

THE UNITED STATES ARMY MEDICAL DEPARTMENT JOURNAL

CANINE-ASSISTED THERAPY IN MILITARY MEDICINE

April - June 2012

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Perspectives

COMMANDER'S INTRODUCTION

MG David A. Rubenstein

Humans have domesticated animals for assistance and companionship since before the beginning of recorded history. Beasts of burden permitted the development of civilization by breaking land for agriculture with plows, and carrying crops, products, and people in larger quantities and over longer distances than human backs and feet could ever achieve. The longest recognized domesticated animal, the canine, provided humans with assistance in hunting and security, as well as companionship, throughout history, and continues to serve in those and other capacities today.

Everyone is, of course, familiar with the “police dog,” a fixture of law enforcement agencies for most of the last century. Police have also used dogs for tracking offenders and finding victims and lost individuals for many decades. Less well-known, but with a legacy of use that precedes that of law enforcement, is the military working dog, perhaps first widely known to the public as the K-9 Corps starting in World War II. The modern military working dog is used in many capacities, and is now recognized as a very important component of military capability for the operational environment that challenges us today.

Historically speaking, only relatively recently have the benefits that canines offer to human health and well-being been recognized, formally examined, and applied. Service dogs assisting the blind have been common for several decades, and the use of dogs to assist those with other physical handicaps, for example, the deaf and those with ambulatory limitations, has expanded rapidly as organizations training and supplying such dogs have multiplied. The military healthcare system, as well as that of the Veterans Administration, have also used canines for such purposes as Wounded Warriors are reintegrated into the civilian world. However, the formal use of dogs by military medicine as part of therapy during recovery from both physical and psychological injuries is an even more recent application.

This issue of the *AMEDD Journal* focuses on that expanding role of dogs in the military healthcare system.

COL Bobbi Amaker and COL (Ret) Cam Ritchie have assembled a collection of articles that explore the recognition and acceptance of the value of therapy dogs by both military and civilian healthcare professionals. The articles examine the various capacities in which dogs work among patients in medical facilities. There are also detailed discussions of the fairly recent initiative of deploying specially trained dogs overseas with combat and operational stress control teams to assist in their vitally important work in the mitigation of stress and anxiety among deployed personnel. Interestingly, as described in one article, this role of canine therapy has been applied repeatedly to disasters and tragic events in the United States, beginning with September 11, 2001, to address the confusion, stress, and anxiety of both victims and rescue/recovery workers in dealing with the feelings of futility, frustration, and loss.

Many readers who have pets or other involvement with animals in their lives will probably not be particularly surprised at the descriptions of human reactions to the presence of the dogs depicted in these articles. However, all readers should find the extent of the situations and conditions to which dogs are successfully lending assistance to be intriguing, and perhaps a bit surprising. Although attempts to systematically quantify and scientifically evaluate the results of animal-assisted therapy have been and will continue to be made, for now the anecdotal evidence of its overwhelmingly positive impact is not only encouraging, but also substantial enough to support its continuation.

A FAREWELL NOTE

As I end my tour commanding the Army Medical Department Center and School, it is an honor to highlight my more than 2,700 teammates who live our mission every day: to envision, design, and train a premier military medical force for decisive action in support of our Nation. Best wishes to each of them, and to you, for every future success in ensuring the health of present and past warriors and their families.

On The Cover

Therapy dog Zeke during deployment with the 212th Medical Detachment COSC Team in Iraq (see page 49).

EDITORS' PERSPECTIVE

COL (Ret) Elspeth Ritchie and COL Robinette Amaker set the stage for this issue of the *AMEDD Journal* with their overview of the beginnings of canine-assisted therapy within Army medicine. They chronicle the “who, where, and when” that marked the evolving understanding and acceptance of this nontraditional augmentation to existing therapies for both physical and psychological injuries.

As the use of service and therapy dogs gained momentum among civilian-sector medical practices and facilities, it began to gain the attention of a number of military healthcare practitioners, and consequently appeared in military medical facilities as some practitioners took the initiative to examine its value firsthand. Their observations were communicated to others, and interest in the use of service and therapy animals became more widespread at military locations. However, as with any “freelance” activity emerging at various points throughout a formal system, eventually the disparate approaches to the use of animals in military medical facilities reached a point from which they could not continue disorganized and unregulated. LCDR Kathleen Watkins describes how the Army took the initiative to establish policies and standards across Army medicine, and became the lead agency to formalize service and therapy animal use throughout all military medical activities, including deployed locations. Of note is the fact that the first formal step in this effort occurred relatively recently, when representatives from nongovernment animal-assisted practices organizations met with representatives from all military services in December 2009. This summit was the first step to establish the framework for development of policies and guidelines to govern use of animals in medical facilities throughout the Department of Defense. The rapidity with which the standards and guidelines have emerged, and the enthusiasm with which the initiatives have been received can only reflect the recognition of the value of animal-assisted practices, from both therapeutic and cost-effect perspectives.

Regulating policies and protocols which standardize any practice or activity must be specific and unambiguous, which means, first and foremost, that clear definitions must exist for all terminology and concepts. Obviously this applies to the use of animals in medical interventions in military facilities. LTC James Mills and MAJ Arthur Yeager present a well-written, thoroughly researched explanation of the categories and terminology that are now used to describe animal-assisted activities in medical settings, both civilian and military. Interestingly, a federal law, the Americans with Disabilities Act,

led the way with incorporation of definitions of service animals. Some state statutes address therapy and activity animals, but such definitions are not consistent and applicable nationwide. Following the overview of the regulatory environment, the article clearly outlines the new Army-wide policy, just published in January 2012. This article should be read as a foundation for understanding the various categories and conditions that are involved in the use of service and therapy animals.

COL Perry Chumley's article reveals that there have been occasions of US military use of animal-assisted therapy since World War I, but those were limited to specific locations and situations. However, the Army Veterinary Corps watched the civilian sector's efforts, beginning in the 1960s, to investigate individual experiences related to animals involved in assisting human health conditions. Later, Army veterinarians became the DoD's lead elements in exploring the human-animal bond to determine what beneficial aspects may be useful within the Army medical system. Their interest and efforts provided a foundation within the Army on which the current service and therapy animal efforts, described in later articles, are based.

Jan Shubert has provided a clearly presented, extensively researched article that carefully examines the various aspects of animal-assistance developments, organizations, applications, and legislation in the United States. She presents a wealth of interesting and valuable information, and the extent of the research and writings represented by the numerous reference citations is indeed impressive. This article is an excellent overview of the current situation across US society as a whole with regard to attitudes, research, progress, and problem areas in efforts to use animal-assistance for the benefit of impaired human beings.

Dr Janet Knisely, Dr Sandra Barker, and Dr Randolph Barker conducted an extensive, detailed literature review to examine the current research findings and opinions as to the benefits of canine-assisted therapy in the civilian medical environment. Their investigation looked specifically at literature examining hospitalized adult patients with medical problems and psychiatric disorders, and residents of nursing homes and long-term care facilities. Their findings are summarized across several categories of patient care, treatment regimens, clinical situations, and quality of life conditions. The article provides a fascinating and informative look at some of the considerable efforts attempting to quantify and measure the benefits of using animal-assistance in human medical therapies. Of interest is the authors' conclusions that the results/outcomes of such animal use in military medical

facilities has not been scientifically evaluated, a theme that appears in several of the articles in this issue.

Recognizing the dearth of such research with injured or ill subject members, CPT Christine Beck and her colleagues designed and conducted a study to investigate the effects of animal-assistance in an occupational therapy life skills program of the Warrior Transition Brigade at the (then) Brooke Army Medical Center. Their excellent and interesting article reflects a careful, analytic approach to examine factors that are exceedingly difficult to quantify, and therefore reliably measure. The results indicate similarities with such research performed in the private sector. Although, as documented in the article, the research project had some limitations, the significance of the study is reflected in the statement, "...it is important to note that it is the first research on the use of [animal-assisted therapy] in a garrison environment with wounded service members." Their study is now the foundation upon which future research can build, hopefully sooner rather than later.

As illustrated by William Krol's article, good ideas are very often the result of good observation and sound logic. Therapists noticed that a dog trained to assist in physical therapy for Wounded Warriors also became a source of emotional support for those with whom he had contact. Their response to the dog was the initiative for therapists and behavioral health caregivers to seek specially trained dogs for use in theater to assist the combat and operational stress control (COSC) teams in their efforts among deployed personnel. Mr Krol describes the chronology and events that followed, resulting in the deployment of support dogs to both Iraq and Afghanistan. His excellent article is an encouraging look at the dedication and cooperative spirit of the people and organizations, both civilian and government, who quickly came together to develop a program dedicated to the assistance and support of our deployed Warriors. Further, those dogs return and continue their work to benefit Warriors requiring therapy, whether physical or behavioral, in military medical facilities or transition units.

The deployment of therapy dogs with COSC teams is described in two articles written from the perspective of those who employed them in theater, occupational therapists who had been trained as their handlers. In the first article, MAJ Lorie Fike and her coauthors describe the learning curve; the considerations, concerns, difficulties, and requirements (some anticipated, others not) that were encountered during the first deployment of therapy dogs directly into the combat theater. The handlers, teams, and other units made it work, especially as the presence of the dogs became increasingly recognized and appreciated by

deployed personnel. As with any first evolution, lessons-learned are extremely important, and this article is a superb documentation of such lessons that will be invaluable to those who deploy with COSC dogs in the future.

CPT Brian Gregg's article is a first person account of his personal experiences as a therapy dog handler in Iraq. His focus is the reactions and emotional responses that his dog elicited among those with whom he interacted. CPT Gregg also describes the advantages the dog provided by dramatically reducing the stigma of attending stress and anxiety preventive education classes in small group settings directly in the area of operations. This engaging article is a brief snapshot into the deeply personal affect that a therapy animal can have among those in highly stressful environments, with an attendant improvement in their quality of life.

As interest in and acceptance of the use of animals in therapy assistance roles has grown, agencies and facilities have initiated various programs and activities involving animals to examine if value can be derived for their traditional practices, and, more importantly, their patients. As a result, a number of nonprofit organizations have been established for the sole purpose of providing animals, primarily dogs, to medical facilities, agencies, and individuals for use in various programs and extended therapy applications. MAJ Arthur Yeager and CPT Jennifer Irwin have contributed an article describing the human-animal bond programs implemented initially at the Walter Reed Army Medical Center, and then carried over into the consolidated Walter Reed National Military Medical Center. The article details a number of organizations that provide dogs and work with the Center in various ways, either by supplying service and therapy dogs fully trained for specialty purposes, or getting the recovering Warriors involved with training the dogs themselves. That training can be for medical therapy and assistance purposes, or simply as companion animals. No matter the program's structure or purpose, the benefit to the injured or ill service member is tangible, whether in enhancing the effectiveness of their therapy, or simply increasing their confidence and self-worth. The extent of the programs at this one military hospital will surprise and encourage you, as all indications are that Wounded Warriors undoubtedly benefit from these efforts.

The next articles describe in detail three of the nonprofit organizations that work with military medical activities, including Walter Reed, as discussed by MAJ Yeager and CPT Irwin in their article. First, Kathy Foreman and Dr Cynthia Crosson discuss the National Education for Assistance Dog Services, which provides fully trained service dogs to assist Warriors with physical disabilities,

both during their therapy and rehabilitation, and then as they return to civilian life. These dogs are providing both emotional and physical support, and as such restore the Veteran's dignity and self confidence to move into the next phase of life.

The article from Rick Yount, Meg Olmert, and Dr Mary Lee tells the story of one of the early organizations to use animals in therapy for posttraumatic stress, other mental health problems, and traumatic brain injuries. The Warrior Canine Connection teaches service members suffering from those problems to train service dogs to provide assistance to physically handicapped Warriors. There is, of course, a significant need (and demand) for such trained dogs, and the program, in existence since 2006, has shown how two different Warriors can benefit from a single dog, as one trains it to assist the other. This is an inspiring undertaking, and the results are undeniable. Warrior Canine Connection now works with the National Intrepid Center for Excellence in Bethesda to expand and improve its positive impact on Warriors and Veterans suffering with mental stress and brain injuries.

Ellen Alers and Kevin Simpson describe another program that teaches Wounded Warriors to train animals as therapy. However, these dogs are trained for a different reason from those discussed in the previous paragraph. The Washington [DC] Humane Society works with the Walter Reed Warrior Transition Brigade to involve recovering service members in training their rescued or abandoned dogs to be acceptable for adoption. The program, called Dog Tags, is an extensive 24-week training syllabus presented in 3 linked levels, which earns certification as a dog trainer upon completion. The program can be the foundation for entry into the career field of animal services. The program has existed since 2008, and has been an unqualified success, both for the Warriors and the dogs. This excellent article presents a tremendous,

uplifting example of another "win-win" undertaking. The Warriors benefit, the dogs benefit, and the families that adopt a Warrior-trained pet are also beneficiaries as their new family member is a well-rounded dog, already prepared for his or her new happy life.

Whenever we see footage of earthquake damaged structures, collapsed buildings, avalanches, mudslides, or the most tragic—bomb damaged structures, invariably we see rescue dog teams from all over the world desperately working to locate every possible survivor under the debris. We also see people frantically working to locate and rescue any survivors, and later, to recover the dead. What is not evident in those short video segments is the stress and anxiety that such work inflicts on those so engaged. Jan Shubert closes this issue of the *AMEDD Journal* with a very interesting article about the use of therapy dogs to comfort those workers and the families of both survivors and those who were killed. She describes an organization called Therapy Dogs International, which was established in 1976 to provide visitation dog teams to comfort hospitalized patients. The first disaster for which they were called to assist was, sadly, the 1995 bombing of the Murrah Building in Oklahoma City. That and other successful interventions spawned the establishment of another organization in 1999 specifically to provide assistance to disaster scenes, which eventually included Ground Zero in New York in September 2001, and New Orleans in 2004. In many ways these dogs provide a very similar service as the Army's COSC dogs discussed in other articles. They help mitigate feelings of stress, anxiety, helplessness, and frustration that can be overwhelming in such situations. Similar to the COSC dogs, they have been quietly assisting at many scenes of significant tragedy and stress, not always noticed by many, but greatly appreciated by those who benefit from that all too real (albeit difficult to explain) human-animal bond.



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The Early Years

COL (Ret) Elspeth C. Ritchie, MC, USA
COL Robinette J. Amaker, SP, USA

In 2012, it seems that service dogs and therapy dogs are everywhere. These include dogs for both civilians and service members with combat injuries. Traditional service dog organizations are now providing dogs to children with autism and Soldiers with posttraumatic stress disorder (PTSD). Service members are also training dogs, either to be adopted from shelters or become service dogs for other service members and Veterans.

The use of service dogs for physical disabilities is well established. Therapy dogs are increasingly used in disaster settings. Evolving trends include:

- The expanded use of dogs for wounded Soldiers and other service members and Veterans.
- The use of dogs in the overseas combat theater to assist with combat and operational stress control.
- Therapy dogs to assist with PTSD and other behavioral health issues.

The acceptance of canines in Army medicine and in the civilian world has virtually exploded. As with all innovations, there have been some lessons-learned. This article describes the early use of therapy dogs, both in the theater of war and at the Walter Reed Army Medical Center in Washington, DC. The evolution of current policy initiatives and formalization is detailed in the following article in this issue (see page 8).

Neither this article nor others in this dedicated issue of the *AMEDD Journal* discuss the use of other animals, such as horses for equine therapy or cats for companionship. Certainly there are valid and evolving therapeutic uses for those animals. However, due to the rapid expansion of interest, effort, and commitment of resources in the employment of dogs, as well as the unquestioned successes of such work, we elected to confine the articles in this issue to that species.

THE BEGINNINGS: THE FIRST USE OF THERAPY DOGS IN COMBAT AND OPERATIONAL STRESS CONTROL UNITS

Combat and operational stress control (COSC) teams have been active in the US Army since 1992. They provide education and therapy in the theater of war,

emphasizing prevention and seeking to prevent unnecessary evacuation. Easy accessibility to care and reduction of the stigma associated with behavioral/mental health care is a major goal.

In early 2007, the US Army Veterinary Command asked for a consultation from the Behavioral Health Division at the Office of The Army Surgeon General (OTSG). The topic was approval of the deployment of 2 dogs with a combat and operational stress control unit.

Animal-assisted therapy began in the Army in December 2007 when The Acting Surgeon General, MG Gale Pollock, approved the request of the 85th Medical Detachment (COSC) to send 2 dogs to Iraq. The commander of the detachment anticipated that the dogs would provide an element of stress relief unmatched by any human.

The use of dogs with COSC teams seemed like a great idea. Behavioral Health was all for it, initially. Yet there were a significant number of details to be addressed. The most pertinent questions included whether the Army could accept a donation of a dog, how to keep the dog healthy in theater, and how to measure the effectiveness of the intervention. The underlying theme reappears in several of the articles in this issue: “seems like a great idea,” but the “devil is in the details.”

The donation part was relatively straightforward. Since the dogs were each valued at roughly \$25,000, the ethics advisors had to determine that it did not show undue influence on OTSG by the donors. America’s VetDogs (Smithtown, NY) donated 2 black Labrador retrievers, SFC Boe and SFC Budge, to the Army. Two occupational therapy assistants traveled from Iraq to New York for dog handling training, and then returned to Iraq with their new charges.

Fortunately, the US military deploys Army veterinarians to ensure the public health and food safety of service members. They also care for other working dogs, such as those working with military police and explosive ordnance disposal. It was, therefore, relatively easy to ensure that the animals entered with a clean bill of health and remained healthy.

Much more difficult was the issue of how to measure effectiveness. How would we, or The Surgeon General, know if the dogs were actually working? It was easy to measure contacts and good press articles, but very hard to measure PTSD symptoms averted, suicides prevented, or marriages saved. Such questions led to some of the research described in articles in this issue.

Another major question was the optimal length of stay for the dogs in theater. No policy had been developed before SFCs Budge and Boe deployed to cover how long they should be there, or what should happen to reintegrate them into a normal environment upon return. Those first dogs ended up in Iraq for 2 deployments, a total of 24 months. The Veterinary Command and the Behavioral Health Division were reluctant to approve more dogs in theater until the details were resolved.

Upon return, the first dogs, SFCs Boe and Budge, went to the Eisenhower Army Medical Center at Fort Gordon, GA, and worked at the Residential Treatment Facility. The clinicians who worked with SFC Boe soon noticed that she seemed to be traumatized by her experience, and consequently might not relate well to Soldiers. After 6 weeks of reconditioning at VetDogs in Smithtown, NY, SFC Boe was returned to Eisenhower without any difficulties and is doing wonderful work with Soldiers with mild traumatic brain injuries. A plan was developed with VetDogs under which they would take the dogs to retrain and recondition them for 6 weeks upon return from deployment. Eventually, the continuing uncertainty about deployment policy resulted in a December 2009 summit of commands, agencies, specialists, and nongovernmental organizations with involvement or interest in such use of therapy dogs (details on page 8 of this issue).

There were other important lessons learned from that first deployment. Like most people, Soldiers want to feed the dogs treats and snacks, and they gained weight. Close attention had to be paid to their diet. The dogs had to be isolated from local feral animals. Other lessons emerged over the next few years. For example, well-intentioned individuals tried to bring in other dogs, often not as well-trained and/or without command approval. Those efforts were most always unsuccessful.

Consequently, it was very hard to persuade the command in Afghanistan to accept dogs. They were also worried about the potential for disease transmission, especially rabies, which is a serious problem there. Eventually, the command was persuaded, and in June 2010, 2 dogs were allowed into theater with the 212th Medical Detachment (COSC). As of this writing, both are still in Afghanistan.

THE FIRST USE OF DOGS AT THE WALTER REED ARMY MEDICAL CENTER

Several occupational therapists at the Walter Reed Army Medical Center (WRAMC) brought their personal dogs to work with the Wounded Warriors. They were an instant success. Wounded Warriors who were very tired of all the human attention and had withdrawn responded very well to the touch of an animal.

Predictably, there were also issues that developed concerning policies related to the use of animals at WRAMC. Again, there were unanticipated wrinkles. For example, there was no good way to screen all animals entering WRAMC to ensure that they were well-trained service animals, rather than simply a “pet in a vest.” Another concern was about the potential transmission of disease, specifically methicillin resistant staphylococcus aureus. However, the Commander, WRAMC was sympathetic to the use of canines, so the Occupational Therapy Department developed policies for the use of animals. One result was an internal policy that service animals should not be issued until a service member was ready to move off post to other housing. That made sense, as someone would have to care for the dog if the service member was still undergoing surgeries or other therapies.

