item instrument. The PC-PTSD begins with a sentence designed to cue respondents to traumatic events ("In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you:") but does not include a list of potentially traumatic events. Rather, it assesses the occurrence of PTSD symptoms that correspond to four factors whose specificity to the construct of PTSD has been demonstrated in factor analyses and that do not appear to be confounded by general psychological distress: re-experiencing, numbing, avoidance, and hyperarousal (Prins et al., 2003). In accordance with guidelines offered by Prins et al. (2003), we classified respondents as screening positive for PTSD if they endorsed at least three of the four items. This cutoff has been shown to have a sensitivity of 0.78, specificity of 0.87, and overall efficiency of 0.85 when evaluating the diagnostic utility of the PC-PTSD relative to a gold standard clinical diagnostic interview in past research conducted on veterans (Prins et al., 2003).

Depression Screening

To screen for depression, we used the PHQ-2 (Kroenke, Spitzer, and Williams, 2003). The PHQ-2 is a two-item screening instrument that assesses the frequency of depressed mood and anhedonia (inability to feel pleasure) over the preceding two weeks. The PHQ-2 is well-validated and widely used as a brief screening measure in civilian settings (Kroenke, Spitzer, and Williams, 2003), and in the VA (Corson, Gerrity, and Dobscha, 2004). For each question, respondents indicate the frequency with which they experienced the symptom over the preceding two weeks on a four-point scale: "not at all" (0) to "nearly every day" (3). We defined a positive screen for current depression as a total score of three or greater (out of a maximum of six), which

has been found to have a sensitivity of 83 percent and a specificity of 92 percent for detecting MDD when compared to a structured clinical interview (Kroenke, Spitzer, and Williams, 2003).

Mental Health Service Utilization and Preferences

We assessed use of any type of mental health services in the past year with a single question: "In the past 12 months have you received any of the following types of treatment for stress, emotional, alcohol, drug, or family problems?" Response options were medication prescribed by a health care provider, some type of counseling or talk therapy provided by a mental health specialist, and some other treatment. We considered a respondent who endorsed any of these response options to have received some sort of mental health treatment in the past year. For every type of treatment the respondent reported having received, we asked the respondent to indicate all of the settings in which he or she had received that type of treatment. Response options were military treatment facility, VA facility, and civilian facility.

We also asked each respondent to indicate his or her preferred type of provider if cost were not an issue: "If you wanted to get mental health care and could go to any type of provider free of charge, would you go to . . ." Response options were mutually exclusive—the respondent could choose only one option: MTF, VA facility, or civilian facility. We also assessed preferences for type of treatment: "If you wanted to get mental health care and could afford any of the following types of treatment, which one of the following treatments would you choose?" The mutually exclusive response options were medication prescribed by a health care provider, some type of counseling or talk therapy provided by a mental health specialist, and both.

Unmet Need for Mental Health Services and Barriers to Care

To assess unmet need for mental health services during the past year, we asked respondents a single question: "In the past 12 months, was there ever a time when you wanted to get professional help for a mental health, stress, family or alcohol problem but did not?" Respondents who answered affirmatively to this question were then asked to indicate which of 12 concerns had kept them from getting help when the respondent needed it. We drew the concerns on the list from previous studies of mental health treatment barriers conducted in military samples (Schell and Marshall, 2008; Vaughan et al., 2011). Original sources of the barriers include the National Comorbidity Survey Replication (e.g., Kessler et al., 2005) and the Hoge et al. (2004) study of barriers to care in the military. The list consists of three broad classes of barriers to care: logistical barriers (e.g., "difficulty scheduling an appointment"), institutional and cultural barriers ("concerns about harm being done to [their] career"), and beliefs and preferences for treatment (e.g., "believing that the mental health treatments available to [them] are not very good").