TRAINING ISSUES

A major internal debate was the level of training that service or therapy dogs should receive. The early service dogs received about 2 years of training, which made them very expensive, between \$25,000 and \$50,000 per animal. Some advocates claimed that dogs could be trained by their service member handlers, at much less expense. The Warrior Transition Brigade Service Dog Training Program, described later in this issue (see page 58) used rigorous methods to teach service members how to train service dogs. Still, there are proponents of much less training. At present, there are no studies available to address this question.

BENEFIT OF DOGS IN DECREASING PTSD SYMPTOMS

Meanwhile, anecdotal examples of psychological benefits continue to be documented, and are discussed in other articles in this issue. In the authors’ visits to VetDogs and the National Education for Assistance Dog Services, we heard statements such as:

I used to take five different medications for my PTSD. Now I take two.

I could not be in malls or other crowded places. Now, with my dog, I can tolerate them, knowing he will rescue me.

When my husband returned from Iraq, he was a jerk. Since we got our dog, we have reunited as a family.

When I have a nightmare, he puts his muzzle into my face, and the nightmare stops.

We also heard a number of accounts about dogs who allegedly could abort seizures, ie, “my dog senses when a seizure is about to come on, and his touch stops it.”

NEXT STEPS

Personal accounts are compelling, but not usable as a basis for designing protocols or justifying the commitment of resources. There is a need for scientific data to more fully understand how the human-animal bond can continue to help our service members. Medical science professionals are moving to use evidence-based and evidence-informed research to develop practice guidelines, such as those in planning at the National Intrepid Center of Excellence in Bethesda, Maryland. This issue of the *AMEDD Journal* presents the beginnings of this body of knowledge.



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IN MEMORIAM

With heavy hearts, the Army Family said goodbye to our beloved SFC Budge, who lost his short battle with lymphoma on July 28, 2010. He was not only an incredible friend, but a remarkable comfort provider who touched the lives of many service members at his numerous duty stations. His service included 2 tours in Iraq, one each at Fort Hood and Fort Bragg, and his final assignment at Fort Gordon.

SFC BUDGE

10/02/04

07/28/10

Policy Initiatives for the Use of Canines in Army Medicine

LCDR Kathleen L. Watkins, HSO, USPHS

There is documented evidence dating from as early as 1940 citing the use of dogs to assist Wounded Warriors in therapeutic settings. Since that time, various efforts have emerged throughout the Army promoting the use of dogs to assist Warriors to attain higher levels of independence and self-reliance, allowing them to function more successfully in their communities and jobs. Most recent efforts include the use of service dogs and animal-assisted activities dogs in Warrior transition units, military medical treatment facilities, combat and operational stress control units and other settings.

As these service dog and animal-assisted activities efforts have emerged and expanded to support the Army's 9,661* Wounded Warriors and the rest of the Army community, so has the need for policies that define and govern the appropriate use, accompaniment, and maintenance of dogs and related programs. While the Army is not governed by the Americans with Disabilities Act of 1990 (ADA) (42 USC ch 126), in the absence of an overarching Army animal-assisted activities policy, the ADA and *Department of Defense Technical Bulletin TB MED 4¹* have become references for development of local policies throughout the Army.

The ADA prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and governmental activities. Specific sections of the Act are dedicated to the protection of people with physical and/or mental disabilities from discrimination in receiving public services, to include accompaniment by a service dog. Given the current climate of war, these provisions may have considerable impact on support available to disabled Veterans, as well as service members returning from Iraq and Afghanistan with both physical and psychological wounds.

Under the ADA, businesses must allow people with disabilities to bring their service animals onto business premises in whatever areas customers are generally allowed. Although not bound by these guidelines, the Army Medical Command has made a significant effort to develop policies and provisions that respect service

members, Army personnel, and all other persons accompanied by a service animal on Army installations.

TB MED 4¹ is the governing Department of Defense (DoD) regulation that establishes the processes necessary to maintain human-animal bond programs, animal visitation, animal-assisted activities, and animal-assisted therapy. This regulation promotes and supports human-animal bond programs by providing guidance on care, maintenance, and disease prevention of animals, including dogs. As of this writing, the US Army Veterinary Command, the DoD Executive Agent for Veterinary Services, is in the process of revising *TB MED 4*. The revision will include current definitions for animal-assisted activities, animal-assisted therapy, and service dogs.

HISTORY

In November 2009, the Army Veterinary Command (VETCOM) engaged the Behavioral Health Division of the Office of The Surgeon General (OTSG) in discussion concerning the growing interest in animal-assisted activities, and the numerous initiatives throughout the Army that involved use of dogs. To help coordinate these initiatives, VETCOM and the Behavioral Health Division held an animal-assisted therapy summit December 15 to 17, 2009 at Fort Myer, Virginia. The agenda included current efforts, research, metrics for program evaluation, and logistical and legal challenges. The forum brought together 8 nongovernmental organizations for the first half of the proceedings to discuss their programs. Other attendees included staff from the Warrior Care and Transition Office; Army medical treatment facilities; the OTSG Rehabilitation and Reintegration Division, Walter Reed Army Medical Center; US Air Force; US Navy; and combat and operational stress control staff who work with and handle the animal-assisted activities dogs in theater.

Products from the summit included mission priorities, a research agenda, and the corporate way ahead. During the meeting, the group discussed the significance of defining the different types of dogs and their appropriate use. The group defined and differentiated between animal-assisted activities, animal-assisted therapy, and service dogs. One of the outcomes of the meeting was the decision to develop an Army Medical Command

*Data current as of January 9, 2012. Source: US Army Warrior Transition Command Report.

(MEDCOM) policy to provide standardized guidance on the use and maintenance of dogs at all medical treatment facilities. The Walter Reed Army Medical Center (WRAMC), which had significant experience managing an animal-assisted activities program and was already working on a local policy to govern their thriving dog programs, was identified as the lead to begin developing the MEDCOM dog policy.

On February 5, 2010, a follow-up meeting was held to review the progress since the summit. Participants included the OTSG Behavioral Health Division, WRAMC, Europe Regional Medical Command, the Veterans Administration, and a host of nongovernmental organizations and subject matter experts in animal-assisted activities, and research. Topics included (a) optimizing the use of dogs in the combat and operational stress control teams in Iraq; (b) moving forward with research opportunities at WRAMC and the Europe Regional Medical Command; (c) potential use of dogs in Warrior Transition Units; (d) development of a MEDCOM-wide policy and updating a number of animal policies, including DoD *TB MED 4*,¹ WRAMC facility policy, and the combat and operational stress control policy; (e) various models which may be helpful; (f) visiting animal-assisted activities program/facilities, and (g) the importance of clarifying the diverse use of dogs (service, animal-assisted therapy, and animal-assisted activities). Participants at the meeting also noted that Army Family Action Plan² Issue #653 which recommended funding a program to provide service dogs to Wounded Warriors was assigned to the Warrior Transition Command for exploration and proliferation. On March 8, 2010, Issue #653 was transferred from the Warrior Transition Command to the OTSG Behavioral Health Division for examination by senior officials within OTSG and MEDCOM.

In March 2010, the Behavioral Health Division visited America's VetDogs—an organization in Long Island, New York, that trains and provides guide and service dogs to assist wounded service members and Veterans who have visual, physical, occupational, and/or emotional impairments—to gain further understanding of how dogs were being used to assist wounded service members and Veterans. The visit included an overview of the program, a tour of the facility, observation of service dog training, and interaction with Veterans who were currently enrolled in the program. A class of 11 Soldiers, Marines, and Veterans were observed as they learned to train their service dogs to perform specific tasks to address their individual needs.

The VetDogs Chief Executive Officer provided information to assist the Behavioral Health Division with

its expanded mission related to animal-assisted therapy and funding service dogs for Wounded Warriors. Topics included: (a) pros and cons of developing an army animal-assisted therapy/service dog program versus use of existing, accredited nongovernmental organization programs, (b) optimizing the use of dogs in the combat and operational stress control teams, (c) logistics related to sending dogs to Afghanistan with the 254th Medical Detachment from Germany, and (d) developing research strategies and metrics. America's VetDogs offered a donation of 2 service dogs specifically trained for the tasks they will perform with the 254th Medical Detachment. The donation was later approved by The Surgeon General.

On April 12, 2010, the OTSG Behavioral Health and Rehabilitation and Reintegration Divisions visited the National Education for Assistance Dog Services (NEADS)/Dogs for Deaf and Disabled Americans in Princeton, Massachusetts. NEADS, a nonprofit organization that uses inmates to train their dogs, provides canine assistance dogs to combat Veterans and people with hearing and physical disabilities. The use of inmates, while cost effective, is also intended to provide a therapeutic support for the inmates.

The visit to NEADS included an overview of the program, a tour of the facility, observation of the training, demonstrations, and interaction with Veterans in the program diagnosed as having physical disabilities, post-traumatic stress disorder, and traumatic brain injury. The NEADS Chief Executive Officer and staff provided information on the impact of their program and expansion into animal-assisted therapy. Topics included: (a) NEADS expanded programs to help persons with disabilities, (b) metrics and NEADS Traumatic Alert Dog Program pilot study regarding the impact of placing service dogs with Veterans diagnosed with posttraumatic



The class of Soldiers, Marines, and Veterans learning to work with service dogs at the America's VetDogs facility in Long Island, New York (March 2010). Photo courtesy of the author.

stress disorder, and (c) pros and cons of developing an Army animal-assisted therapy/service dog program versus use of existing accredited programs. Following the visit to NEADS, the OTSG Rehabilitation and Reintegration Division briefed the MEDCOM Chief of Staff on the therapeutic use of dogs in the Army, resulting in a request for a follow-up brief in May 2010.

In an effort to gain further insight into the impact of dogs on Wounded Warriors, during April 2010 representatives from the OTSG and VETCOM also toured the Army's most robust animal-assisted therapy program located at the Walter Reed Army Medical Center. Also present were representatives from the MEDCOM, DoD, nongovernmental organizations, and congressional staffers from Senator Barbara Boxer's office, the US House of Representatives Committee on Veterans' Affairs, the Minority Staff of the House Veterans Affairs Committee, and the Subcommittee on Health of the House Committee on Veterans' Affairs. The group observed the Specialized Therapy K-9 program; the Warrior Transition Brigade occupational therapy work and education program "Paws for Purple Hearts" Service Dog Training Program; and the Warrior Transition Brigade occupational therapy work and education program, the Washington, DC Humane Society Warrior in Transition Behavior and Grooming Training Program. Wounded Warriors diagnosed with posttraumatic stress disorder demonstrated methods for training service dogs, which is part of their therapy. Wounded Warriors also gave testimony regarding the positive impact of the program on their lives. The day ended with a research meeting at which the topics of discussion included: (a) establishing qualification criteria and identifying the number of Wounded Warriors who may benefit from having a service dog, (b) research and data collection, (c) identification of funding sources, and (d) scheduling a follow-up teleconference at the end of May for further discussion regarding research.

Following the OTSG/VETCOM tour of the Walter Reed Army Medical Center in May 2010, there was discussion initiated by WRAMC on whether or not to move forward with development of an Army-wide MEDCOM dog policy, or direct efforts towards the revision of DoD *TB MED 4*,¹ lead by VETCOM. It was determined that while both efforts were significant to the advancement of animal-assisted activities, a comprehensive MEDCOM policy was needed to provide standardization for use of dogs at Army medical treatment facilities. Policies existed at the local level but were not applicable to all medical treatment facilities, therefore creating inconsistencies between the medical treatment facilities on the

maintenance, care, and use of dogs, and causing lack of differentiation between pets, animal-assisted activities, animal-assisted therapy, and service dogs. The task of writing the MEDCOM dog policy was transferred from WRAMC to the Office of The Surgeon General, with the author as action officer.

On November 9, 2010, the OTSG Behavioral Health Division published the first MEDCOM-wide policy on use of canines in Army medicine. OTSG/MEDCOM Policy Memorandum 10-077³ provides guidance on the authorized use, ownership, and accompaniment by service dogs at military medical treatment facilities and Warrior Transition Units.

To further explore the possible benefits of dogs for Wounded Warriors, on December 3, 2010, the Behavioral Health Division held a teleconference with WRAMC subject matter experts on animal-assisted activities. The teleconference focused on current uses of dogs with Wounded Warriors and surveying to determine how many Wounded Warriors may benefit from having a dog. The teleconference resulted in a recommendation to use components of the Functional Independence Measure and Functional Assessment Measure (tools which are currently used at WRAMC) to assist with determining cognitive and physical disabilities of Wounded Warriors and the appropriateness of referral to a nongovernmental organization that donates service dogs to service members and Veterans.

On April 11, 2011, the OTSG Rehabilitation and Reintegration Division published OTSG/MEDCOM Policy Memorandum 11-030.⁴ The policy recognizes that dogs have long assisted healthcare professionals in various rehabilitative treatments, including combat and operational stress control. Policy Memo 11-030 establishes the role of animal-assisted therapy and animal-assisted activities dogs in combat and operational stress control units, operational employment with combat and operational stress control units, and animal-assisted therapy and animal-assisted activities dog programs throughout the battle space. The policy also identifies Army occupational therapists as the primary handlers of these dogs in the Army, with behavioral health professionals as alternates.

The Behavioral Health Division consulted with the Rehabilitation and Reintegration Division on use of the Functional Independence Measure and Functional Assessment Measure as instruments for determining the number of Wounded Warriors that may need or benefit from having a service dog. Noting the Functional

Independence Measure and Functional Assessment Measure scales are not widely used by Army occupational therapists, OTSG Rehabilitation and Reintegration recommended a general survey as an alternative measure. Other options presented during this meeting included obtaining data for the past 3 years from the Army programs that support animal-assisted activities, the Veterans Administration funded dog program, and nongovernmental organizations that match service members and Veterans with service dogs. As a result, in May 2011 the author developed a survey to determine the trend of service dog matching and placements with Wounded Warriors and service members over the past 3 years. Survey participants included the Veterans Administration, Army regional medical commands, and America's VetDogs and NEADS, the 2 nongovernmental organizations who primarily provide service dogs to Soldiers and Veterans.

In December 2010, the Clinical Services Division, Office of the MEDCOM Assistant Chief of Staff for Health Policy and Services, convened a meeting with the Army animal-assisted activities stakeholders to review the Army's efforts and policies related to dogs. During the meeting, the Clinical Services Division was identified as the lead division for all MEDCOM animal-assisted activities efforts. There was also discussion regarding the need for an Army-wide animal policy to provide guidance for not only dogs, but for use of all animals in Army healthcare settings. Following the meeting, the Clinical Services Division examined the Army's animal-assisted activities efforts and trends, and reviewed the OTSG Behavioral Health Division survey on Wounded Warriors who may benefit from having a service dog. In October 2011, the Clinical Services Division began staffing a draft policy on the use of animals in the healthcare setting. The draft policy provides guidance on use of service animals, animal-assisted therapy and animal-assisted activities to include canines, equines, and other species. When published, this policy will apply to all Army medical treatment facilities using animals in the healthcare setting, Wounded Warriors, and beneficiaries treated within medical treatment facilities, regardless of component or duty status. Publication is expected in the near future.

Recognizing the growing interest in the use of dogs to assist service members, the Deputy Assistant Secretary of Defense for Wounded Warrior Care and Transition Policy (DASD WWCTP) held a DoD service dog policy

development meeting off-site in March 2011. The meeting was held to discuss development of a comprehensive DoD service dog policy that will provide clear guidance to all of the military services, commanders, healthcare providers, and service members who work with, qualify for and/or will benefit from the use of service dogs on DoD installations. Leaders and subject matter experts, including the Behavioral Health Division, convened at this meeting to discuss development of the DoD service dog policy that will assign responsibilities and provide instructions for the use of service dogs by service members within the DoD. The DoD service dog policy will also establish policy for the authorized use of animal-assisted activities and animal-assisted therapy on DoD installations. A draft policy was developed at the conclusion of the meeting. Since that time, the DASD WWCTP has continued to refine the document. A publication date has not been determined.

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Definitions of Animals Used in Healthcare Settings

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With the exception of maggot debridement and medicinal leech therapy, active and passive medical interventions using a live animal are defined by the human-animal bond. Encounters center on the dynamic and interactive relationship between humans and animals to provide psychological or physical benefit.^{1,2} This bond is the core of several therapeutic approaches using various species. The most common are assistance or service animals; therapy and activity animals; and emotional support, companion, or social animals. The efficacy of the human-animal bond as a healthcare tool greatly depends on how the animal's roles are used by a group or an individual. Unlike medical equipment, defining specific functions of a living tool is essential to the maintenance and common logistical factors that affect the health and welfare of the animal. From a legal perspective, definitions are necessary for establishing eligibility, benefits, and even liability when considering whether the standard of care is met. As the military medical community increases its use of animals, specifically canines, clarification of utility is needed to develop policy and ensure good practice.

ASSISTANCE OR SERVICE ANIMALS

Throughout much of the world, assistance animals are categorized into guide dogs, hearing dogs, or service dogs.^{3,4} However, in the United States, the synonymous term "service animal" is often used and may mean any type of assistance animal.⁴ In 2010, the Americans with Disabilities Act (ADA) (42 USC §12101-12213 and 47 USC §§225, 611) was revised with regard to the definition and use of service animals. For purposes of US law, the ADA [as amended] defines a service animal as:

any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability.^{5(p56250)}

Further, it stipulates that

Individuals with disabilities shall be permitted to be accompanied by their service animals in all areas of a public entity's facilities where members of the public, participants in services, programs or activities, or invitees, as relevant, are allowed to go.^{5(p56251)}

The ADA definition of disability is a "physical or mental impairment that substantially limits one or more major life activities of such individual."⁶ To be considered a service animal, a direct link must exist between the animal's work or tasks and the handler's disability. However, the animal's work must be a trained behavior and not a response that is natural to the animal. The current ADA definition does not consider violent protection (whether trained or untrained), crime deterrence due to an animal's presence, emotional support, well-being, comfort, or companionship as acceptable work or tasks for the definition of a service animal. Although animals such as primates, equines, avians, felines, porcines, and even bovines have all been trained to help humans perform daily tasks, 28 CFR §35.104 (as amended in 2010) limits the definition of a service animal to canines only and does not include any other species of animals, regardless of whether those other species are wild or domesticated, trained or untrained.^{5(p56250)} A trained miniature horse as an alternative to an assistance dog is the one exception to permitting the use of a noncanine species in the role



Raliegh, a facility animal and trained service dog, providing balance assistance and ambulation propulsion (in the role as a service dog) at the Military Advanced Training Center, Walter Reed Army Medical Center. Photo courtesy of the authors.

of a service animal in a public space.^{5(p56251)} However, a miniature horse is not defined as a service animal by 28 CFR §36.104 and its use is subject to certain limitations, as outlined in 28 CFR §35.136.^{5(p56250),7}

The ADA delineates further conditions and rules regarding service animals.^{5(p56251)} A service animal must be house broken, under the control of the handler at all times, harnessed or leashed at all times (unless that restraint would interfere with the performance of the animal's work), and is not subject to size, weight, or breed limitations.^{5(p56271)} A public entity cannot inquire about the nature of an individual's disability, but, to determine whether an animal qualifies as an assistance animal, an entity may ask the handler whether the animal is required because of a disability and what work or task the animal performs for the disabled person. The public entity cannot ask for proof of documentation that the animal is a qualified or trained assistance animal or require payment of a surcharge for access to a public space or facility, even if that entity requires payment for pet access.^{5(p56251)}

Canines are the most common species of assistance animals, working well as guide dogs, hearing dogs, or service dogs. Guide dogs assist the visually impaired (blind or low vision) with navigation such as avoiding obstacles, stopping at curbs and steps, and negotiating traffic.⁸ Hearing dogs are trained to alert those with hearing impairment (deaf or hard of hearing) to the presence of people or household and community sounds by making physical contact and, if appropriate, leading their handlers to the source of the sound.⁹ Service dogs are trained to perform a wide variety of common and customized tasks for individuals with impairments other than auditory or vision dysfunction.¹⁰ Assistance with physical, cognitive, or psychiatric disabilities can promote functional independence and increased quality of life. Specially trained service dogs can perform a variety of tasks including, but not limited to, providing balance and counterbalance; alerting the handler to pending medical disorders such as seizures or hypoglycemia or assisting during episodes of those disorders; assisting to pull a wheel chair; retrieving a variety of large or small items; alerting to the presence of an allergen; turning lights on and off or pushing elevator and automatic door buttons; assisting with functional transfers; providing nonviolent protection or rescue work.¹⁰ Specific skills that address a particular disability may be included in their title, such as "balance dog" or "psychiatric service dog." The latter may assist individuals with psychiatric and neurological disabilities by preventing or interrupting impulsive or destructive behaviors, or mitigating behavioral health disabilities in other ways.^{5(p56250)} All of the above examples of assistance dog

tasks are consistent with the ADA definition of a service animal.^{5(p56250)}

THERAPY AND ACTIVITY ANIMALS

While federal law does not define therapy and activity animals, some states do have laws defining such animals.¹¹ Regardless of a therapy or activity animal's legal definition, they are not service animals and do not have public access privileges afforded to service animals. The main distinction between therapy or activity animals and service animals is that the former, through the use of the human-animal bond, provide services to other people (with or without disabilities) under the direction of their handlers, whereas, the latter are trained to do work or tasks solely for their dedicated handler with a disability.¹¹ They are expected to work reliably and safely with others, often with many distractions. Recognizing that the therapeutic effects of the human-animal bond are not exclusive to people with disabilities,^{1,12,13} several professional and animal advocacy organizations have defined the various types of nonassistance/service animals. One such organization, Delta Society, has defined both animal-assisted therapy (AAT) and animal-assisted activities (AAA) animals.¹⁴

Animal-assisted therapy is part of a goal-directed, individualized healthcare treatment plan for individuals with physical, social, emotional, or cognitive dysfunction, where the AAT intervention is documented in the patient's health record. Animal-assisted therapy is



Hero, a trained service dog, providing comfort and emotional support (in the role of animal-assisted activities) at the Occupational Therapy Clinic, Walter Reed Army Medical Center. Photo courtesy of the authors.

DEFINITIONS OF ANIMALS USED IN HEALTHCARE SETTINGS

Classification of types of animals used in various healthcare settings and situations.												
Legally defined	Guide Dog	Hearing Dog	Service Dog	Service Miniature Horse	AAT Animal	AAA Animal	Emotional Support Animal	Resident/Facility Animal	Companion Animal	Social/Therapy Dog	Recreational Animal	Mascot
	Yes ⁵	Yes ⁵	Yes ⁵	Yes ⁵	In some states ¹¹	In some states ¹¹	In some states ²⁵	No ⁵	No ¹¹	No ¹¹	No	No
Federal legal definition as an assistance/service animal	Yes ⁵	Yes ⁵	Yes ⁵	No ^{5,7}	No ⁵	No ⁵	No ⁵	No ⁵	No ⁵	No	No	No
Federal legal protections for access to public facilities and spaces	Yes ⁵	Yes ⁵	Yes ⁵	With certain conditions ⁵	No ²⁴	No ²⁴	No ⁵	No ⁵	No ⁵	No	No	No
Federal legal protections for access to housing	Yes ^{5,25}	Yes ^{5,25}	Yes ^{5,25}	With certain conditions ^{5,25}	No ²⁵	No ²⁵	Maybe ^{20,21,25}	No	No	No	No	No
Performs trained tasks/work for a dedicated handler	Yes ⁵	Yes ⁵	Yes ⁵	Yes ⁵	No ¹¹	No ¹¹	No ²¹	No	No	No	No	No
Used as part of a facility's planned or spontaneous activities	No	No	No	No	Planned ¹⁴	Both ¹⁴	No	Maybe ¹⁷	No	Both	Both	Both
Used as part of a healthcare treatment plan	No	No	No	No	Yes ¹⁴	No ¹⁴	No	Maybe ¹⁷	No	No	No	No
Used to achieve specific healthcare treatment goals	N/A	N/A	N/A	N/A	Yes ¹⁴	No ¹⁴	N/A	Maybe ¹⁷	N/A	N/A	N/A	N/A
Used with individualized or group sessions	N/A	N/A	N/A	N/A	Individual ¹⁴	Both ¹⁴	N/A	Maybe ¹⁷	N/A	N/A	N/A	N/A
Medical documentation required.	N/A	N/A	N/A	N/A	Yes ¹⁴	No ¹⁴	N/A	Maybe ¹⁷	N/A	N/A	N/A	N/A
Visit schedule and length is predetermined.	N/A	N/A	N/A	N/A	Yes ¹⁴	No ¹⁴	N/A	Maybe ¹⁷	N/A	N/A	N/A	N/A
Visit conducted/supervised by a healthcare professional or any handler.	N/A	N/A	N/A	N/A	Healthcare professional ¹⁴	Any handler ¹⁴	N/A	Maybe ¹⁷	N/A	N/A	N/A	N/A
Can be a pet	No	No	No	No	Maybe ¹¹	Maybe ¹¹	Maybe ¹¹	Maybe ¹⁷	Yes ¹¹	Yes ¹¹	Yes	Yes
Used to provide comfort	No	No	No	No	No ¹¹	Maybe ¹¹	Yes ²¹	Maybe	Maybe	Maybe	Maybe	Maybe
Used for recreation	No	No	No	No	No	No	No	No	No	No	Yes ²²	No
Used for esprit de corps	No	No	No	No	No	No	No	No	No	No	No	Yes ²²
AAT indicates animal-assisted therapy. AAA indicates animal-assisted activities.												

AAT indicates animal-assisted therapy.
AAA indicates animal-assisted activities.

conducted on scheduled visits, of a regular interval and directed or delivered by a professional within the practice scope of a health/human service provider. Animal-assisted therapy animals may or may not have previous formal assistance/service dog training. Examples of AAT may be a patient with balance dysfunction using a trained dog wearing a rigid-handled harness to assist with gait training, or the use of trained dogs in military combat stress control units for behavioral health interventions.

Comparatively, AAA are untailored “meet and greet” activities without specific treatment goals. Animal-assisted activities can be conducted in group settings with many people, and no documentation is necessary. Unlike a therapy program, the AAA visits and activities can be spontaneous, of any length or frequency, and conducted by any handler. Examples of AAA might include a volunteer handler with dog visiting a hospital pediatric oncology ward to raise the spirits of children, or a dog training organization bringing their animals to an outpatient facility to positively interact with Wounded Warriors.

Animals used in AAT and AAA are often dogs, but also frequently include equines, such as hippotherapy programs, which use horses as part of an integrated rehabilitation treatment program supervised by a healthcare therapist.^{15,16} Resident or facility animals can be AAT or AAA animals and are similar in that each works with a volunteer or professional whose training falls under the auspices of a formal program. The work of a facility animal can include visitations or professional therapy in one or more locations. A very common example of facility animals is the simple presence of fish in a doctor’s office. However, dogs are common as well and can provide a more intimate and effective human-animal bond experience. Resident animals can live or work in a facility full time. They are often owned by the organization or a facility staff member and can be handled and cared for by the staff, volunteers, or residents. After appropriate training and screening, resident animals may formally participate in a facility’s planned or spontaneous activities and therapies with patients or residents.¹⁷ Resident animals may also function in the role of emotional support, companion, social, or mascot animals.

EMOTIONAL SUPPORT, COMPANION, SOCIAL, AND MASCOT ANIMALS

Although the medical evidence for the health benefits of the human-animal bond is not definitive,¹⁸ evidence suggests that pets can promote health and wellbeing in disabled and able persons alike.^{12,19} Skills that are inherent to a canine do not necessarily assist an individual



Ralieg, a facility animal, providing counterbalance during a physical therapy session (in the role of animal-assisted therapy) at the Military Advanced Training Center, Walter Reed Army Medical Center. Photo courtesy of the authors.

in completing a task, but instead can provide emotional support to an individual. Emotional support animals provide comfort to persons with psychiatric disability but do not perform trained tasks to assist the individuals. Because the comfort offered by the mere presence of an animal is not a trained skill, emotional support animals are not covered under US laws that apply specifically to service animals, unlike a psychiatric service animal that provides specific trained work or a task to help mitigate a handler’s psychiatric disability. However, some persons with psychiatric disability served by emotional support animals may be afforded certain housing rights as a “reasonable accommodation” under Section 504 of the Rehabilitation Act of 1973 (29 USC §701) and the Federal Fair Housing Amendments Act of 1988 (FHAA) (42 USC §3601-3619).^{20,21} Emotional support canines are sometimes referred to by other terms such as “social dog,” “companion dog,” or “therapy dog.” Social, emotional support, companion, or therapy animals may be untrained or animals that were once considered for formal assistance/service dog training but, due to health, disposition, trainability, or other factors, did not complete the training.¹¹ Such dogs are often made available as pets for people with certain disabilities. Nonetheless, emotional support animals are not legally considered pets due to their qualifications under Section 504 and FHAA, but a companion animal is synonymous with a pet. The meanings of a social/companion animal are nearly self-explanatory. Conversely, the varied meanings of what is therapeutic in regards to a therapy animal, are not as clear or concrete. Furthermore, the variety of perspectives with regard to therapeutic efficacy range from the individual(s) experiencing and facilitating the human-animal bond, up to and including the federal government that influences accommodation, public access, and healthcare.

OFFICE OF THE ARMY SURGEON GENERAL/ARMY MEDICAL COMMAND POLICY

A recently issued policy memorandum²² from the Office of The Surgeon General/Army Medical Command provides definitions for various types of animals for purposes of establishing policy guidance and procedures for the use of animals in Army healthcare. It is the intent of this policy that, although the Army is not generally bound by the ADA, Army Medical Command facilities “will abide by [ADA] provisions to as great a degree as is practicable and when such adherence does not hamper readiness.”²² As such, the policy similarly defines animals as above with a few differences to note. The policy defines service animals as dogs only. Additionally, the policy defines “service-dogs-in-training” as dogs undergoing training as part of Wounded Warrior therapeutic internship opportunities in which wounded Soldiers train service dogs for fellow service members. Some state regulations grant public facility/space access to trainers while they instruct clients with disabilities and/or the service-dogs-in-training.²³ “Recreational animals” are defined as “animals not owned by an individual and used solely for recreational purposes,”²² for example, horses ridden at a dude (tourist) ranch. The terms “companion,” “emotional support animals,” and “pets” are synonymous and defined as “any animal owned by individual Soldiers or beneficiaries not meeting the definition of a service animal.”²² Military working dogs are government-procured and owned dogs used for military working purposes, such as explosive detection, security, or search and rescue. Finally, the policy defines mascots as animals adopted by nondeployed Army units for purposes of *esprit de corps*.²²

According to the governing triservice regulation,²⁴ to qualify as a mascot, the animal must be on orders signed by an officer of 0-5 grade or higher. Such mascots are owned by the Department of Defense and, thus, are eligible for veterinary medical/surgical care and support services.²⁵ However, animal mascot or pet adoption is subject to the policies and limitations of animal adoptions which are imposed by theater commands in respective areas of responsibility, such as the prohibition of animal adoption in the deployed environment per US Central Command Area of Responsibility General Order Number 1B (GO-1B), dated March 13, 2006.*

The overwhelming novelty of experiencing animals in a therapeutic setting relies on the familiarity that American culture has with canines and family pets. More specifically, military patients respond well to the animal

interaction and with less concern whether a service dog has public access; whether an emotional support dog’s efficacy can be proven; or whether a therapy dog fosters rehabilitative care. For many, a dog’s all-accepting disposition and wide range of intangible health promoting factors is a welcome oasis in a setting where anxiety, pain, or decreased function are often prevalent. Some of the defining characteristics of the different types of animals involved in healthcare are presented in the Table. Understanding the legal, professional, and common definitions of these types of animals will help providers deliver the best care and develop appropriate policy to maximize the tangible and intangible benefits of the human-animal bond.

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Raliegh is a facility animal at the Military Advanced Training Center, Walter Reed National Military Medical Center. Photo courtesy of the authors.

Historical Perspectives of the Human-Animal Bond Within the Department of Defense

COL Perry R. Chumley, VC, USA

ANIMALS AND THE MILITARY

Ever since mankind went to war, animals have played significant roles. Such roles have been either in official capacities such as cavalry horses, sentry dogs, carrier pigeons, and unit mascots, or unofficially as a Soldier's battle companion. Prior to a battle, the Roman army performed a ritual that involved offering food to sacred chickens: if the chickens ate the food, it was an omen that the gods would join them; if the chickens refused to eat, defeat was imminent.¹

During World War II, highly trained carrier pigeons provided a means of communication. Today, most utilitarian uses of animals in the military are not well known, except for the military working dogs that are trained to attack the enemy and detect explosives or narcotics. However, our military inventory of animals expands to US Navy dolphins, Special Operations horses, Marine Corps mules, and even peacocks that act as security alarms at key government installations.

Lieutenant Colonel George A. Custer of Battle of the Little Big Horn infamy, was known to have his dogs around him during campaigns. He affectionately mentions being surrounded by his dogs in several letters to his wife, such as the one written on June 12, 1876:

Tuck regularly comes when I am writing, and lays her head on the desk, rooting up my hand with her long nose until I consent to stop and notice her. She and Swift, Lady, and Kaiser sleep in my tent.²

During World War II, General Eisenhower once remarked that his Scottish terrier mascots were especially appreciated, "because they are the only 'people' I can turn to without the conversation returning to the subject of war."³

Animal mascots have long been associated with unit *esprit de corps*. Interservice rivalries have boasted the Air Force Falcon versus the Army Mule or the Navy Goat versus the Marine Corps Bulldog. Animal mascots have been placed on official unit orders and even given rank by the adoring units that proudly parade them around the military posts. Stories abound of animal mascots being integral parts of combat units, offering pride, stress relief, and a sense of humility during challenging periods.

Pets are bona fide members of the military family, even perhaps assisting with military family transfers or service member deployments as the pet is seen as a stabilizing factor for children of military families.⁴ It has also been shown that for a married couple without children, the attachment level to the pet can be very high, implicating a "surrogate" child relationship with animals (P.R.C., unpublished data, 1992).

ANIMALS AND MILITARY HEALTHCARE

In the healthcare field, there exists an increasing popularity of the bond that is enjoyed between humans and animals. Multiple healthcare professions have recognized potential health benefits of the interactions that humans experience with animals. For example, it is well documented that the act of stroking a pet can significantly lower a person's blood pressure. The presence of dogs has been associated with reductions in blood pressure, mean arterial pressure, heart rate, and distress. Friedmann et al demonstrated a decreased mortality rate in pet owners one year after discharge from a coronary care unit.⁵ These examples illustrate the beginning of many potential treatment benefits offered by companion animals in a clinical treatment setting.

Animals have found such a place in assisting the human healthcare professionals, the practice now known as animal-assisted therapy. In fact, there is an early history of animal-assisted therapy in US military treatment facilities. The US military promoted the use of dogs as a therapeutic intervention with psychiatric patients in 1919 at St Elizabeth's Hospital in Washington, DC.⁶ Another early documented human-animal bond program involved the Department of Defense (DoD) at Pawling Army Air Force Convalescent Center, Pawling, NY, in the 1940s.⁷ The Center's farm animals were integrated into the treatment milieu for emotionally traumatized veterans and provided a purposeful interaction during their convalescence.

Following World War II, Dr Boris Levinson, a psychologist, used his own dog as a co-therapist during counseling sessions and published his findings in the 1960s. Interest in this field grew rapidly with the formation of the Delta Society in 1981, along with international membership and influence, leading to recognized benefits of

human-animal bond interactions being accepted by the healthcare professions.

In 1983, LTC Thomas Catanzaro, US Army Veterinary Corps, wrote of the interdependent relationships of animals, humans, and the health professions, and also described many considerations for establishing an animal-assisted therapy program in his *An Administrator's Guide for Animal Facilitated Therapy Programs in Federal Healthcare Facilities*.⁸

In 1985, the US Army Veterinary Corps, the DoD Executive Agent for Veterinary Services, took the lead in developing a better understanding of human-animal relationships and actively pursued ways for this knowledge to contribute to the military community. To that end, a Veterinary Corps officer, MAJ Lynn Anderson, was designated as the Human-Animal Bond Advisor to The Surgeon General of the Army in 1986.

The Veterinary Corps established a 2-year Masters of Public Health program with an emphasis in the human-animal bond and community health specialties at the University of Tennessee in Knoxville. Upon graduating from this program in 1992, the author became the Veterinary Corps' subject matter expert and established and directed the US Army Service Dog Training Center (SDTC) at Fort Knox, Kentucky from 1995 to 2004.

The SDTC was a pilot program initiated to assist physically disabled Veterans and/or exceptional family members. The SDTC trained select stray dogs to become the indispensable helpers for physically disabled Veterans or family members. The SDTC staff consisted of 2 civil service animal trainers who trained not only the animals, but also select inmates from the Law Enforcement Command's local prison. By assisting with training the dogs, the inmates received a rehabilitative experience as they transformed the unwanted stray dogs into invaluable helpers for those in need. The SDTC program graduated its first trained human recipient and animal teams on Veterans Day, 1997. Throughout its 7-year history, the SDTC successfully graduated over 60 human-animal teams represented by all of the DoD Services. Unfortunately, this program closed in October 2004 due to funding constraints within the Army Medical Department.

Various animal-assisted activity programs, including animal visitation, operate at a number of Army medical centers (AMC), most notably at Tripler AMC (Honolulu) and Brooke AMC (Fort Sam Houston, TX), as well as the Munson Army Health Center, Fort Leavenworth, KS, and the Walter Reed National Military Medical Center (Bethesda, MD). Such programs are supported

by the local Army medical commands and operate with a core of Red Cross volunteers. The main purpose of these programs involves bringing smiles to the patients, family members, and hospital staff. In doing so, patients focus on the animals which may help alleviate their fear, anxiety, or pain. Often, the hospital staff reports an increase in interaction with the patients associated with animal visitation programs. An example of continued animal-assisted activity program success is the recognition of the Tripler AMC program, which has existed for over 20 years, by the Annual Hawaii State Chapter Heroes Award. Also, before it was deactivated, the Army Veterinary Command recognized the values of such involvement with a competition each year for the best human-animal bond program among its subordinate branches. Another type of approach is represented by a unique human-animal bond program at Fort Myer, VA, the Equine-Assisted Program, which uses the caisson horses to help improve balance for certain traumatic brain injury patients.

Army military veterinarians of the Public Health Command perform the behavioral temperament evaluations and health examinations for the animals involved with the animal-assisted therapy and animal-assisted activity programs throughout the contiguous United States, Hawaii, and Germany. This involvement helps to ensure that the appropriate animals are employed to assist patients, clinicians, and families during the healing processes.

As an adjunct to more traditional treatment modalities, the Walter Reed National Military Medical Center (WRNMMC) is currently involved with several human-animal bond programs that allow rehabilitating Soldiers to skillfully train potential mobility service dogs for Veterans with mobility impairments. This program is in collaboration with the therapeutic service dog training program operated by Warrior Canine Connection, a nonprofit organization located near WRNMMC. At the Eisenhower Army Medical Center, Fort Gordon, GA, certain Soldiers who are recovering from posttraumatic stress disorder are recommended by behavioral healthcare providers to work with dogs to facilitate their goal-oriented therapeutic regimens.

In the military operational environment, pairs of certified therapy dogs have been specially trained and deployed to Iraq and Afghanistan with several combat and operational stress control units. The 212th Medical Detachment and the 254th Medical Detachment both employed therapy dogs for approved studies related to how the animals' involvement may affect certain attitudes such as mood state, job satisfaction, stress levels, and resilience levels. To date, results of that study are

pending. The dogs are viewed as a means of breaking down the perceived barriers and facilitating social interaction between Soldiers and occupational health medical professionals.

Interest in the human-animal bond field expanded enough that an Animal-Assisted Therapy Summit was organized in December 2009 by the Behavioral Health Division, Office of The Army Surgeon General. The 3-day meeting at Fort Myer was initiated to help describe and define existing animal-assisted activity and animal-assisted therapy programs and terminologies, as well as uses of animals in combat stress control units, Warrior transition units, and several military treatment facility programs. A consensus was developed to enhance standards, policies, objectives, and research metrics for various existing and potential programs.