Care Coordination and Patient Involvement in Treatment Decisions

Our assessment of care coordination covered multiple aspects of care coordination and included questions adapted from the Consumer Assessment of Health Plans Survey (CAHPS) and the Health Care Survey of DoD Beneficiaries. First, we asked respondents to indicate the number of doctors or other health care professionals involved in providing their care over the preceding 12 months. In answering this question, respondents were asked to include "[their] personal doctor, mental health care providers, dental care providers, and any other doctors or health care providers that provided care." Respondents who indicated having received care from at least two health care providers were then asked whether a lead coordinator had been assigned. Next, we asked the respondent to indicate how often their health care providers seemed up-to-date about care received from other health care professionals; response options included "never," "sometimes," "usually," and "always." Respondents were then asked to identify all of the types of professionals and personal contacts that had helped coordinate their care in the past 12 months. For this question, respondents were presented with a predefined list of ten sources of help, which included choices such as "someone from [their] health plan" and "clinical case or care manager at the MTF." Respondents could also choose the 11th response option of "no one." Finally, we asked respondents to rate their overall satisfaction with care coordination in the preceding 12 months on a scale that ranged from 1 (very dissatisfied) to 5 (very satisfied).

To assess patient involvement in treatment decisions, we asked respondents to indicate how often they had been involved in treatment decisions as often as they had wanted in the preceding 12 months. Response options ranged from 1 (never) to 4 (always), or participants could select the response option of "not applicable." Validation studies of the CAHPS suggested the instrument has demonstrated excellent psychometric properties, including reliability (Hays et al.,1999). The Health Care Survey of DoD Beneficiaries has been administered annually since 2004.

Social Functioning

Relationships and Social Support

Respondents were asked to indicate their current relationship status. Response options included married and living together, married and living separately by choice, married and living separately due to separate military assignments, living together as married, dating exclusively, and no current exclusive relationship. An indicator for marital status was created such that individuals were considered married if they endorsed either of the options "married and living together" or "married and living separately due to separate military assignments," and individuals who endorsed any other relationship status were considered not married.[20]

[20] We considered including respondents in the category "married and living separately by choice" in the "married" category of the marital status indicator because they are technically married, at least according to the legal

Respondents were also asked to nominate their primary supporter, i.e., the person "who most often helps you deal with problems that come up." Response options included spouse or domestic partner, boyfriend or girlfriend, child, parent or parent-in-law, brother or brother-in-law or sister or sister-in-law, other relative, friend, or not applicable (doesn't share problems with anyone). Those who responded that no one helps them deal with problems were asked why that was the case. They were able to choose from options which included that they did not have anyone to help them, that they ask for help but do not receive it, and that they do not ask for help because they handle their problems on their own.

Similar to the question about their primary supporter, respondents were asked with whom they have a relationship which provides the greatest sense of emotional security and well-being. They could respond that it was the same person from the previous question or select a new person from the same list of individuals. Next, they were asked whether or not they would like help connecting with others on a personal level. The final question concerning relationships and social support asked respondents to rate their satisfaction with their relationships and social activities. Response options included excellent, very good, good, fair, or poor.

Integration of Family Members and Friends into Recovery Process

Respondents were asked four questions on the topic of how integrated their family and friends were in their recovery process. For each question they were asked to respond whether or not they agreed, disagreed, or felt the question was not applicable. The first question asked about familial and friend support with respect to getting treatment for physical conditions and injuries. The second question was focused on support in terms of getting treatment for stress, emotional, alcohol, drug, or family problems. Both questions gave the examples of reminding the respondent to attend appointments, take medication, or do activities recommended by the health provider. The third question asked about their encouragement of the respondent to be socially active, for instance by seeking out new friends or community involvement. The final question asked if they agreed that their family and friends supported them in their efforts to find or keep a job. Examples of how this could be done include helping the respondent stay motivated when feeling discouraged or by introducing them to individuals who might be able to offer them a job.