THE FUTURE OF THE HUMAN-ANIMAL BOND AND HEALTHCARE

Although it is widely held that there are both physical and psychological health benefits of pet ownership, there have been few well-controlled studies. However, the more subtle benefits that may be objectively measured via lower drug dosages or blood cortisol levels, and may be investigated as possible adjuncts to conventional therapies in pain management. Recently, Olmert⁹ summarized findings that show blood oxytocin levels rising in both animals and people as they interact with each other. Oxytocin is thought to be associated with pair bonding and a reduction in fear or anxiety.

Another area of investigation with possible far-reaching implications is the human-animal bond effect as a broad alternative to conventional direct pain relief. Using a multidisciplinary approach, the human-animal bond programs associated with animal-assisted therapy may offer a significant role for select patients to minimize pain. For example, the activity of caring for animals, both small and large, assists people with arthritis by providing activities that requires them go outside and walk a dog or feed a horse. Select patients who possess the inherent “nurturing” attribute may have a more apparent pain tolerance while in the company of animals. This nurturing attribute of animals may be the key difference that separates the effect that animals may render to patients versus an inanimate or animate “distracter” that may temporarily alleviate pain.

There is a definite role for companion animals in the treatment of our military personnel in multiple treatment venues. Involving the animals as an adjunct to traditional treatment modalities has been shown to have

positive psychological and physical benefits for some patients during the healing process. Although much of the evidence that supports the use of animals is anecdotal, the empirical data is increasing with promising results.

For clinical staff interested in learning more about animal-assisted therapy programs, the *Department of Defense Technical Bulletin TB MED 4*³ is an excellent initial source for information and guidance.

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Dogs and Human Health/Mental Health: From the Pleasure of Their Company To the Benefits of Their Assistance

Jan Shubert, LCSW

FROM PETS TO ASSISTANTS

Although we tend to identify the 20th century as the time when dogs and animals in general were first used to provide assistance to people with a variety of physical and mental diagnoses, this actually is not the case. The first documented example of the therapeutic use of animals occurred in 9th century Gheel, Belgium, where animals were part of the “*therapie naturelle*” provided for the handicapped by members of the community.^{1(p7),2}

The first use of animals specifically for the treatment of the mentally ill occurred in late 18th century York, England.^{3,4} After the death of a Quaker in the inhumane conditions in what was then the York Asylum, a wealthy Quaker merchant, William Tuke, raised money to open the York Retreat in 1796 to care for the insane. Tuke’s methods were quite different from the coercive and punitive approaches in use at that time. Patients wore their own clothing and had the opportunity to work at crafts, read books, write, and wander the grounds, which contained a variety of small animals. The combination of the example set by the York Retreat, the continued efforts of the Tuke family to improve the treatment of the mentally ill, and a scathing report on conditions in British mental hospitals during the 1830s initiated gradual improvements in the overall treatment of the mentally ill.⁴

The first documented therapeutic use of animals in the United States took place during World War II at an Army Air Corps convalescent hospital in Pawling, New York. According to Bustad and Hines,^{1(p19)} the hospital functioned more as a rest home than a medical facility for patients suffering from “operational fatigue,” which is probably called posttraumatic stress disorder today. The facility provided both an academic program and the physical activity of working at the facility’s farm.

DEFINING SOME TERMS

Although the history of human-animal relationships is filled with tales of how animals, dogs in particular,

benefited humans, most of those examples were relatively informal, possibly even coincidental. The dogs did not receive any specific training, and there were no formal programs. In the 20th century, however, formal programs were developed to train dogs to provide a variety of services to humans.

Basically, there are 2 categories of dogs that provide assistance to people with disabilities: service dogs and therapy dogs. Although the phrase “assistance dog” is used frequently, and there is an organization called “Assistance Dogs International,” the term assistance dog has no meaning in law. A recent amendment to the Americans with Disabilities Act (ADA) (42 USC §12101-12213 and 47 USC §225, 611), which became effective March 15, 2011, defines a service animal as:

any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability....The work or tasks performed by a service animal must be directly related to the handler’s disability.⁵

Whether or not therapy dogs are covered under the amended ADA depends on the disability of their handlers, how they are trained, and how they are used, as specified in the definition presented above. It should be noted that the ADA clearly includes psychiatric assistance as a category for service dogs.

Ensminger defines a therapy dog and its work as:

...a dog that, with a handler, visits individuals or groups to provide some relief from an institution, such as a hospital, or condition, such as cerebral palsy or Alzheimer’s. Therapy dogs may be used one-on-one as part of a treatment program for an individual, which is often called animal assisted therapy (abbreviated AAT), but mostly therapy dogs in the United States today visit facilities to help or at least cheer up the populations of those facilities.^{6(pxii)}

The views expressed in this article are those of the author and do not reflect the views of the US Environmental Protection Agency, the US Army, or the US Army Medical Department.

Clearly, under the new ADA definition of service dogs, dogs used according to Ensminger's definition do not qualify as service dogs.

SERVICE DOGS

Service dogs, as defined in the amended ADA, assist individuals with a variety of physical disabilities, including vision impairments, hearing impairments, mobility disorders, and seizure disorders. As important as these services are to their recipients, the most important service by far is the companionship that the dogs provide, particularly to individuals who may have been experiencing considerable isolation because of their disabilities.

Service Dogs for the Visually Impaired

According to Ensminger,⁶ the first use of service dogs for the visually impaired dates to post-World War I Germany where dogs were trained to guide soldiers blinded during the war. In 1927, Dorothy Harris Eustis, an American living in Switzerland and breeding and training German shepherd dogs, learned of the German program and wrote an article that appeared in the November 5, 1927 edition of *The Saturday Evening Post*.⁷ Her article eventually led to the founding of the first American organization for the training of guide dogs for the blind, The Seeing Eye, in 1929.⁸ Since then, a number of other organizations have been established for the training of guide dogs for the blind, including Guide Dogs for the Blind and Leader Dogs for the Blind. According to Ensminger,⁶ there were approximately 9,000 guide dogs in the United States as of 1999, most of whom had been trained by the 3 organizations mentioned above.

Service Dogs for the Hearing Impaired

The first organization to train dogs to assist people who had hearing impairments was established as a result of one woman's efforts to replace a dog that had died. In 1973, Elva Janke contacted the Twin Cities Action News television program asking for assistance in training a dog to alert her to sounds that she could not hear.⁹ A trainer was found through the intervention of the director of the Minnesota Humane Society. Three years later, the American Humane Association in Denver, Colorado, established a national training center. In 1979, a separate organization, Hearing Dog, Inc, was established. The name was changed to International Hearing Dog, Inc after the organization placed a dog in Canada. Since its founding, the organization has trained and placed more than 1,100 hearing dogs, all of whom come from shelters. The dogs are trained to alert their handlers to a variety of sounds, including alarm clocks, telephones, doorbells, crying babies, sirens, and smoke alarms.¹⁰ According to Ensminger,⁶ there were approximately 4,000 hearing dogs in the United States as of 2001. Now, as with dogs

for visually impaired individuals, there are numerous organizations training and placing hearing dogs.

Service Dogs for the Mobility Impaired

Today, the efforts of service dogs are not limited to serving as eyes and ears for individuals with visual or hearing impairments, they also serve as arms and legs.¹⁰ Service dogs for those with mobility impairments can perform a number of tasks for their handlers, including retrieving or fetching specific items or dropped items, opening doors, turning lights on or off, and carrying backpacks. The larger breeds can also serve as braces to help stabilize ambulatory handlers, assist them in getting out of chairs, and even pulling wheelchairs.

Service Dogs for Those Suffering from Seizures

There have been reports that some dogs can sense physiological changes in their owners when a seizure is approaching and alert the owner ahead of time.⁶ This warning allows the owner to move to a safe place and prepare and/or take preventive medication. Such reports are primarily anecdotal in nature. In 1999, however, a British organization, Support Dogs, was reported to have trained 6 dogs to detect and indicate coming seizures, providing a warning ranging from 10 to 45 minutes before the seizure.¹¹ The study also indicated a reduction of seizure activity. More recently (2004), the University of Florida School of Veterinary Medicine conducted a study of 29 individuals who had epilepsy and also owned dogs. Nine dogs reportedly responded to their owners' seizures, and three of these were also reported to have alerted their owners before the seizure.¹² Nevertheless, there is skepticism in the scientific community that dogs can actually be trained to sense coming seizures.

THERAPY DOGS

As described earlier, there were informal efforts to include animals in the treatment of the mentally ill in the 18th and 19th centuries. In the 20th century, these efforts became more intentional. The therapist truly considered to be the true father of animal-assisted therapy, however, is Boris Levinson. He acknowledged that his discovery of the effectiveness of a dog in building rapport with a child client was purely accidental.¹³ The child and his mother arrived early for their appointment, before Levinson had time to confine his dog, Jingles. Until that time, Levinson had been unable to establish a relationship with the child, but Jingles quickly facilitated the establishment of a therapeutic relationship between Levinson and the child. Levinson went on to include dogs in many of his therapeutic sessions and to write and speak about the success of this new form of intervention. His initial efforts to present the results of his animal-assisted therapeutic efforts at professional conferences

were met with more than a little ridicule. Despite the skepticism with which Levinson's colleagues greeted his presentations, a survey he conducted with clinicians in the New York State Psychological Association indicated that more than one-third of the respondents had themselves used animals in their practices.¹⁴ Levinson persisted in his efforts to interest mental health professionals in the benefits of including animals in their therapeutic activities, publishing *Pet-oriented Child Psychotherapy*¹⁵ in 1969 and *Pets and Human Development*¹³ in 1973, as well as numerous journal articles. A principal reason for Levinson's persistence regarding the importance of human-animal relationships was his belief that humans had become totally alienated from each other and from nature.¹³

Another breakthrough occurred around the same time that Levinson was promoting the benefits of animal-assisted therapy. Samuel and Elizabeth Corson pioneered in the use of dogs, first in a psychiatric facility associated with Ohio State University and then with a nursing home population in the early 1970s.^{1,6(p104),14,16,17} Corson et al¹⁶ indicated that the introduction of the dogs into the treatment of patients previously unresponsive to a variety of different interventions increased social interactions among the patients and also improved patient/staff relationships. Subsequently, several studies were conducted between the late 1970s and the mid 1990s that not only verified the Corsons' results, but also made the mind-body connection, demonstrating the relationship between the stress relief provided by pets and improved cardiovascular health.¹⁴

Around the same time, 2 important organizations were established.⁶ Therapy Dogs International was founded in 1976 by Elaine Smith,¹⁸ an American nurse who had worked in England and observed how patients responded to visits by the hospital chaplain who was accompanied by his dog. In 1977, the Delta Foundation was founded in Portland, Oregon, by several medical and veterinary professionals who were interested in the effects of human-animal relationships. The organization became the Delta Society in 1981, and also focuses on training, certifying, and registering therapy and service dogs in addition to its continued interest in research into human-animal interactions.¹⁹

ANIMAL-ASSISTED ACTIVITIES AND ANIMAL-ASSISTED THERAPY

Over the years, numerous different terms have been used to describe the act of using animals to assist people. To simplify matters, the Delta Society divided the types of activities into 2 categories: animal-assisted activities (AAA) and animal-assisted therapy (AAT). In AAA,

specially trained professionals, paraprofessionals, or volunteers provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance the quality of life in a variety of settings without setting specific goals. AAT is an intervention, delivered by a health/human service professional with specialized expertise, in which an animal that meets specific criteria is an integral part of the treatment process. Key features include specified goals and objectives for each individual and measured practice.²⁰

The term "therapy dog" has been applied to dogs who provide both AAA and AAT interventions with individuals or groups. Therapy dogs can be trained to assist in a medical crisis (eg, fetching medication, dialing 911), with treatment (eg, alerting someone with intense startle reflexes to the approach of another person), with emotional reactivity (eg, physical contact to help ground someone with an extreme fear reaction), and with security (verifying safe situations, turning lights on for those suffering from posttraumatic stress disorder).²¹ Under specific circumstances, therapy dogs providing this type of assistance to individuals with mental disabilities also can be considered service dogs under the ADA. Ensminger⁶ points out that dogs also can empower individuals with panic disorder or agoraphobia to venture out into the world, and can help ground and orient someone with a dissociative disorder. There also are anecdotal reports that service dogs can be of assistance to children who have autism.

Animals also can be incorporated into therapeutic approaches that focus on an Eriksonian life stage approach.^{22,23} Fine suggests that AAI/AAT can be incorporated into therapeutic approaches to individuals as they move through Erikson's 8 stages of human development.

THEORETICAL BASES FOR AAT AND AAA

Kidd and Kidd²⁴ acknowledged the lack of an all-encompassing theory for the human-companion animal bond and examined the potential applicability of animal/animal, human/human, and human/object relations model theories for the development of a theory explaining the human-animal bond. After examining various theories in each model group, they concluded:

The best that can be said is that sometimes, under some circumstances, and in some ways, human/animal relationships are analogous to animal/animal, or to human/human, or to human/object relationships.^{24(p143)}

They called for research to establish a database that could be used to develop theories relating to the human/animal bond.

Kruger and Serpell²⁰ also discussed the lack of a unifying theoretical framework for human-animal relationships or animal-assisted interventions. They divided the various theories that have been proposed into 2 categories: those that are based on the intrinsic characteristics of the animals that contribute to therapy, and those that focus on the animals as tools that can foster client change. In the first category, they cite the “biophilia hypothesis,”* learning theory, and social mediation theories, attachment theory, object relations theory, social provisions theory, and nondirective or Rogerian theory.

In the second category, that of the animal as a tool to foster or facilitate client change, we find cognitive and social cognitive theory and role theory. Animals are seen as useful in changing such behavior because, unlike many people, their feedback is both quick and honest. In addition, working with animals can lead to increased feelings of self-efficacy and accomplishment, which, in turn, lead to more positive self-regard. In role theory, as opposed to role playing, a person actually takes on the new role and its responsibilities (eg, dog training in a juvenile detention center). Success in the new role is believed to lead to an improved self-image and self-confidence.

In discussing attachment, Bowlby stated:

To say of a child that he is attached to, or has an attachment to, someone means that he is strongly disposed to seek proximity to and contact with a specific figure and to do so in certain situations, notably when he is frightened, tired, or ill....The theory of attachment advanced is an attempt to explain both attachment behavior, with its episodic appearance and disappearance, and also the enduring attachments that children and older individuals make to particular figures.^{25(pp371-372)}

Following Bowlby then, the relationship that many children and adult pet owners have with their pets can be said to be a form of attachment behavior, particularly when the animal serves as a confidant and provides solace during times of stress. According to Crawford et al,²⁶ the aspects of attachment theory that are equally applicable to both human-human attachment and human-animal attachment include “emotional bond, goodness of fit, secure base, seeking proximity, and representational models.” To Siegel,²⁷ a relationship with a companion animal represents one of many potential social bonds.

*A hypothesis put forward by Edward Wilson, PhD, that humans evolved as creatures deeply enmeshed with the intricacies of nature, and that we still have this affinity with nature ingrained in our genotype. Information available at: <http://wilderdom.com/evolution/BiophiliaHypothesis.html>.

Among the aspects that contribute to the benefits of the human-companion animal relationship are the nonjudgmental characteristics of the animal’s regard for its owner, the childlike qualities of the animal (ie, neoteny), and the touching that is involved in the relationship (ie, it is akin to Rogerian therapy with the benefit of touch).

Parish-Plass,²⁸ in particular, provides an example of the application of attachment theory through the means of AAT in an innovative program for abused and neglected children in Israel. She describes how the use of AAT can allow abused and neglected children to form stable relationships with animals (ie, attachments) with the assistance of a therapist, thereby helping them to develop healthier ways of relating to others and, hopefully, reduce the likelihood of them becoming abusive and neglectful parents themselves.

On a lighter note, Beck and Madresh²⁹ compare attachments to romantic partners and attachments to pets, concluding that “pet owners experience more security in relationships with their pets than with their romantic partners.”^{29(p52)} Interestingly, this conclusion is at least partially confirmed by an Associated Press poll in 2010 that asked pet owners whom they would choose if one had to go: their significant other or their pet. The poll found that 14% of those interviewed (n=1,501, nationwide) would choose their pet!³⁰

EFFECTS OF HUMAN-DOG RELATIONSHIPS ON HUMANS

Discussions of the benefits of pet ownership, AAA, and AAT are frequently met with skepticism largely because of the relative paucity of scientific documentation (ie, randomized controlled trials) and the heavy reliance on anecdotal accounts. Over the last 25 years, a number of reviews of the state of research in the animal-assisted intervention field have been conducted. In 1984, Beck and Katcher³¹ reviewed claims of therapeutic benefits of pets and also examined the research approaches to test that hypothesis. They found primarily descriptive studies that presented but did not test hypotheses and lacked demonstrations of the benefits of treatment or a cause and effect relationship.

In 2008, Barker and Wolen³² conducted a review of research of the effects of both pet ownership and animal-assisted activities (including animal-assisted therapy) conducted since 1980 to see if anything had changed since the 1984 Beck and Katcher review.³¹ They reviewed 129 studies, most of which were still descriptive in nature, although they did note that significantly more experimental studies have been conducted, some of which they praised for the methodology utilized. They concluded that:

a few pockets of evidence do exist and appear to be growing. Pets appear to buffer the impact of stress on some owners, and may be associated with other health attributes such as increased physical activity...^{32(p492)}

A number of studies have examined the effects of human-dog relationships on physical health. Friedmann and colleagues,³³ Siegel,³⁴ and Anderson et al³⁵ found pet ownership (particularly dogs) benefits to include enhanced survival rates in individuals with cardiovascular disease, reduced need for physician visits, and reduced systolic blood pressure and plasma triglycerides. Allen and associates³⁶ found reduced physiological activity during the performance of stressful tasks when individuals were in the presence of their pet dogs. Odendaal³⁷ documented physiological responses when humans had positive interactions with dogs: β -endorphin, oxytocin, prolactin, β -phenylethylamine, and dopamine increased significantly among both humans and dogs; cortisol decreased significantly in humans, but not in dogs.

On the other hand, Grossberg et al³⁸ found increased blood pressures and heart rates when individuals were performing stressful tasks in the presence of their pet dogs. Garrity and colleagues³⁹ not only found no evidence of physical health benefits for elderly pet owners, but they actually found negative effects in the form of reduced human network support.

Regarding emotional well-being, Mugford and M'Comisky⁴⁰ conducted one of the earliest studies of the benefits of companion animals for the elderly, in this case budgerigars (ie, parakeets), and found increased social interaction as a result of having the birds. Barker and Dawson,⁴¹ Brickel,⁴² and Goldmeier⁴³ found that contact with a therapy dog or personal pet reduced depression and anxiety for those living in an institution or living alone.

Like the studies of physical effects of interactions with dogs, studies of psychological effects also were not uniformly positive. Ory and Goldberg,^{44,45} Miller and Lago,⁴⁶ and Zasloff and Kidd⁴⁷ found no differences in perceived happiness, psychological well-being, or loneliness between participants who owned pets and those who did not.

EFFECTS OF HUMAN-DOG RELATIONSHIPS ON THE DOGS

Numerous studies have been conducted on how dogs can be used to help humans and on the effectiveness of that help. Relatively few studies, however, have been conducted on the effects on dogs of providing such assistance. In 2000, Serpell et al^{48(pp417-426)} identified 7 potential animal welfare problem areas:

- ♦ Failure to provide for animal's behavioral needs
- ♦ Breeding or selection of animal-assistance animals
- ♦ Failure to consider animal developmental events and processes
- ♦ Use of inappropriate or inhumane training methods
- ♦ Having unrealistic expectations of the animals
- ♦ Using inappropriate equipment and facilities for the animals
- ♦ Inadequately trained end users

Serpell, Coppinger, and Fine also point out what they refer to as an ethical "tension between interests"^{48(p415)} in the use of dogs to assist humans. That can become an outright conflict of interest if the dogs experience pain, fear, or an inability to satisfy their own needs.

The different uses of dogs to provide assistance to humans all have their own potentials for turning the "tension between interests" into conflicts of interests. For example, service dogs tend to be on duty 7 days a week, 24 hours a day, resulting in the possibility of inadequate "down" time, as well as potential issues from wearing a harness for long periods of time and the potential for injuries from pulling a wheelchair. Resident therapy dogs in nursing homes and other residential facilities can also be expected to be on duty for long periods of time and potentially subjected to inappropriate handling/touching, as well as over-feeding and inadequate exercise. Visiting therapy dogs are taken in motor vehicles to visit nursing homes, schools, hospitals, and other facilities, often in crates. The transportation itself can be stressful for some animals, who also may be subjected to inappropriate handling as well as emotional stress transmitted from distressed humans, such as those in hospitals. Therapy dogs in private practices, even when working with loving and loved owner/therapists, can experience stress if sufficient provisions are not made for them to retreat to a place where they will be undisturbed for periods of time. They also can be exposed to emotional stress transmitted by distressed clients. Preventing conflicts of interest between dogs and their roles in assisting humans requires effort at a number of levels.

A good starting point is the source of the animals. In many cases, service dogs are bred by the organization that is training and placing the dog, or they come from shelters, depending on the type of service to be provided. Some dogs also are purchased or donated. Service dogs for the visually impaired are often bred by the

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organization. Concerns have been raised about the early life of these dogs^{49,50} as they may spend their first year moving from a kennel in which they were born, to a temporary family for socialization, back into the kennel for extensive training, and then placement with a (hopefully) permanent human partner. Serpell and colleagues⁴⁹ believe that these environmental changes can have adverse psychological effects on the dogs and may contribute to the high failure rate in service dog training. At the same time, however, Fallani et al⁵¹ examined the bond formed by a service dog with its blind owner and compared this bond with that formed between pet dogs and their owners. Some of the pet dogs actually showed higher anxiety than did the other dogs. In their study, guide dogs were able to form deep attachments to their blind owners in spite of their previous relationships with puppy walkers and trainers.

There are also concerns about the breeding practices within some organizations because of the inbreeding tendencies that may result in the desired fairly uniform appearance and behavior, but also result in a variety of genetic disorders. Another ethical question relates to the dogs bred to be service dogs who do not make it to training because of early diagnosis of genetic problems, or those who do not make it through training because of temperament or personality issues. In the case of the latter, at least one of the breeding/training/placement organizations adopts these animals out. Whether this is the case with all of the organizations that breed their own dogs is unknown. In the case of the former, the severity of the genetic problem may affect what happens to the puppy. But, the ethical question remains regarding breeding practices that result in significant numbers of dogs with genetic defects.

Shelters are another source of service (particularly hearing dogs) and therapy dogs. On the one hand, this is a significant benefit for dogs that otherwise might be euthanized. On the other hand, the frequent paucity of information about the backgrounds of shelter animals does raise the question of how to identify animals appropriate for service or therapy roles.⁴⁸

All of these points raise a number of ethical issues relating to the use of animals, particularly dogs, to provide service and other forms of therapeutic assistance to humans.

WHERE DOES THE FIELD GO FROM HERE:

SUMMARY, CONCLUSIONS AND SUGGESTIONS

We clearly *use* dogs to meet a large variety of human needs, both physical and emotional, frequently not only

neglecting the effects on them, but not even recognizing them. For example, as Butler so eloquently states:

Nothing else dogs do compares to the kinds of intrinsically stressful social interaction that takes place when they visit clinical, educational, or posttrauma situations. No other canine-related event, no sport nor competition requires a dog to enter the intimate zones of unfamiliar humans and remain there for several minutes of petting and hugging.^{52(p31)}

Butler also points out that the act of hugging, one so accepted in many parts of human society, is one that not only is foreign to a dog's nature, but is also an act that dogs can perceive as one of dominance and experience as stressful. Yet hugging is encouraged in countless service dog and AAA/AAT interactions with dogs.

So, what direction should the field take in the future? First, given that service dog and AAT/AAA activities are not likely to end, more must be done to safeguard the physical and mental health of the dogs. How can animals be protected from potential exploitation and harm? A good starting point would be subscribing to and guaranteeing the "5 freedoms," which are accepted as determinants of animal welfare^{49(pp482-483)}: freedom from thirst, hunger, and malnutrition; freedom from discomfort; freedom from pain, injury, and disease; freedom from fear and distress; and freedom to express normal behavior, including socialization with its own species.

The next step is for trainers and handlers to be able to recognize the signs of stress in their puppies and dogs. There are numerous training courses, websites, and training manuals that can provide this information. Further, more needs to be done to screen shelter and privately owned animals to ensure that the dogs being trained for various service dog and AAA/AAT activities truly have the appropriate temperaments for this work. Last, more needs to be done in the area of initial and follow-up training by the service dog placement organizations to ensure that the dog recipients have a clearer understanding of how their dog communicates with them (ie, dog body language) and that their expectations of their dog are appropriate. Bustad and Hines¹ included a role for veterinarians in helping to ensure the well-being of service and AAT/AAA dogs.

It also is clear that the future of the service dog and the AAT/AAA field needs to include a strong focus on research, not only research into the benefits of the association for humans, but research into the effects of this association on dogs. Beck and Katcher⁵³ make a number of suggestions for future research, including combining

the biophilia hypothesis with social support theory to broaden the scope of human-animal relationship research to incorporate the larger natural environment. This approach connects back to Levinson's¹³ belief that humans had become too divorced from contact with the natural world. They also recommend further research into the physiological effects on humans of associating with dogs and into the physiological effects of the relationship on the dogs. Additionally, as Garrity et al,³⁹ Ory and Goldberg,^{44,45} Miller and Lago,⁴⁶ and Zasloff and Kidd⁴⁷ found, AAT/AAA does not always have positive results. It is important to identify populations for whom the relationship might not be helpful to avoid causing harm to those individuals and also to avoid subjecting dogs to potentially negative and even harmful situations.

Regardless of which research methodology is used, as Beck and Katcher⁵³ have emphasized, it must be interdisciplinary in nature, involving not only mental health and medical professionals, but also sociologists, ethnologists, animal behaviorists and trainers, and likely numerous other professional communities. Our awareness of the extensiveness of the human relationship with dogs may have been awakened with the finding of the site of the joint burial of an ancient human and a puppy approximately 12,000 years ago,⁵⁴ but we may only have scratched the surface of the real meaning of the relationship.

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The lifesize statue of a proud service dog greets all who visit the facilities of America's VetDogs in Smithtown, New York (see article on page 8). Photo courtesy of LCDR Kathleen L. Watkins, USPHS.

Research on Benefits of Canine-Assisted Therapy for Adults in Nonmilitary Settings

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ABSTRACT

Research has examined the physiological and psychosocial impact of animal-assisted activities (AAA) and animal-assisted therapy (AAT). The current review article summarizes the benefits of AAA and AAT for hospitalized patients with medical disorders, psychiatric patients, and residents of nursing homes and long-term care facilities. The literature regarding inclusion of animals in business and organizational settings is also reviewed. Although there is clear evidence of improved physical and psychological health from AAA and AAT in the civilian population, there is a dearth of published findings of the evaluation of such benefits for military personnel.

There is a growing body of literature that has examined the physiological and psychosocial impact of pet ownership, animal-assisted activities (AAA), and animal-assisted therapy (AAT) employed in a variety of settings and with various patient populations such as those with cardiovascular disease, cancer, stroke, dementia, and psychiatric disorders. Additionally, new interest is seen within the workplace. In general, there is evidence demonstrating improvement in anxiety, fear, depression, and loneliness with associated physiological changes following animal-assisted therapy which has important implications for use of such therapy with military personnel suffering from combat stress, posttraumatic stress disorder, and other disorders similar to those listed above. Although there are several AAT programs employed by the military, there have been no published empirical investigations of these programs. The purpose of this paper is to present an overview of research conducted in nonmilitary settings including hospitals, psychiatric facilities, nursing homes/assisted living centers, and the workplace.

BENEFITS OF AAT FOR HOSPITALIZED PATIENTS WITH MEDICAL DISORDERS

The benefits of AAT for patients hospitalized with heart failure was investigated by Cole¹ who compared a 12-minute AAT visit with a 12-minute volunteer only visit and treatment as usual. Seventy-six patients were randomly assigned to one of the 3 groups and physiological and self-report measures of anxiety were measured. Change from baseline indicated a significant decrease in systolic pulmonary artery pressure and pulmonary capillary wedge pressure both during (8 minutes) and after (16 minutes) the AAT visit compared with the other 2

study groups. Compared to the volunteer only group, significant decreases in epinephrine and norepinephrine levels were measured both during and after AAT. There was also a significantly greater decrease in reported anxiety for the AAT group compared with those who received the 12-minute volunteer visit as measured by Spielberger's State-Trait Anxiety Inventory.*

A study conducted with a similar sample of patients with a primary diagnosis of heart failure employed a hybridized intervention combining AAT and an early ambulation program, thus deemed canine-assisted ambulation (CAA).² Sixty-nine hospitalized cardiac patients, physician-ordered and approved for ambulation, were prompted to ambulate by a restorative aide. If the patients refused, they were approached a second time with the proposal of ambulating while accompanied by a therapy dog. To prevent bias from study effects, consent to have the individual's data be included was obtained after the ambulatory activity or after the patient's second refusal. Distance ambulated (in steps) was calculated by pedometer, and patient satisfaction with CAA was measured by a Likert scale survey composed of 5 items. As compared to a stratified historical sample of which 28% of patients refused ambulation, only 7.2% of the study sample refused ambulation completely. Moreover, 18.9% of the experimental group patients reversed their initial refusal to ambulate when given the opportunity to participate in CAA. Those that engaged in CAA walked almost twice (96% more) as many steps as the ambulating patients

*A commonly used measure of trait and state anxiety. Description and Information available at: <http://www.apa.org/pi/about/publications/caregivers/practice-settings/assessment/tools/trait-state.aspx>.

in the historical group. Self-report data indicated that the participating patients were satisfied with CAA experience. For other patient populations, such as postoperative, stroke, and neurologically impaired outpatients among whom ambulation is encouraged, this study suggests CAA may be motivational and an effective adjunct to existing ambulation and patient care routines. Furthermore, as early ambulation has been associated with decreased length of stay and thus reduced patient care costs among cardiac patients, the use of CAA may additionally improve similar outcomes.

Another study evaluated a one-hour AAA session with oncology patients while they were receiving chemotherapy in a day hospital.³ Self-report measures of anxiety, depression, somatic symptoms, and aggression were collected as well as heart rate, arterial oxygen saturation, and blood pressure. The AAA session was divided into three 20-minute segments involving patients watching the dog exercise with the handler, playing with the dog, and feeding or holding the dog. Unlike the controls, patients in the AAA group demonstrated a significant decrease in depression and increase in arterial oxygen saturation. Significant reductions in anxiety, aggression, and blood pressure were also reported however no group differences were noted. Johnson,⁴ investigating mood and self-perceived physical and emotional health, compared AAA visits to volunteer visits and reading group visits that were all 15 minutes in duration, 3 times a week for 4 weeks immediately prior to radiation treatment. Changes in mood assessed before the first and after the last session were compared within and between groups. No significant differences were found for any of the subscales of the Profile of Mood States or physical and emotional health ratings, however, trends of decreased anxiety and improved emotional health were reported. The lack of significant changes and between group differences may be due in part to the small sample size ($n=10$ for each group), disease progression, or time of assessment. An exit survey revealed that some patients in all groups rated the intervention as helpful and the majority indicated they would recommend it to another patient.

BENEFITS OF AAT FOR PSYCHIATRIC SYMPTOMS AND SETTINGS

While a comprehensive literature search yielded no published research on the effects of AAT in military psychiatric settings, findings from civilian studies provide support for investigating this complementary approach with military populations and suggest benefits that may extend to military personnel experiencing psychiatric symptoms. This section will focus on research investigating the effect of AAT on adult civilians receiving psychiatric care and adults under stressful conditions.

A number of studies report benefits of AAT in inpatient psychiatric settings. At Virginia Commonwealth University's Center for Human-Animal Interaction (CHAI), researchers completed a series of studies exploring the effect of AAT on dysphoria in hospitalized psychiatry patients. In their initial study of 231 acute psychiatric patients participating in a single session of traditional recreational therapy (RT) and RT incorporating a therapy dog, the investigators found a significant reduction in anxiety following both conditions.⁵ However, reduced anxiety in the traditional TR condition was only found for patients with mood disorders compared with anxiety reductions in the AAT group that were found for those with mood disorders, psychotic disorders, and cognitive and other disorders. Only the patients with primary substance abuse disorders showed no significant change in anxiety, under either condition, perhaps due to their acute stage of physiological withdrawal.

The CHAI researchers also conducted 2 studies investigating the effect of AAT on patient dysphoria prior to undergoing electroconvulsive therapy (ECT). In the first study, 42 patients were placed in rooms with and without a fish tank prior to ECT and were assessed pre- and postcondition on measures of fear, anxiety, depression, frustration, blood pressure, and heart rate.⁶ No significant differences were found for either condition on any of the variables, although a trend toward reduced anxiety was noted. A follow-up study was conducted with 35 ECT patients, comparing a single 15-minute session of AAT involving a therapy dog with 15 minutes of reading/looking through magazines on anxiety, fear, and depression.⁷ A significant 37% reduction in fear and (nonsignificant) 18% reduction in anxiety were found in the AAT condition. Although no significant differences were found for anxiety or depression, the majority of patients reported on a postintervention interview that they believed AAT reduced their anxiety and depression.

Other researchers investigated the effect of 4 weeks of AAT on 69 hospitalized psychiatric patients and reported increased social behaviors and responsiveness to surroundings in the AAT group compared with a control group.⁸ Similarly, increased interactions associated with 4 weeks of AAT, compared with photographic sessions, were reported for a sample of 37 elderly psychiatric patients.⁹ Addressing the appeal of AAT for hospitalized psychiatric patients, another study found that including AAT in occupational therapy groups significantly improved group attendance and attracted isolated individuals to the group regardless of diagnosis.¹⁰

Focusing specifically on patients diagnosed with schizophrenia, researchers in Spain conducted a study of 21

schizophrenic patients assigned to a treatment group with or without AAT.¹¹ While the AAT group showed significant improvements in social contact and positive and negative symptoms after 25 sessions, there were no significant differences between the groups. However, the study was limited by the small sample size and a 14% dropout rate. An Israeli study of AAT with 20 elderly schizophrenia patients residing in long-term care facilities also reported benefits after 12 months of weekly AAT.¹² Those in the AAT group had significantly improved social functioning compared with the control group.

Other studies have focused on the effect of AAT on depression. A recent meta-analysis reviewed these studies to determine the effectiveness of AAT in reducing depressive symptoms.¹³ Focusing on studies that included randomization, a control or comparison condition, and self-report measure of depression, the authors reported a significant, medium effect size based on 5 studies meeting their inclusion criteria, concluding that AAT is associated with fewer depressive symptoms.

While most of the AAT interventions in studies with psychiatric populations involve companion animals, typically dogs, Berget and colleagues¹⁴ explored the effect of a 12-week intervention with farm animals on self-efficacy, coping ability, and quality of life on 90 Norwegian patients with a variety of psychiatric diagnoses. Results indicated significant improvements in self-efficacy and coping ability, but not quality of life 6 months following the intervention for those in the treatment group compared with the control group.

As part of a major longitudinal study (the Study of Transition and Recovery Strategies) conducted in Oregon and Washington on individuals' recovery from mental illness,¹⁵ perceptions of the roles pets played in recovery from serious mental illness were qualitatively analyzed. Interviews with 177 pet owning individuals revealed perceptions that pets assisted in individuals' recovery by "(a) providing empathy and therapy; (b) providing connections that can assist in redeveloping social avenues; (c) serving as 'family' in the absence of or in addition to human family members; and (d) supporting self-efficacy and strengthening a sense of empowerment."^{14(p430)}

The above studies provide evidence of benefits of AAT with clinical samples of civilian adults with psychiatric symptoms or disorders which may extend to active military and veterans with similar symptoms and disorders. The accumulating civilian literature serves to emphasize the dearth of research conducted with military samples. Similarly, the civilian research supporting the

role of pets and AAT as buffering the impact of stressful events has particular relevance for the military population, and yet no studies have been published with military samples.

A series of studies conducted by Allen and colleagues provide evidence of the positive effect of pets on cardiovascular reactivity in response to stressful conditions. Studying 45 female dog owners completing a mental stress task with their dog, close friend, or alone showed little or no cardiovascular stress reactivity during the task with the dog present, but significantly increased activity with the close friend present.¹⁶ In a related study of 240 pet-owning and non-pet-owning married couples, pet (dog or cat) owners had lower resting heart rate (HR) and systolic and diastolic blood pressure (SBP and DBP); showed less HR, SBP, and DBP reactivity during psychological and physiological stress tasks; and showed faster return to baseline than non-pet owners.¹⁷ For pet owners, lowest physiological reactivity and the quickest return to baseline occurred when the pet was present, compared with when a spouse or friend was present. Adding further support to the stress-buffering effects of pets, Allen and colleagues¹⁸ randomly assigned hypertensive stock brokers starting angiotensin-converting enzyme (ACE) inhibitor therapy to acquire a pet or to a 6-month wait list control condition. Pet owners showed higher performance on a mental task and lower physiological reactivity (HR, BP, and renin activity) than those in the control condition. The ACE inhibitor therapy significantly reduced only resting BP.

Also looking at the buffering effect of pet presence on physiological response to stress, other researchers found pet presence was associated with lower blood pressure during a stressful task for older hypertensive adults,¹⁹ and reduced HR and mean arterial pressure in a sample of normotensive adults who completed mental stressors.²⁰ An Australian study found no effect of dog presence on cardiovascular responses to stress, but reported a cardiac autonomic profile most favorable for dog owners when a dog was present and for non-dog owners when a dog is absent.²¹ A more recent exploratory study assessed autonomic, endocrine, and neurophysiologic stress indicators in a small group of healthy adult dog owners interacting with their own or an unfamiliar therapy dog following a mental stress task and reported consistent patterns of relaxation shown in cortisol, HR, BP, brain wave activity, and self-reported anxiety and stress responses.^{22,23} Adding further physiological evidence of the relaxation effect of AAT, Barker and colleagues²⁴ reported reduced salivary and serum cortisol in healthcare professionals, in the absence of a stress task, following as little as 5 minutes of AAT.

BENEFITS OF AAT FOR RESIDENTS OF NURSING HOMES/ LONG-TERM CARE FACILITIES

There are a number of empirical studies that have been conducted with residents of long-term care facilities. Research suggests that the use of AAA or AAT with this population may reduce depression²⁵⁻²⁷ and increase social interaction.²⁷⁻³² For example, Fick²⁸ evaluated social interaction in 36 residents in a nursing home care unit at a Veterans Administration medical center. Dogs were present for 15 minutes at the beginning or end of four 30-minute group therapy sessions. Behaviors were assessed 15 times during 10 minutes with and without the dog per session. Both verbal and nonverbal person interactions doubled when the dog was present compared to observations recorded when the dog was not present. Similar findings were reported for 15 nursing home residents randomly assigned to treatment as usual, pet-facilitated psychotherapy, or no treatment.²⁷ Following 4 weeks of two 45- to 90-minute sessions per week, social interactions in the pet therapy condition were twice that of the no pet group, and significant reductions in depression were reported for the treatment as usual and pet therapy group. Another study measured changes in mood in residents of nursing homes with a visiting dog, with a resident dog, and without a dog.²⁶ The Profile of Mood States questionnaire was administered prior to the dog being introduced to the facility and again at five 3-month intervals. Significant mood changes were reported by residents with a dog living at the facility including decreased tension, confusion, depression, and fatigue. A decrease in fatigue was also reported by residents of the facility with a visiting dog. The control group exhibited significant decreases in depression, and increases in vigor were reported by residents in all 3 groups.

Additional studies have focused on loneliness in the elderly. Banks and Banks³³ evaluated loneliness in 45 long-term care facility residents randomly assigned to three 30-minute AAT sessions per week, one 30-minute AAT session per week, or no AAT. Sessions were conducted for 6 weeks and the UCLA Loneliness Scale was administered before the first and last session. Significant reductions in loneliness scores were observed for both the one and 3 sessions per week AAT groups compared to control, however, there was no difference between the 2 AAT groups. A follow-up study³⁴ was designed to compare the relative contribution of socialization and human-animal bond as the means by which AAT reduces loneliness. Eighteen residents received individual AAT sessions (human-animal bond) and 19 residents received group AAT sessions (human-human bond) with 2 to 4 participants. Although a decrease in loneliness for both groups was measured after 6 weeks of weekly

30-minute sessions, only those residents receiving individual AAT sessions reported a statistically significant reduction. The investigators suggest the lack of facilitation of human-human socialization in this study might be due to subject/setting characteristics such as hearing loss, incompatible backgrounds, or established familiarity between residents.