Work, Education, and Income

Employment Status

Respondents were asked to select their current employment status from a list that included the following options: "working full-time," "working part time," "unemployed and looking for

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definition. However, because these individuals are separated by choice, we believed that they may be categorically different from individuals who are married and not making motions to end their marriage. Thus, we opted to exclude them from the "married" category.

work," "disabled and not working," "full time student, and not employed," "part time student, and not employed," "homemaker," "retired," and "not employed, not looking for work." We defined unemployment using the Bureau of Labor Statistics U-3 measure, where unemployment is calculated as the percentage of people who are unemployed and looking for work divided by the workforce, which includes everyone who is working full time, working part time, or unemployed and looking for work.

Education

Respondents were asked the highest level of education they had completed. The potential options included less than high school, a high school diploma or equivalent, an associate's degree, or a bachelor's degree (or higher). Individuals who responded to the question about their employment with a response that was neither being a full or part-time student were asked if they were currently pursuing any college or graduate educational opportunities. They could respond yes, either full or part-time, or no.

Barriers to Employment

Respondents whose current employment status was "disabled and not working," "unemployed and looking for work," or "unemployed and not looking for work" were asked to indicate which of 11 potential barriers to employment "make it difficult for you to obtain employment." Barriers assessed in our research were drawn from another survey of wounded warriors, the data from which are not publicly releasable. Barriers fell roughly into four major categories: disability-related barriers (e.g., "no one will hire me because of my injury or disability"); concerns about qualifications, skills, or abilities needed for the civilian labor market (e.g., "I lack confidence in myself and my abilities"); disincentives to obtain employment (e.g., "would lose financial benefits"); and other (e.g., "pursuing an education"). Respondents who were employed full- or part-time were also asked to indicate which of nine concerns they had about keeping their job or finding another one. The concerns assessed were very similar across these subgroups of respondents.

Income and Disability Compensation

Respondents were asked to report their household's total annual income. This number represents income from all sources before taxes in 2015, including jobs, Social Security payments, retirement income, disability payments, unemployment payments, public assistance, investments, etc. Response options included eight ranges of income presented in $10,000 increments (e.g., "less than $10,000," "$40,000 to less than $50,000") with a maximum of "$100,000 or more." Respondents were also asked how many people in their household are supported by this income. We used information from both of these questions to create an indicator of financial strain, where respondents were categorized as falling above or below the

federal poverty guidelines that HHS set for 2015 (Office of the Assistant Secretary for Planning and Evaluation, 2015).

Family Demographics

Most information on respondents' sociodemographic characteristics was available in AFW2 administrative data, and therefore we didn't ask many questions about this on the survey. However, we did ask respondents to report the number of children under the age of 18 who live with them because we weren't sure if this information would be available from administrative data.

Program Utilization and Perceptions

Air Force Wounded Warrior Program

The survey items concerning the usage of programs combine AFW2 and AFRC because airmen were likely to view them as one "source" of help within the care continuum (that is, we were advised airmen were unlikely to distinguish between them meaningfully). We included all services provided by each program and asked about the complete set of services, based on measurement of the (originally) separate program questions from prior waves of the survey. Respondents were initially asked whether they had received assistance from a nonmedical case manager from AFW2. Respondents who answered this question affirmatively were then asked which types of services they had received from AFW2. The types of services assessed were referrals to other services, help or advice filling out paperwork, advice for life matters, advice for dealing with red tape (e.g., who to call), whether AFW2 had someone contact the respondent to give him or her assistance, regular supportive calls, support for a concern, assistance with goal-setting and planning for the future through the development of a Comprehensive Recovery Plan (CRP) or Recovery Care Plan (RCP), follow-up after the development of a CRP or RCP to help the respondent stay on track to meet his or her goals, help adjusting to or coping with physical or mental health conditions developed during or after the respondent's military service, and some other help or service.

If airmen indicated that they had a CRP or RCP, they were asked to indicate which life areas were covered as part of that goal-setting process. The life areas asked about included physical health problems; stress, emotional, alcohol, drug, or family problems; personal relationships; work or education; and finances.

If respondents had received services from nonmedical case managers, they were also asked to indicate their agreement or disagreement with several statements designed to assess perceptions of the services that AFW2 provides. The statements included: (1) the case managers give me good information on what resources are available to me during my recovery process, (2) the case managers helped me believe that I could improve my life, (3) the services available through Air

Force Wounded Warrior case managers cannot really help me deal with any issues caused during my Air Force service, (4) Air Force Wounded Warrior case managers are easy to get in touch with if I wanted to contact them, (5) I feel that the Air Force Wounded Warrior case managers are not able to give me the support I need, (6) I feel the services provided by the Air Force Wounded Warrior program help me deal with reintegration issues, (7) the case managers can help me to achieve my personal goals, (8) the case managers can provide useful information on my medical conditions and recovery process, (9) I would recommend the Air Force Wounded Warrior program to a friend, (10) I am likely to continue to use Air Force Wounded Warrior Program support, and (11) overall, I am satisfied with the services provided by the Air Force Wounded Warrior program.

Respondents were then asked how often in the past 90 days they had been contacted by the case manager. Response options were multiple times a week, once a week, once a month, once every few months, and I had not been contacted by an Air Force Wounded Warrior case manager in the past 90 days. Respondents were also asked if this amount of contact was too much, about the right amount, or not often enough.

Other Programs

Respondents were also asked if they had received services from some of the more recently developed programs available to recovering airmen: RAMP, MASP, E2I, OWF, A&FRCs, and TAP. For each program from which respondents reported having received services, they were asked to indicate whether they agreed or disagreed with several statements designed to assess their perceptions of the programs.

Respondents who reported having received services from RAMP were asked to indicate their agreement or disagreement with five statements about the program: (1) my mentor was well-matched to me based on similarity in our personal experiences, (2) my mentor has asked me what I want or need help with, (3) my mentor has helped me adjust to or cope with physical or mental health conditions that I developed during or after my military service, (4) my mentor has provided assistance that I wouldn't otherwise get from other staff (e.g., medical staff, case managers, other nonmedical staff) who have assisted in my recovery, and (5) overall, I am satisfied with the assistance I've received from my mentor. If respondents reported having received services from MASP, they were asked to indicate whether they agreed or disagreed with five statements: (1) the Military Adaptive Sports Program has shown me new opportunities for growth, (2) the Military Adaptive Sports Program has provided stress relief, (3) the Military Adaptive Sports Program has provided opportunities to spend time with other airmen who are in a similar situation, (4) the Military Adaptive Sports Program has helped with my rehabilitation, and (5) overall, I am satisfied with the services I've received from the Military Adaptive Sports Program.

Respondents who reported having received services from E2I were asked to indicate whether they agreed or disagreed with the following statements: (1) my regional coordinator has provided

good information to meet my needs, (2) my regional coordinator has helped me relate my military skills to the civilian job market, (3) my regional coordinator has connected me with good local educational and employment opportunities, (4) my regional coordinator has helped me make progress on my education and employment goals, (5) my regional coordinator has increased my confidence in my ability to work in the civilian workplace, and (6) overall, I am satisfied with the services I've received from the Education and Employment Initiative.

Respondents who reported having received services from OWF were asked to indicate whether they agreed or disagreed with the following statements: (1) the Operation Warfighter program has connected me with local internships that will help me reach my career goals, (2) the Operation Warfighter program has helped my chain of command and internship supervisor coordinate to schedule my internship, (3) the internship is a good match given my background and career goals (if no internship has been assigned, select "not applicable"), (4) the internship has increased my confidence about obtaining civilian employment after the internship, and (5) overall, I am satisfied with the services I've received from Operation Warfighter.

Respondents who reported having received services from A&FRC were asked to indicate whether they agreed or disagreed with two statements: (1) Airman and Family Readiness Centers have connected me with helpful resources and (2) overall, I am satisfied with the services I've received from Airman and Family Readiness Centers.