Several studies have investigated possible benefits of pet presence and AAT for those with Alzheimer's disease and dementia, specifically (see Filan and Llewellyn-Jones³⁵ for a review). Using an observation checklist, one study³⁶ reported an increase in the number of total social behaviors in 12 Alzheimer's patients when pets were present in an institutionalized setting, and another³⁷ found less verbal aggression and anxiety in a sample of 64 Alzheimer's patients living at home and exposed to companion animals compared to those not exposed. No significant differences were found in cognitive decline or frequency of reported psychiatric, mood, or psychomotor disorders. However, secondary analyses found those more attached to their pets had significantly fewer mood disorders. An Australian study with 14 dementia patients in a psychiatric unit reported no differences in daily functioning and blood pressure, but decreased heart rate and ward noise was found during AAT over a 12-week period.³⁸ While another study with institutionalized patients with Alzheimer's disease reported increased socialization behaviors, no significant differences were found on physiological stress indicators.³⁹ A more recent Japanese study⁴⁰ involved semistructured interviews with 8 elderly women with varying stages of dementia who participated in AAT twice a month for 2 years. Themes pertaining to the women's AAT experience included the ability to develop interest in self, others, and the environment resulting from the calming effect of AAT and the opportunity to interact with the volunteer component of the AAT team.

The accumulating evidence supporting the effectiveness of AAT in mediating the physiological stress response, reducing anxiety and depressive symptoms, and increasing social behaviors in civilian populations underscores the need for testing these effects with military populations. AAT is practiced globally and is typically provided by community volunteers who have trained their dogs, or other pets, and have met the requirements for therapy dog certification by an external credentialing organization. Thousands of civilians, both clinical and nonclinical populations of adults and children, participate in AAT each year. Extending the benefit of AAT to military personnel represents a low-cost, therapeutic intervention with powerful potential and virtually no side effects. While the incorporation of AAT into treatment

programs for active duty and veterans with anxiety and depressive disorders may appear most obvious, the potential of AAT to mediate stress associated with physical disabilities and acute and chronic illnesses remains largely untested and worthy of evaluation.

ANIMALS AND THEIR INCLUSION IN BUSINESS AND ORGANIZATIONAL SETTINGS

As has been demonstrated, there is an emerging interest in including animals in hospitals, nursing homes, and other healthcare facilities,^{24,41} but few empirical studies have looked at the effect in the business setting. Companies such as Google, AOL, Autodesk, Proctor and Gamble's Pet Care division IAMS, and others either allow animals in the workplace or in a nearby dog care facility. Griffin⁴² reports anecdotal evidence that organizational support of this kind creates positive benefits such as lower worker turnover rates and more productive and satisfied employees. Findings from a 2003-2004 survey by The American Pet Products Manufacturers Association,⁴³ a not-for-profit trade organization serving the interests of pet product manufacturers, also support the inclusion of pets in the business setting. Seventy-three percent of those surveyed believe having pets in the workplace create a more productive environment; 27% believe they reduce absenteeism; 100% say they relax employees; 73% believe pets increase creativity of employees; and 96% believe pets create a more positive environment than not having them present.

Using an author-developed questionnaire, Wells and Perrine⁴⁴ surveyed employee perceptions in several small companies permitting pets. Eighty-four percent of employees who brought pets to work in these companies responded and all were business owners or managers. The greatest perceived benefit was a lowering of stress, with some suggesting improved health and organizational satisfaction.

In 2004, the American Psychological Association began presenting awards for healthy workplace settings. The companies were drawn from many types of industries representing new work-life benefit programs, such as those directly benefiting employees, supporting families, and encouraging healthy practices. One Vermont electronics company permitting pets in the workplace was found to be appropriate for this yearly recognition. "The company tries to build a close-knit team that is motivated to be productive...Every time we hire an employee, it's like bringing in a new family member" indicated Don Mayer, owner of the company.⁴⁵

Product advertising and the entertainment industry have also used animals to portray characteristics deemed

important to the company or product.^{23,46-49} Classic images of well known US and global icons, including Lassie, Rin Tin Tin, Benji, Garfield, Felix the Cat, Mighty Mouse, Bugs Bunny, and Mickey and Minnie Mouse, signify strength, love, connection, and identity.⁵⁰ These images have been used primarily for entertainment purposes but they have also been used to brand their products.^{51,52} Examples of animals used as brands are the gecko lizard for the US insurance company GEICO, the yellow tail kangaroo for the Australian vineyard Yellow Tail, the greyhound for Greyhound Bus in the United States and Canada, and the winged griffin for Perugina European Chocolate.⁵³ Permitting pets in the workplace takes such branding one step further, perhaps in an attempt to solidify the positive attributes associated by their brands and exemplify organizational culture values.

The increased acceptance of pets in the workplace may be explained in part by the research of Holbrook and colleagues.⁵⁴ They found the human-animal relationship to be more than pet as an object of ownership. These researchers found that consumers' relationships with animal companions are not necessarily a means to an end. This market research also found that buying pet products and services suggests that pets are now perceived as sacred rather than as possessions.

Two other studies using student samples looked at animals in a simulated workplace setting. The first study by Perrine⁵⁵ surveyed undergraduate students using a questionnaire and picture slides of offices with and without dogs and cats. While no significant differences existed between dogs and cats, there were some interesting findings. Students perceived that the presence of the animal in the office enhanced an occupants' mood and social interaction. They also perceived the office to be less professional, less busy, less clean and safe. The second study was an experiment conducted by researchers at Central Michigan University. In looking at work team collaboration, they found that those teams that had a dog present rated teammates higher in trust, cohesion, and intimacy.⁵⁶

A recently completed preliminary study conducted in the workplace setting investigated the effect of employees' dogs' presence at work on stress and organizational perceptions.²² Comparisons were made between employees who bring their dogs to work, employees who do not bring their dogs to work, and employees without pets on physiological and perceived stress, perceptions of job satisfaction, organizational affective commitment, and perceived organizational support. Among the key findings was that the 3 combined groups scored significantly

higher on multiple job satisfaction subscales than the reference norm group for these scales. No significant differences were found between the groups on physiological stress (measured by early morning cortisol levels) or perceived organizational support. Although perceived stress was similar at baseline, stress was lower for the group with their dogs present and increased for owners without their dogs present and the non-pet owner groups over the course of the day. Interestingly, the group who do not bring their dogs to work had significantly higher stress levels at the end of the day than the group with their dogs present. A significant difference was found in the stress patterns for the group who bring their dogs to work on days their dogs were present compared with days their dogs were absent. On days without their dogs, owners' stress increased throughout the day, mirroring the pattern of the group who do not bring their dogs to work.

Given research momentum from a variety of disciplines as identified in the previous section, Barker's⁵³ conceptual research called for more interdisciplinary focus on this important and pioneering focus. His article integrated the research of psychology, social psychology, medicine, veterinary medicine, business, communication, management, and marketing, calling for future research in areas including:

- ♦ Communication among and between employees and between employees and managers when companion animals are present in the workplace...
- ♦ Companion animals as a form of social support that does or does not buffer stress in the workplace...
- ♦ Companion animals in the workplace as a means to increase or decrease their employee owners' health and quality of work life...
- ♦ The welfare of the animal in the workplace...

Other settings are also identified as an important next step in this research area.^{53(pp309-312)}

While no published studies have investigated the impact of pet presence in military settings, the research presented in this section suggests a number of implications, including dogs in theater, that warrant future investigation and comparisons. Many organizations in the business and healthcare areas have developed policies for allowing animals to accompany their owners to work. Perhaps the military could investigate the possibility of this kind of activity as a beginning point. It would also

be possible to investigate similar variables identified above. The stress, communication, health, and well-being of the Soldier and the animal are prime opportunities for future study.

SUMMARY

There is substantial evidence of improved health and well-being of individuals in various health care and business settings through animal-assisted intervention. The research reviewed above demonstrates both physiological responses (stress-buffering effect) and psychosocial improvements as a result of human-animal interaction. The evaluation of such outcomes needs to be expanded to military personnel. There are a number of venues in which animals are employed in the military (several of which the authors will describe in subsequent articles), the benefits of which are largely unknown.

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The Effects of Animal-Assisted Therapy on Wounded Warriors in an Occupational Therapy Life Skills Program

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ABSTRACT

Animal-assisted therapy (AAT) has gained much attention in civilian and military health care. Evidence supports its benefits with varied populations with diseases and disabilities, but no research has been done with injured or ill service members. This pretest, posttest nonrandomized control group study evaluated the effects of AAT on Warriors in transition (N=24) attending an Occupational Therapy Life Skills program with the long-term goal of improving their successful reintegration. Although significant differences were not found between the groups on most measures, anecdotal reports by participants and observers indicate that participants eagerly anticipated being with the therapy dogs, expressed pleasure and satisfaction with the experience, and regretted seeing it end. There were significant correlations between mood, stress, resilience, fatigue, and function at various measurement points. This is the first study to formally assess the benefits of AAT with wounded service members in garrison. Suggestions for future research are provided.

Since 2007, the US Army has managed the care of several thousand service members (SMs) with injuries and diseases through the US Army Wounded Warrior Program.¹ A major component of the Wounded Warrior program are the Warrior Transition Units (WTUs) located throughout the country. There are currently 29 Army installations with WTUs whose members have polytraumatic injuries with combined diagnoses including traumatic brain injury, posttraumatic stress, depression, burns, and limb amputations. Because of the complexity of these diagnoses, SMs may remain on active duty within the WTU for many months, up to 2 years, pending resolution of medical and other issues. It is the duty of SMs to heal, followed by either return to active duty or transition to veteran status. While at a WTU, SMs receive many services including Occupational Therapy (OT) Life Skills programs.

According to the Office of The Surgeon General, occupational therapists primarily provide services to wounded Warriors in transition (WTs) during the rehabilitation phase of the comprehensive transition plan with overlap in the earlier phases of assessment and goal setting.² According to this plan, the role of the occupational therapist and certified occupational therapy assistant is to:

assess all WTs and provide functional interventions as needed to improve WTs' physical, cognitive, psychological/behavioral, and vocational capacity to perform daily self-care, work and leisure activities. Occupational therapy services include professional interventions to promote WT goal setting, life skills development, advanced educational classes, consultation and coordinator for work rehabilitation, community and work reintegration activities.^{2(p1)}

It is the goal of the OT Life Skills program to support the reintegration of WTs, either within the Army or in their return to civilian life. Interventions by occupational therapists in WTUs have primarily focused on life skills and work reintegration programs. The programs typically facilitate development of abilities in daily organization and time management; personal health including sleep, medication management, healthy eating and avoiding addictions; stress management and relaxation techniques; leisure exploration and development; communication and relationships; conflict resolution skills; money management; career exploration and planning; educational, prevocational and work readiness training; and vocational reintegration. Intervention strategies include psychoeducational programs, activity and task analysis, compensatory cognitive retraining,

biofeedback, adaptive skills training, rehearsal, routine and habit development, personal coaching, environmental modifications, and conflict resolution.³

Historically, life skills programs have been used in the treatment of acutely and chronically ill psychiatric patients in both civilian and military settings.⁴⁻⁸ In 1974, Army occupational therapists established a Life Skills Development Program for psychiatric inpatients at the Eisenhower Army Medical Center, Fort Gordon, GA. This program was later considered an “evolving treatment approach” in occupational therapy.^{5(p35)} Research on life skills programs has yielded positive effects for participants. One study examined the effects of a life skills program with homeless individuals residing in shelters or supportive housing.⁴ This unique population presents with “diverse life skill needs related to living independently”^{4(p190)} and often displays occupational performance deficits related to finances, housing, personal care, as well as difficulties associated with satisfying their basic needs and health concerns. The life skills program was uniquely designed to meet the needs of 3 distinctively different groups: (1) homeless youth without families or employment skills, (2) female victims of domestic violence in need of finance management, and (3) individuals with mental illness in need of food and nutrition knowledge and skills. Of the 73 attendees, 32 completed the program with a resultant 20 (62%) exhibiting increased mastery scores following completion of the program of significant difference between pre- and posttest scores. In a case study of a homeless youth, life skills such as communication skills, decision making, money management, study skills, as well as aspects of work and relationships, were provided by occupational therapists.⁸ Upon completion of the life skills program, the individual was able to successfully implement specific skills in the real world. In another study, researchers measured the impact of a 12-week life skills program, the Bridge Program, for adults with psychiatric disabilities.⁹ The researchers noted that many individuals with psychiatric disabilities whose symptoms were successfully managed with medications still lacked the requisite knowledge, skills, and confidence to pursue and gain access to college and technical education programs. On a postintervention survey, 86% of participants indicated that the Bridge Program facilitated improvement in academic skills and preparation for future educational pursuits; 12 of the 18 participants enrolled in higher education courses.⁹ Finally, a series of 3 life skill program modules were provided to recipients of mental health services at the Royal Brisbane and Women’s Hospital (Australia).¹⁰ Modules included education on nutrition, healthy eating, and the evaluation of food labels; identification of health risk factors; and

strategies by which to increase one’s participation in social, intellectual, creative, and physical activities. Initial feedback indicated that 34 of 35 participants found the program useful, interesting and educational.¹⁰

The strategies implemented in these programs focus on skill development, adaptation or compensation; the success of these efforts often depends upon the psychological and emotional well-being of the individual service member. Warriors in Transition experience multiple stressors as they receive medical care and process information critical to their future plans. The interaction between humans and animals, primarily dogs, has been demonstrated to promote relaxation, calm, and optimism in critical care medical settings, and reduce anxiety and fear in psychiatric patients.¹¹ The Delta Society, a recognized leader and research sponsor for animal-assisted therapy (AAT), defines the treatment as “a goal-directed intervention directed and/or delivered by a health/human service professional with specialized expertise, and within the scope of practice of his/her profession. AAT is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning.”^{12(p1)} The primary ways in which AAT occurs are: (a) as companions to individuals living independently, (b) in residential institutions for companionship and stimulation, and (c) as visitors in nonresidential settings for stimulation of interaction and interest.¹¹ The preferred choice of mammal used in AAT is the canine because dogs are very social, dependent, and trainable creatures.¹³ They should be “alert, bright, happy, healthy, and playful without being too rowdy... even-tempered, good-natured, and willing to withstand travel and environmental stress.”^{13(p73)}

Historically, the US military has promoted the therapeutic use of animals with wounded Soldiers. In the years that followed World War I, dogs were used with psychiatric patients at St Elizabeth’s Hospital in Washington, DC.¹¹ More recently, AAT dogs have deployed with US Army occupational therapists for prevention and restoration programs as part of combat and operational stress control (COSC) units in Iraq and Afghanistan.

The mission of the COSC unit is to prevent and treat behavioral health issues while in theater. Numerous studies have reported the benefits of AAT for people with a wide range of physical and psychological stress and diseases.¹⁴⁻¹⁸ Despite the documented use of AAT across populations and settings, much of it is descriptive and exploratory with few well-designed systematic studies which measure program effectiveness, and there have been no such studies with injured or ill service members in garrison. The purpose of this study was to determine

if WTs who participated in AAT with dogs while attending Life Skills programs had improved mood states, decreased stress levels, increased resilience, lowered levels of fatigue, and improved daily function for reintegration and transition to the next stage of their life, as compared to WTs who did not interact with dogs. The long range goal of this research is to contribute to a base of evidence for use of AAT within the military. Specifically, this study attempted to answer the following research questions:

- Are there differences over a period of 8 weeks in mood state, stress levels, resilience, fatigue, and daily function between groups following participation in the standard of care (OT Life Skills programs) with and without ATT?
- Is mood, stress, and resilience related to the level of fatigue and daily function of WTs?



Wounded Warrior interacting with a therapy dog. Photo courtesy of the authors.

METHOD

This study employed a quasi-experimental design with a pretest, posttest, nonrandomized control group (2×3) mixed model, repeated measures ANOVA). Participants were assigned to one of two group levels, the OT Life Skills program (control) and Life Skills program plus AAT (experimental). They completed outcome measures at 3 time periods: baseline, postintervention (4 weeks after baseline) and follow-up (8 weeks after baseline). The study was approved by the Brooke Army Medical Center Institutional Review Board for the Protection of Human Subjects.

RECRUITMENT

Participants were recruited with flyers and by invitation of WTU staff. Exclusion criteria included pregnancy, dog allergies, open wounds, previous or concurrent participation in the Cognitive Behavioral Education Strategies program, concurrent participation in the Army

Center for Enhanced Performance (ACEP) program, concurrent participation in an equine therapy program, and daily interaction with their own dog. Inclusion criteria was status as a US service member assigned or attached to the WTU, at least 18 years of age, and able to read and speak English.

MEASURES

The measurement tools were a demographic information form and standardized assessment measures for mood, stress, resilience, fatigue, and function.

Profile of Mood States (POMS). The POMS consists of 65 descriptors which measure 6 dimensions of mood:

1. Tension-anxiety
2. Depression-dejection
3. Anger-hostility
4. Vigor-activity
5. Fatigue-inertia
6. Confusion-bewilderment¹⁹

Items are measured on a 5-point scale where 0=not at all and 4=very often. Internal consistency has been reported for all items as ≥ 0.90 ; test-retest reliability ranges from 0.65 for the vigor scale to 0.74 for the depression scale.¹⁹ The POMS has been used with a wide range of health conditions to assess mood state.²⁰

Perceived Stress Scale (PSS). The PSS is a widely used instrument to measure one's perception of stress.²¹ It consists of 10 items measured on a 5-point Likert scale with responses from 0=never to 4=very often. The questions ask about one's feelings related to general stress within the past month. Internal consistency has been established with Cronbach's $\alpha = 0.84-0.86$; test-retest reliability ranges from 0.55-0.85.²¹ Concurrent and predictive validity have been established to global life-event scales as a predictor of stress.²¹

Connor-Davidson Resilience Scale (CD-RISC). The 25 items of the CD-RISC address self-rated dimensions of the construct of resilience.²² Items are scored on a 5-point Likert scale where 0="not true all the time" and 4="true nearly all the time." The total scores range from 0-100 where higher scores indicate greater resiliency.²² Internal consistency (α coefficient) was found to be 0.89.²² Item correlations ranged from 0.30 to 0.70 and test-retest reliability yielded an intraclass correlation coefficient of 0.87.²²

Fatigue Scale. The Fatigue Scale is an 11-point numeric measure where 0=no fatigue and 10=worst fatigue

imaginable. A linear numeric scale is considered to be an acceptable method for measuring a unidimensional characteristic.²³

Functional Status Questionnaire (FSQ). The FSQ is a comprehensive self-report of the patient's physical, psychological, social, and role functions.²⁴ There are 28 items found in 6 subscales:

1. Basic activities of daily living (ADL)
2. Instrumental ADL
3. Psychological function
4. Work performance
5. Social activity
6. Quality of interaction

The scales have demonstrated good reliability with established construct validity.²⁴

The Occupational Self Assessment (OSA). The OSA consists of 21 self-report items to measure perceived level of competence and values about participation in everyday activities (occupational performance).²⁵ Clients rate how well they do activities such as "concentrating on my tasks" and "managing my finances" on a 4-point Likert-type scale where 1=lot of problems to 4=extremely well, and the importance of the activity to them where 1=not so important to 4=most important. Rasch analysis has demonstrated good construct validity of the competence scale²⁶ and consistency by 90% of participants with a wide range of disabilities.²⁷

INTERVENTIONS

All participants attended Occupational Therapy Life Skills classes on stress management, communication/anger management, and healthy living for a minimum of 3 and up to 6 classes. The experimental group also received AAT for 30-minute sessions immediately after each Life Skills class, each session was on a 1:1 basis with a pet therapy team (ie, a dog and its handler). The AAT intervention was as follows: the handler instructed the participant in using basic dog obedience commands such as sit, stay, lie down, sit up, shake and fetch. After the participant was successful with administering 5 commands to the dog, the remainder of the 30 minutes was spent engaging in activities of the participant's choice, such as going for a walk on the facility grounds, sitting quietly and petting the dog, brushing the dog, and teaching the dog new tricks. All AAT sessions were supervised by research staff. Fidelity checks were conducted on the AAT intervention and OT Life Skills class to ensure consistency in delivery of interventions throughout the study.