Respondents who reported having received services from TAP were asked to indicate whether they agreed or disagreed with three statements: (1) the VA Benefits briefings provided me with helpful information about my benefits, (2) the TAP Employment assistance (e.g., interview skills training, resume help) provided me with useful help to transition to the civilian workplace, and (3) overall, I am satisfied with the services I've received from TAP.

Appendix C. Assessment of Nonresponse Bias

Table C.1. Comparison of Medically Retired and Active-Duty Airmen Served by the Air Force Wounded Warrior Program and Survey Completers: Component, Specialty, Service, and Personal Data

	Population (*N* = 713)	Survey Completers (*N* = 270)		
			95% CI	
Characteristic	**Percentage**	**Percentage**	**LL**	**UL**
Component				
Active	86.8	81.1	76.4	85.8
Air Force Reserve	4.1	6.3	3.4	9.2
Air National Guard	9.1	12.6	8.6	16.6
Air Force Specialty Code				
1	18.1	16.3	11.9	20.7
2	26.5	26.3	21.1	31.6
3	33.9	32.2	26.7	37.8
4–9	20.6	23.7	18.6	28.8
Enlisted	86.8	82.2	77.7	86.8
Number of deployments				
0	28.3	27.0	21.7	32.3
1	22.7	21.9	16.9	26.8
2	18.0	21.5	16.6	26.4
3 or more	31.0	29.6	24.2	35.1
Operation supported by most recent deployment[a]				
OEF	63.4	66.5	59.9	73.1
OIF	11.7	12.7	8.0	17.3
Other	24.9	20.8	15.1	26.5

Characteristic	Population (*N* = 713)	Survey Completers (*N* = 270)		
			95% CI	
	Percentage	Percentage	LL	UL
Retired	58.4	55.6	49.6	61.5
Combat-injured	11.6	13.3	9.3	17.4
Recovery phase: Stabilization and resolution (vs. reintegration and transition)	73.1	71.9	66.5	77.2
Male	70.0	71.1	65.7	76.5
Race or ethnicity				
White	63.8	61.1	55.3	66.9
Hispanic	12.5	14.1	9.9	18.2
Black	13.0	13.7	9.6	17.8
Other	9.8	9.6	6.1	13.2
College degree or higher	22.7	24.8	19.7	30.0
Married	59.6	56.7	50.8	62.6

NOTE: Point estimates for the survey completers are unweighted. Weighted point estimates for the survey completers can be found in Tables 3.2, 3.3, and 3.4 of Chapter 3.
[a] The denominator for these percentages includes only airmen who deployed at least once (population: *N* = 511; survey completers: *N* = 197).

Table C.2. Comparison of Medically Retired and Active Duty Airmen Served by the Air Force Wounded Warrior Program and Survey Completers: Deployment, Years of Service, Years Since Separation, Months Enrolled in AFW2 Program, and Age

Characteristic	Population (*N* = 713)		Survey Completers (*N* = 270)			
					95% CI	
	M	SD	*M*	SD	LL	UL
Length of most recent deployment, in months[a]	4.71	3.78	4.83	3.64	4.32	5.34
Years since return from most recent deployment[a]	4.59	2.66	4.80	2.59	4.43	5.16
Total years of military service	11.35	6.46	12.26	6.71	11.46	13.06
Months since most recent Air Force separation[b]	3.30	9.89	3.23	5.80	2.29	4.17
Months enrolled in AFW2 program	10.48	12.13	11.68	13.26	10.09	13.27
Age, in years	33.04	7.77	34.68	8.56	33.65	35.70

NOTE: Point estimates for the survey completers are unweighted. Weighted point estimates for the survey completers can be found in Tables 3.2, 3.3, and 3.4 of Chapter 3.
[a] We computed descriptive statistics on these variables only for the subset of respondents who had deployed at least once (population: *N* = 511; survey completers: *N* = 197).
[b] We computed descriptive statistics for this variable only for the subset of respondents who were separated prior to July 26, 2016, one month before the date that administrative data were extracted for this analysis (population: *N* = 416; survey completers: *N* = 150).

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