DATA ANALYSIS

All data analysis was performed using SPSS* version 16.0. Descriptive statistics were used to examine the data. Assumptions of normality and linearity were evaluated and data was screened for outliers. Independent samples *t*-test and chi-square analyses were performed to examine the demographic differences between the control and experimental group. Repeated measures ANOVA was used to identify differences among baseline, post, and follow-up scores of the POMS and OSA. Friedman's repeated-measures ANOVA was done to determine differences on the PSS, CD-RISC, FSQ subscales and Fatigue scale at the 3 measurement points. Assumption of sphericity was checked using Mauchly's test. In the presence of a significant overall test, pairwise comparisons were performed with the Wilcoxon-signed ranks test, with the *P* values adjusted using the Bonferroni correction to maintain an overall 0.05 comparison rate. Spearman's rank correlation coefficient was used to examine the relationship of stress, mood, and resilience to fatigue and function at baseline, post-intervention, and follow-up.

RESULTS

Participants

Based on the inclusion criteria, 27 service members volunteered, received and signed the informed consent document, and were assigned to one of the 2 groups. Three participants were not able to complete the study and dropped out after baseline measurement; their data were not included in the final analysis. A total of 24 subjects participated in the study. Demographic information is presented in the Table.

Between Groups

There were no differences over a period of 8 weeks in mood state, stress levels, resilience, fatigue, and most measures of daily function following participation in OT Life Skills classes with and without ATT. Significant differences were found for 3 subscales of the FSQ (where a higher score indicates improvement); psychological function (PF), work performance (WP), and quality of interaction (QI). Friedman's test for comparison of the FSQ-PF resulted in $\chi^2(2)=7.9$ with $P<.05$. Psychological function was highest at baseline and lowest at the follow-up measurement period. Multiple comparisons indicate that there were no significant differences from baseline to post-intervention measurement or post-intervention to follow-up. Friedman's test for comparison of the FSQ-WP resulted in $\chi^2(2)=18.86$ and $P<.000$. Work performance was lowest at baseline

*Statistical Package for the Social Sciences, SPSS Inc, Chicago, IL

THE EFFECTS OF ANIMAL-ASSISTED THERAPY ON WOUNDED WARRIORS IN AN OCCUPATIONAL THERAPY LIFE SKILLS PROGRAM

Demographics of participants in the study.		
	OT Life Skills with AAT (n=12)	OT Life Skills (n=12)
Age in years – Average (SD)	37.08 (11.79)	35.5 (9.19)
Gender		
Male	10	7
Female	2	5
Active Duty	8	7
Reserve Component	4	5
Officer	2	3
Enlisted	10	9
Months in service [average] (SD)	124.08 (107.05)	118.5 (80.849)
Number of deployments		
1	6	5
2	6	4
More than 2	0	3
Months deployed [average] (SD)	16.42 (7.513)	16.71 (8.703)
Previous dog ownership		
Yes	9	10
No	3	2
Negative experience with dog		
Yes	1	2
No	11	10
Current dog ownership		
Yes	1	3
No	11	8
Primary medical condition		
Orthopedic	5	8
Behavioral Health	3	0
Other	4	4

and highest at the follow-up measurement period with multiple comparisons indicating significant differences between those two time points. Finally, for the FSQ-QI, Friedman's test resulted in $\chi^2(2)=23.48$ and $P<.001$. Quality of interaction was lowest at baseline and highest at the follow-up measurement period with multiple comparisons indicating significant differences among all measurement periods.

Relationships

Correlational analysis found significant relationships as follows: between stress and fatigue (baseline, $r=0.624$), stress and occupational performance (OSA) (baseline, $r=-0.717$; postintervention, $r=-0.619$) and FSQ-PF (postintervention, $r=-0.849$), stress and FSQ-QI (postintervention, $r=0.691$); between mood and fatigue (baseline, $r=0.596$), mood and occupational performance

(OSA) (baseline, $r=-0.760$; postintervention, $r=-0.882$, follow-up, $r=-0.772$), mood and FSQ-PF (baseline, $r=-0.917$; postintervention, $r=-0.657$), mood and FSQ-QI (baseline, $r=0.717$); between resilience and occupational performance (OSA) (baseline, $r=0.734$; postintervention, $r=0.961$; follow-up, $r=0.845$), resilience and FSQ-PF (postintervention, $r=0.755$).

COMMENT

This is the first study to examine the use of AAT in conjunction with OT Life Skills programs as an intervention for wounded service members in a garrison environment. Despite the primarily nonsignificant results, there is anecdotal evidence that supports the value of the intervention with service members. During the study, several participants reported feeling more calm and at ease after working with the dogs. In addition, "the dogs" were often a topic of conversation among participants and other service members, staff, and family members who observed the pet therapy teams. Several Soldiers informed the Warrior Family Support Center Director that they enjoyed the dog sessions, looked forward to seeing the dogs again and regretted the conclusion of the study. The Director also expressed regret when the study ended as this was the only source of AAT for Soldiers at this facility.

The significance differences in scores on 3 subscales of the FSQ are of some interest. Psychological function (PF) scores decreased (got worse) whereas work performance



Wounded Warrior walking with a therapy dog, accompanied by a certified handler. Photo courtesy of the authors.

(WP) and quality of interaction (QI) increased. Although it is difficult to interpret this result with any confidence given the small sample size, it may suggest that over time (ie, the 8-week duration of this study), the barracks environment and circumstances surrounding medical procedures and appointments may contribute to feelings of being “downhearted and blue,” “down in the dumps,” and “nervous” (PF items). By contrast, Soldiers in the WTU are encouraged to enroll in work-readiness programs and attend education programs that may contribute to an improvement in WP scores. They may be more confident about their work performance over time despite feeling down and more nervous. Improved QI scores may be related to the decrease seen in PF scores; as wounded service members struggle with the emotional issues associated with recovery from illness and injuries, they have more individual and group interventions with WTU staff and behavioral health providers. Thus the number of interactions increases and the Soldier consequently feels less “isolated” and “irritable,” and more likely to get along “well with other people” (QI items).

The significant relationships between stress and fatigue, occupational performance, and psychological function suggest that as levels of stress increased, occupational and psychological function decreased. This may be explained by the demands placed upon wounded service members in a WTU. They report that they are constantly asked to complete satisfaction and climate surveys which are intended for program improvement. However, this constant bombardment of Likert-type surveys is considered “annoying” and “pointless” to some of the participants in the study. Since they are mandated by their chain of command to fill out the climate surveys, some admitted to not reading the questions and just circling numbers. At least 3 participants expressed annoyance with having to fill out 29 minutes worth of surveys as part of this study. Also worth noting is that at the follow-up measurement period, 3 participants in the experimental group verbalized having “a bad week” which may have influenced their scores. The explanation for increased stress and increased quality of interaction offered earlier may apply here as well.

Regarding the relationships between mood and other characteristics, it was noted that as mood improved, fatigue decreased and occupational performance and psychological function increased. This suggests that the better one’s mood, the less feelings of being “downhearted and blue” with an improved perception of one’s ability to sustain a pattern of occupational performance (ie, “concentrating on my tasks” and “managing my finances” which are OSA items) that is productive and satisfying. The unexpected relationship between decreased

mood and improved quality of interaction may be explained as noted earlier.

The relationships between resilience and occupational performance and psychological function suggest that as one is more resilient, he or she is also more able to manage daily life and feel more “calm” and “happy” (PF items). Interestingly, resilience and improved psychological function had a strong correlation at the postintervention period and were not significant at follow-up. This finding suggests that the impact of AAT might help strengthen these short-term relationships and that time may dissipate all benefits gained from AAT. It is possible that AAT primarily brings about reminiscence and comfort due to the immediate socialization that one experiences when interacting with pets. Recollection of memories related to past personal experiences with pets may provide a transient state of emotional well-being. It has been found that pets are a source of conversation and a means for reducing irritability and decreasing withdrawn behavior.²⁸

LIMITATIONS

As noted earlier, the small sample size was a limitation in this study. A power analysis was done to determine the required sample size for 80% power. To find the minimum clinical difference between groups, 50 participants were needed; 25 in each group. Thus, our study sample was too small to detect significant differences. The lack of randomization was another limitation in this study. Participants who favored dogs were more likely to volunteer for the AAT group, whereas individuals who were not partial to dogs may have volunteered for the control group. However, according to the demographics of both groups, there were no significant differences in previous and current dog ownership and history of negative dog experiences.

In spite of screening and training of pet therapy teams, differences were noted by study staff in the AAT sessions where some pet handlers were more interactive than others. This variability may have been overcome by the irregular assignment of different pet therapy teams to participants at each session; that is, no effort was made to consistently have a participant with the same pet therapy team. Thus, differences in pet teams and the handlers may not have been a factor.

In addition, treatment sessions (both AAT and OT Life Skills classes) varied in number, with a range of 3 to 6 classes. This variability in treatment could contribute to the lack of benefit associated with the interventions. Based upon earlier suggestions that AAT may have more short-term benefits, the length of time from intervention

to postintervention and follow-up measurement (4 and 8 weeks, respectively) suggests that any benefits from the interventions may have dissipated by the time of assessment. This study also exclusively used self-report measures which may not have captured immediate benefits of the intervention and were reported by some participants as burdensome to complete.

CONCLUSION

Recognition and management of service members' behavioral health symptoms have become a priority in the Army.^{29,30} It is now recognized as critical to the quality of life of wounded service members which must be addressed at the WTU. Other research clearly supports the use of AAT and life skills training when provided separately.^{9,10,14,16,17} Although this study clearly comes with limitations and the results should be interpreted with caution, it is important to note that it is the first research on the use of AAT in a garrison environment with wounded service members. Future research that considers limitations noted here, especially sample size, randomization, duration of time from intervention to assessment, participant burden in assessment, and control over variability of treatment sessions should be considered. Examination of the cause-effect relationships among the variables of stress, mood, resilience, fatigue, and function would be of great benefit. A mixed method approach that gathered qualitative data could further identify and examine anecdotally reported benefits of using AAT with the military population.

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Training the Combat and Operational Stress Control Dog: An Innovative Modality for Behavioral Health

William Krol

ABSTRACT

Combat and operational stress control (COSC) dogs represent a new category of military working dog. America's VetDogs, a nongovernmental, not-for-profit organization, trains and provides therapy dogs to work with the US Army's combat and operational stress control teams deployed to Afghanistan or Iraq. By taking the therapy/service dog concept to the next level, these dogs have become an important modality in the Army's initiative to safeguard Soldiers' behavioral health while deployed, allowing COSC unit members to break down stigmas that are still present when dealing with behavioral health issues. The training process begins by choosing a pool of dogs, exposing them to different sensory experiences over several months, and training the primary and secondary handlers who will be responsible for the dogs while deployed in theater. After their deployment ends, the dogs are retrained by America's VetDogs to further serve in military or Veterans Administration medical centers as physical, occupational, or behavioral therapy dogs.

For many thousands of years, dogs and humans have been companions. Although there is debate about when wolves became domesticated,¹ based on osteoarcheologic and genetic research, examples of this domestication have been traced to the Upper Paleolithic era (approximately 40,000 to 10,000 years ago).²

Regardless of when and how this partnership developed, canines have performed vital jobs for man throughout the ages. Historically, war dogs have been used by armies, including Egyptian, Greek, Persian, and Roman.³ As fighting dogs, they were trained to attack the enemy or, when used defensively, to protect caravans or forts. In more recent times, dogs have been used as couriers to carry messages in battle or pull carts of wounded Soldiers.⁴

Dogs were used in an unofficial capacity during the Revolutionary War. The first recorded use of dogs by the US Army was during the second Seminole War (1835–1842),^{3(p138)} but it was not until World War II that this relationship was formalized. Patriotic dog owners formed “Dogs for Defense,” a civilian group that reached out, with the aid of the American Kennel Association, to other dog owners across the country to donate quality canines to the US Army Quartermaster Corps.⁵ In 1942, the Secretary of War approved the creation of the first K-9 corps.^{5,6} Since then, dogs have served with their handlers in conflicts around the world in a variety of roles, including sentries, scouts, messengers, and mine detectors.

A NEW ROLE FOR MILITARY DOGS

America's VetDogs began as a project of the Guide Dog Foundation for the Blind, a not-for-profit agency, which has trained guide dogs for blinded Veterans since the end of World War II. VetDogs was created to provide an overall assistance dog program to enhance and increase the services the organization offered to disabled Veterans of all eras. Beginning in 2003 with a presentation at the National Disabled Veterans Winter Sports Clinic, America's VetDogs has built a solid reputation of providing guide and service dogs to disabled Veterans.

VetDogs was invited to train a balance dog to work at the Walter Reed Army Medical Center with vestibular patients as they adjusted to their new prostheses. However, it was realized that wounded Soldiers were also using the golden retriever (named George) for emotional support during their rehabilitation. Indeed, after George's original handler was reassigned, the dog became a “good will” ambassador-at-large for recovering service members.

Based on observations of how these men and women responded to George's presence, a new role was envisioned for therapy dogs as an innovative “tool” that combat and operational stress control (COSC) teams could use in theater to help break down the stigma attached to mental health care. They would allow members of the COSC team to reach out and help Soldiers who might be experiencing combat stress or home-front issues during their deployments as part of Operation Iraqi Freedom (OIF)

or Operation Enduring Freedom (OEF). America's VetDogs was approached to train dogs to serve in this pioneering capacity. VetDogs and Army personnel worked together for a year to refine the aspects of the program, including training and dog handling responsibilities. In December 2007, SFC Boe and SFC Budge, two black Labrador retrievers (Figure 1), assumed a historic role: the first-ever combat and operational stress control dogs to be deployed in theater as specially trained skilled therapy dogs.

America's VetDogs worked in collaboration with the Army Public Affairs Office in New York, NY, to generate media coverage of the handover ceremony as America's VetDogs donated the dogs to the Army. Local New York and national media covered the story before the dogs' deployment, and updates appeared on CNN, Fox News Channel, and National Public Radio. Stories appeared in newspapers, websites, and blogs, including press releases generated by the different units that were visited by the COSC dogs.



Figure 1. SFC Boe and SFC Budge were the first-ever combat and operational stress control dogs. They served in Iraq from 2007 to 2009. Photo courtesy of Lou Buonomo.

TRAINING THE COSC DOG

To ensure that America's VetDogs provides only the highest quality, fully trained dogs to the Army, training and acclimating a COSC dog team and preparing it for deployment (including the training of handlers) is a 4- to 6-month process. The search for a COSC dog begins with a review of the medical records of available dogs currently residing in the Guide Dog Foundation kennels (America's VetDogs obtains its dogs from its parent, the Guide Dog Foundation for the Blind) and includes



Figure 2. A VetDogs trainer works with a candidate combat and operational stress control dog to board and exit a helicopter at the Intrepid Sea, Air, and Space Museum in New York, NY. Photo courtesy of the author.

Labrador retrievers, golden retrievers, and Labrador/golden retriever crosses. Trainers evaluate dogs that come only from the Foundation's stock because of the detailed medical histories kept for each dog. All dogs chosen for the COSC training program must have clean bills of health because the availability of veterinarians and the conditions the dogs may face once deployed are not predictable. The dogs are reviewed for temperament, health issues, and adaptability. Trainers look for a "sound" dog, one that is confident and comfortable with new experiences. It must not react adversely to unpleasant experiences nor have residual effects when it does encounter such conditions. A pool of approximately 20 dogs will eventually be narrowed down to 12 dogs, and then 6 dogs.

After a certain number of dogs have been identified as potential COSC dogs, a trainer works with a local volunteer fire department to expose them to different types of vehicles and equipment, sights, sounds, and smells. During a typical visit, firefighters will sound the horns and flash the lights so the trainer can evaluate the dog's reaction. If it bolts or otherwise shows that it is afraid, the dog will not be used for the COSC program. However, minor anxiety exhibited by the dog can be overcome.

TRAINING THE COMBAT AND OPERATIONAL STRESS CONTROL DOG: AN INNOVATIVE MODALITY FOR BEHAVIORAL HEALTH

The dogs are loaded and unloaded onto different vehicles so they are comfortable with a variety of equipment. There is also a mechanic's "pit" that was previously used to make repairs on trucks. The VetDogs trainer leads the dog into the pit because it simulates a dark cave with many different smells, including burn smells. If the dog balks, the trainer gently encourages the dog without forcing it; the dog must be able to trust its handler.

The dogs are also acclimated to the sounds of gunfire and helicopters. VetDogs works cooperatively with the aviation division of a local police department and the Air National Guard for access to working helicopters and other military aircraft. Trainers have also worked at the Intrepid Sea, Air, and Space Museum (New York, NY), teaching the dogs to jump in and out of the helicopters (Figure 2) on display on the Intrepid's flight deck. Until they are deployed, the dogs' helicopter training is static.

Thanks to the relationship between VetDogs and a local firing range, the dogs are exposed to the sounds of gunfire, from automatic weapons to pistols (Figure 3). The trainers want to ensure that the dogs maintain a calm attitude and demeanor when exposed to these sounds. The dogs are also conditioned to wear special goggles, vests or backpacks, and ear muffs.

Additional sensory exposures include different types of surfaces (sand, stone, gravel, etc) and busy streets and highways so the dogs are comfortable around moving trucks and other loud noises.

VetDogs trainers also work on obedience training, basic commands, and controllability. They will use a motivational object (MO) or "drive toy" to enhance a dog's obedience skills. An MO can be used as a distraction if the dog is in a stressful experience—the dog focuses on the toy, not the situation, thereby alleviating its stress. Obedience is vital because eventually the dog will be in situations with equipment to which it has not previously been exposed.

The most important function of a COSC dog is its adaptability to different environments, noises, and crowds so that the dog enhances the work of the COSC team, without being a distraction. The dog must have excellent house manners and behave impeccably in a myriad of situations.

Dogs must not scavenge for food, so trainers work on teaching the dog to ignore "food distractions." For example, a handful of kibble is tossed on the floor, and the dog maneuvers around it without stopping to eat.

During its mission, the dog may be called upon to have enough energy to engage in morning physical training exercises, while later in the afternoon it may be required to lie quietly in a clinical setting, where Soldiers can interact with it. The dogs can provide emotional comfort through physical interactions such as playing fetch or simple petting.

The dog must also adapt to a number of different handlers depending on the current mission or future deployments. The presence of the dogs allows their COSC team handlers to concentrate on their duties.

INTEGRATED TRAINING

The first COSC team training took place in December 2007 on the campus of America's VetDogs in Smithtown, NY. Two occupational therapy assistants from the 85th Medical Detachment were temporarily assigned to Smithtown for 5 days to learn basic handling techniques for SFC Boe and SFC Budge.

When the 85th Medical Detachment returned to the United States, the dogs were assigned to the 528th Medical Detachment. Prior to their deployment, handlers from this unit also trained at VetDogs headquarters with "demo" dogs to familiarize themselves with obedience training and handling techniques.



Figure 3. A VetDogs trainer and Army handler with a combat and operational stress control dog at the firing range. Note the dog is wearing its special ear muffs. Photo courtesy of the author.

Because the VetDogs campus does not offer the unique training facilities an Army base provides, VetDogs trainers currently travel to a unit's home base to train the dogs' primary and secondary handlers. The VetDogs trainer spends half of the first day working with the whole unit. Team members who are not the dogs' handlers will have the opportunity to understand the roles the canines will play as members of the COSC team. The trainer will also discuss proper handling techniques.

After the initial session, the trainers focus on the primary and secondary dog handlers. The primary handler is an occupational therapy assistant with an interest in the mission, and there are 8 to 14 potential handlers for every 2 dogs in theater.

At the request of the Army, VetDogs trainers traveled to Landstuhl, Germany, to train 2 COSC dogs that would be deployed with the 254th Medical Detachment to Afghanistan. These were the first COSC dogs to be deployed as part of OEF. VetDogs trainers have also trained personnel of the 212th Medical Detachment at Fort Campbell, KY, and the 98th Medical Detachment at Joint Base Fort Lewis-McChord, WA.

IN THEATER

When deployed, the dogs accompany their handlers wherever they go. The dogs serve as an icebreaker and communications link between troops and care providers, and, whether in a one-on-one or group setting, members of COSC teams have reported that service members would talk to them for longer periods of time than if they were alone.

As part of its commitment to the Army, America's VetDogs trainers are constantly in touch with COSC dog handlers throughout their deployment so they remain confident that VetDogs will resolve any issues that might arise with the dogs.

As of this writing, a total of 8 dogs have served as part of OIF, OEF, and Operation New Dawn. The dogs have interacted with thousands of service members, both in theater and in new assignments once they return home. SFC Budge and SFC Boe served 2 consecutive tours of duty, first with the 85th Medical Detachment and then with the 528th Medical Detachment. SFC Zeke and SFC Albert were attached to the 212th Medical Detachment, and then the 85th Medical Detachment. SFC Butch and SFC Zack served with the 98th Medical Detachment in Iraq, and SFC Apollo and SFC Timmy were assigned to the 254th Medical Detachment in Afghanistan. Apollo and Timmy were reassigned to the 528th when the 254th rotated home. For both the 85th and 528th Medical Detachments,

the assignments represented the second time the units had requested COSC dogs to be members of the combat stress control team. Zeke is currently with the 113th Medical Detachment, stationed in Afghanistan.

NEW DUTY ASSIGNMENTS

When Boe and Budge returned to the United States in 2009, they had not been reassigned. However, a civilian physical therapist at Eisenhower Army Medical Center (EAMC) on Fort Gordon, GA, had requested a dog to work with her patients. The dogs were available and residing at America's VetDogs, so the next phase in the careers of the COSC dogs had begun.

It is now standard procedure for America's VetDogs to meet a COSC unit upon its return and transport the dogs back to the VetDogs campus in Smithtown. There, VetDogs trainers reevaluate the COSC dogs for behavior and temperament. When they perform a "temperament test," the trainers compare a dog's behavior from before deployment to its behavior after deployment. Dogs are retrained to correct behaviors that might have been acceptable in theater but would not be in a hospital or other medical setting.

Once the Army Medical Command has determined a dog's next mission, the dog may be trained to perform specific tasks. Such tasks include providing balance and stability with the use of a special balance harness or by "bracing," opening doors, picking up dropped items, pressing buttons, turning on light switches, creating a safe "personal space zone" or leading someone to a door to go outside. Depending on the task, task training involves constant repetition of the task and positive reinforcement when the dog performs it successfully. Each step forward builds on the success of previous steps.

Trainers from America's VetDogs reevaluated and retrained Boe and Budge to serve at EAMC, along with a third dog trained especially for the medical center. Just one example of their effectiveness and value: a Soldier recovering at EAMC was encouraged by her occupational therapist to interact with Budge. She began to realize that the dog was not only helping with her vestibular problems, he was helping to improve her mental state. With the dog by her side, she felt comfortable going out by herself, and later trained with her own service dog from America's VetDogs. She credits her service dog with giving her the freedom to reclaim her life. Further, when her tire blew out during a wheelchair basketball game and she reacted to the noise, her service dog came running to her side as it had been trained to do. This so impressed a fellow Veteran in the stands that he applied for his own service dog in April 2011.

**TRAINING THE COMBAT AND OPERATIONAL STRESS CONTROL DOG:
AN INNOVATIVE MODALITY FOR BEHAVIORAL HEALTH**

AMERICA'S VetDOGS – THE VETERAN'S K-9 CORPS

In addition to COSC dogs, America's VetDOGS also provides individual assistance dogs and training for disabled Veterans of all eras. To date, over 200 disabled Veterans have received assistance dogs to help them with daily life activities. These dogs range from guide dogs for Veterans who are blind or visually impaired to service dogs that provide balance and stability for amputees or those with traumatic brain injuries, seizure alert response dogs for those with seizure disorders, and dogs to alert diabetics when they have low blood sugar.

Of those service members who were still on active duty when they trained with their service dogs, 20% have chosen to remain active.

VetDOGS also trains facility and physical and occupational therapy dogs that are placed at various military and Veterans Administration (VA) medical centers. In addition to the Walter Reed National Military Medical Center and the Eisenhower Army Medical Center, VetDOGS has placed dogs at VA facilities in Northport, NY, Dublin, GA, and Lake City, FL. Recently, Boe was transferred to Fort Benning, GA.

In June 2009, America's VetDOGS received the Secretary of the Army's Public Service Award, which recognizes "exceptional service that makes a substantial contribution to the accomplishment of the Army's missions."

The timeline of the development of the COSC dog program, beginning in 2006, is shown in the inset.

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2006

A new role for therapy dogs in theater is envisioned after it is observed how wounded service members interact with George, a therapy dog at Walter Reed Army Medical Center.

2007

Occupational therapy assistants with the 85th Medical Detachment are temporarily assigned to VetDOGS headquarters to train with SFC Boe and SFC Budge, who are deployed to Iraq in December.

2008

Members of the 528th Medical Detachment travel to VetDOGS headquarters to learn dog-handling techniques before they deploy to Iraq and assume responsibilities for Boe and Budge.

2009

SFC Zeke and SFC Albert are trained to replace Boe and Budge. VetDOGS instructors travel to Fort Campbell, KY, to facilitate training with members of the 212th Medical Detachment.

Boe and Budge return and spend several months at VetDOGS headquarters while they are reevaluated and retrained for service at Eisenhower Army Medical Center. MSG Maverick is trained and will join them for the traumatic brain injury clinic, and inpatient and outpatient behavioral health.

America's VetDOGS receives the Secretary of the Army's Public Service Award.

2010

SFC Apollo and SFC Timmy are trained in Landstuhl, Germany, to accompany the 254th Medical Detachment to Afghanistan. They are stationed at Bagram Airfield.

SFC Budge is diagnosed with lymphoma, one of the most common cancers in dogs, and passes away. He touched the lives of many Soldiers, Veterans, and their families and is remembered during a memorial service at Fort Gordon.

2011

Zeke and Albert return home and are reevaluated and retrained for their next duty assignment. Albert joins Maverick at Eisenhower. Zeke redeployes with the 113th Medical Detachment, and is currently in Afghanistan.

SFC Boe is reassigned to Fort Benning, Ga.

SFC Butch and SFC Zack are trained at Joint Base Fort Lewis-McChord with the 98th Medical Detachment for deployment to Iraq as part of Operation New Dawn. After a 9-month deployment, the unit rotates home. Butch and Zack are currently in residence with America's VetDOGS for evaluation and retraining.

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Occupational Therapists as Dog Handlers: The Collective Experience with Animal-Assisted Therapy in Iraq

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ABSTRACT

The first pair of US Army animal-assisted therapy (AAT) dogs deployed to Iraq in December 2007 with the 85th Medical Detachment Combat and Operational Stress Control unit. As of this writing, 6 dogs have deployed to Iraq and Afghanistan, offering Soldiers a small reminder of home. Army occupational therapists led the way in this endeavor as primary handlers; the path has been rocky but ultimately rewarding. This article depicts how occupational therapists used AAT and animal-assisted activities to help Soldiers cope with the stressors of living in a deployed environment. Challenges and lessons-learned, including anecdotal examples, are discussed.

In December 2007, a new program to include therapy dogs in combat and operational stress control units was initiated by Army occupational therapists. The intent of the program was to complement the job of the therapists by using a highly skilled dog to achieve therapeutic goals. The dogs, SFC Boe and SFC Budge, were a donation from America's VetDogs, a subsidiary of Guide Dogs of America. Therapy dogs are trained to provide individuals a pleasurable interaction via animal-assisted activities (AAA) or animal-assisted therapy (AAT). According to the Delta Society*:

Animal-assisted activities provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life. Animal-assisted activities are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers, in association with animals that meet specific criteria.²

Animal-assisted therapy is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or delivered by a health/human service provider working within the scope of practice of his/her profession. Animal-assisted therapy is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning. AAT is provided in a variety of settings and may be group or individual in nature. This process is documented and evaluated.³

*The Delta Society is a national nonprofit organization which focuses on training, certifying, and registering therapy and service dogs, and conducts research into human-animal interactions.¹

As of this writing, 6 dogs have deployed to Iraq and Afghanistan, offering Soldiers a small reminder of home. For the Army occupational therapists who led the way in this endeavor as primary handlers, the path has been rocky but ultimately rewarding.

PREDEPLOYMENT TRAINING

Predeployment training was vital for the dog handlers, because none of the handlers were previously trained in nor had they utilized AAT in their profession. The 3 handlers' previous experience with dogs ranged from no experience to owning a dog as a family pet. In February 2010, the 85th Medical Detachment Combat and Operational Stress Control (COSC) hosted 5 days of predeployment training at Fort Hood, Texas. Two trainers and 4 dogs from VetDogs of America traveled to Fort Hood to train over 15 unit personnel. The 4 dogs were assigned to individuals that would most likely be the primary and secondary dog handlers once in theater. At the end of each day's training, the dogs went home with their assigned handler. The overnight stays helped ensure the handlers understood the responsibilities of taking care of a dog full-time. The formal training consisted of an overview of AAT, history of VetDogs of America, instruction on commands, obedience training, ways to utilize the dogs in theater, and general care of the dog. An Army veterinarian provided instruction on heat casualties, general medical care, and required check-ups for the dogs. Next, the trainees were afforded the opportunity to take their new training to the streets. They took the dogs to the post exchange, hospital mental health clinics, the range, and the motor pool. These sites exposed the therapy dogs and the handlers to a variety

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of military environments. The outings allowed the handlers to practice their new skills in a safe and controlled environment. They received constructive feedback from the trainers about what was good as well as what should be changed. Caring for a canine, especially while deployed, is a massive responsibility, and the predeployment training was a valuable and essential component of the success of the program.

TRANSFER OF CARE

Some dogs deployed and redeployed with the same unit, yet other dogs remained in theater and had to be transferred to new handlers. In March 2010, SFC Zeke and SFC Albert were transferred from the 212th Medical Detachment (COSC) to the 85th Medical Detachment (COSC). During the transfer process, the redeploying therapist educated the incoming therapist regarding the dog's daily schedule and his likes/dislikes. They also informed the new handlers about how and where to obtain additional food, supporting veterinarians, upcoming medical needs, and units they supported. Some units were accustomed to seeing the dogs on a weekly basis and others had set appointments to see the dogs. The outgoing handlers also transferred information regarding a research project that involved the dogs. The dogs' belongings such as kennels, beds, food, treats, and work vests were also transferred. The most difficult part was after the transfer was completed and the previous handler was still on the forward operating base. SFC Zeke was confused, and he did not know from whom to accept commands. For a short time, SFC Zeke tested his boundaries. He was like a child with a substitute teacher, and he wanted to see what he could get away with. After about one week, he acclimated to his new handler and the two of them were able to do some great things across the base.

ACCLIMATION

The therapy dogs not only have to acclimate to new handlers, but they must also acclimate to new environments and new people on a daily basis. Each AAT dog has a different personality and each acclimated to new situations and new people differently. At times, SFC Zeke would get more timid in unfamiliar situations while SFC Albert would get overly excited. Overall, the dogs were friendly, well-mannered, and thrived on interaction. They slept well, ate well, and were very kind to the individuals who cared for them, as well as to the individuals who interacted with them. The dogs seemed to inherently know when they were at work versus when they could relax. When their work vests were put on their demeanor changed. They were more attuned to commands, obedience, and performing tricks. The dogs were not afraid of the

environment or the individuals who interacted with them. In fact, there is only one incident when SFC Zeke became afraid. He walked near a very loud generator, stopped, and would not proceed. His handler did not make a big deal of the situation. She simply took a different route and the problem was solved. For the most part, the AAT dogs adapted well to new people and new situations.

DOG CARE

Some handlers were dog owners at home and were familiar with taking care of a dog. A deployed environment proved to be much different. There were no fenced back yards where one could let the dogs out to run and play. In the summer, the temperature is consistently 120°F in Iraq and the rainy season brings endless amounts of mud. Unlike military working dogs that stay in a caged kennel when they are not working, the animal assisted therapy dogs shared living quarters with the primary dog handler. The primary handlers had a vested interest in keeping the dogs clean, which also required extra time and effort. The handlers were not able to go to the local grocery store and buy dog food, but they had to plan months in advance in order to secure food. The significant responsibility was exhausting and overwhelming at times because being a primary handler was not a primary duty, but an additional duty. The handlers were still responsible for performing duties as officer-in-charge, educators, mental health officers, and occupational therapists. Their duty day was not over when the clinic closed, because they still had to walk the dogs, feed them, and take them to visit Soldiers on the forward operating base (FOB). They were responsible for maintaining a healthy weight for the dogs which proved to be one of the most difficult and stressful parts of caring for them. The assigned dogs were Labrador retrievers, a breed which has a nature to be scavengers. The handlers had to be careful when taking them on walks and interacting with individuals on the FOB. Many people really wanted the dogs to like them, and they knew that with food comes affection. Many individuals would go to great lengths to sneak treats to the dogs despite numerous requests to not feed them. The handlers' dedication to their role sometimes prompted feelings of fear that they might not be up to the responsibilities in the care of their canine charges. At times, one handler seriously worried that her dog may get injured while she cared for him, and that would disappoint the Soldiers that really needed him. Properly caring for a dog requires much effort. All of the handlers faced some challenges while caring an animal-assisted therapy dog, but after being responsible for and interacting with such a valuable animal, they gained a new appreciation for dogs and have themselves become better pet owners.

UTILIZATION OF THERAPY DOGS

Combat and operational stress control (COSC) in the Army focuses on actions taken by military leadership and programs geared to prevent, identify, and manage adverse combat and operational stress reactions (COSR).⁴ Occupational therapists who deploy as part of a COSC unit may be assigned to either a restoration or prevention program.

Restoration programs are designed to teach military members basic coping skills to aid with completion of a successful deployment. The programs vary due to the location needs and the environment, but typically run for 3 to 7 days and include group classes and individual therapy sessions. By the time an individual is referred or volunteers to enroll in a restoration program, he or she has exhibited or is beginning to experience COSR.

In contrast, prevention programs are led by mobile teams who visit service members in their area of operations. The goal of the prevention team is to educate the population on the services provided by the COSC unit and to provide basic education on managing COSR. It is important for the prevention team to build a strong relationship with the leadership and the units so that they feel comfortable seeking services from the COSC, particularly when traumatic events occur.

The therapy dogs were initially used as part of the prevention team to assist the therapists with making contacts and describing their services. Mental health personnel are encouraged to make contacts with command teams, which might range from company commanders to brigade commanders and first sergeants to command sergeant majors. This can be both frustrating and intimidating, however, the ambience became more inviting when the therapy dog was present. The dog's presence helped the therapist seem more approachable and assisted with the flow of conversation. Senior officers and enlisted personnel took more time to listen to the mental health staff and find out what services were available for their Soldiers. The mental health team also walked through motor pools and aircraft hangars, and throughout the FOB's work and living spaces to make contact with service members and to try to gauge the stress and morale levels. If the therapy dog was present, service members appeared more likely to share their concerns, fears, and goals, and to let down their guard for a short time. Soldiers who were angry and stressed suddenly smiled. Many people shared stories about their own dog and showed pictures of their animals. As service members became more comfortable with the COSC team, therapy dogs began to play another role in restoration programs. They were incorporated into group

classes to assist with self-esteem, anger management, or communication skills. If requested by the service member and the schedule permitted, therapy dogs were also used for individual therapy sessions to assist with anxiety reduction. The therapy dogs allowed the COSC units to market their services in a unique way, because they were able to post flyers and write stories about the therapy dogs. The primary handlers noticed an increase in requests for unit visits and commands scheduled more commander briefs after the stories were published. They successfully opened doors for the COSC and ultimately the prevention mission was much easier and more effective with therapy dogs as members of the team.

TRAVELING WITH THERAPY DOGS

Traveling is often necessary in order for the COSC prevention team to reach service members in remote areas. During one therapist's deployment to Iraq, she traveled as far south as Baghdad and as far north as Mosul. The preferred mode of travel was flight, whether via helicopter or USAF transport airplane. Deployment flights are unpredictable, moreover, the frequent sandstorms in Iraq resulted in COSC team personnel being stranded in other installations for several days or even weeks at a time. Having a therapy dog further complicated the situation for various reasons. First, space is limited and the handler is often responsible for carrying his or her own bags and equipment. Combat gear is already heavy, and add to that the responsibility for a dog and its equipment, and ensuring the dog is calm during travel. The whole evolution can become quite stressful. When preparing for travel, every attempt was made to travel as lightly as possible. With the risk of being stranded on another location with fewer resources, it was difficult to ascertain exactly how much dog food to take; too little would be dangerous for the dog, too much would be heavy and burdensome. Another concern was finding lodging if stranded. Space was limited, especially when accompanied by a dog. For example, if the only sleeping space available was a communal tent, the therapy dog could not be left unattended. The dog would have to go everywhere with the handler, to include the bathroom and dining facilities. To complicate matters further, many dining facilities did not give the dog admission and the handler would have to ask others to bring food. Limited air conditioning in temperatures that exceeded 110°F were also a risk factor for the dog, and the handler had to ensure the dog was properly hydrated and cooled.

SEPARATION OF DOGS AND HANDLERS

Midway through the deployment, the 85th Medical Detachment Combat Stress Control became part of the drawdown of forces in Iraq, and the unit was required to reallocate its resources and expand its mission. The

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detachment commander had to evaluate her assets and determine who must relocate and assume responsibilities of new clinics. SFC Albert was chosen to relocate to a large FOB for which the unit would assume responsibility, but his primary handler was tasked to move to a different location. SFC Zeke was known to all across the FOB. The AAT program had tremendous support and made so many positive contacts at that location that the detachment commander decided to leave SFC Zeke in place. Being one of the senior officers in the unit, SFC Zeke's handler was tasked to open a new clinic and therefore had to relinquish her duties as primary dog handler. She again had to face the responsibility to transfer care of SFC Zeke, however, this time it was she who would leave. Fortunately, the transfer of care was minimal, because she transferred him to his secondary handler who was already familiar with SFC Zeke's schedule, routine, habits, and idiosyncrasies. The transition was rather seamless, unfortunately, the separation was more difficult, particularly for the handler. She missed the ability to pet him and snuggle with him when she had a bad day. His new primary handler wrote her to tell her that SFC Zeke stopped at her old door and waited for her to come back. Her heart ached but she felt proud that she had the opportunity to work with him and she was proud that he remembered her. The previous handlers of Zeke and Albert were able to interact with the other AAT dog in theater, but it was not the same. It was hard for them not to compare the dogs and they never felt the same connection.

**THE AFFECT OF A THERAPY DOG ON A DEPLOYED
COMMUNITY**

The discussion so far has focused on how therapy dogs assisted the occupational therapy handlers in performing their deployed mission. However, the strongest proof of the success of this program is evident in the deployed community bonds the dogs help form. Many of the therapy dogs participated in community activities such as running in local 5km races, attending church, and attending unit events such as promotion and reenlistment ceremonies. Community members often made sure to invite the therapy dogs as morale boosters and for motivation. For example, many Soldiers reported the desire to want to "outrun the therapy dog" in the 5km races. A perfect example of the community support was a birthday party planned for SFC Boe in October 2009. The local Morale, Welfare, and Recreation center was reserved for the event. Several Soldiers donated a "Clifford the Big Red Dog" piñata, the local dining facility created an amazing birthday cake with a chocolate replica of SFC Boe, and the local Army band volunteered their Dixie Band to play at the party. More than 100 community members attended the event and participated in many of the activities that included sumo wrestling, piñata

breaking, cake-eating, and dancing. Activities such as these break up the monotony of the deployed environment and offer simple pleasures normally experienced back home that help create the sense of a community.

CONCLUSION

For the past 5 years, combat stress control units have been using animal-assisted therapy dogs in theater. This article describes the experiences of 3 Army occupational therapists as primary dog handlers while deployed, a period that was filled with both challenges and rewards. Ultimately, it was an experience of a lifetime for the occupational therapists who were the primary dog handlers, as well as for the service members and civilians who had a therapy dog in their deployed environments. One of the most difficult coping aspects of deployment to a war zone is the fact that service members are away from family and loved ones during difficult and highly stressful times. The presence of a therapy dog in this situation offers our service members the ability to express and receive affection in an appropriate manner. On almost a daily basis, a visitor to these therapy dogs would state "I just needed a hug from the therapy dog," or would exclaim "That is just what I needed!" upon receiving a sloppy kiss from the dog. The therapeutic activity of playing fetch or petting a therapy dog offers service members a simple pleasure from home that can make one more day of deployment bearable. Sometimes, the small gesture of unconditional love from a dog can literally make all the difference in the world.

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Crossing the Berm: An Occupational Therapist's Perspective on Animal-Assisted Therapy In a Deployed Environment

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As an Army occupational therapist assigned to the 212th Combat and Operational Stress Control (COSC) Detachment, I was given the opportunity of a lifetime providing service to my fellow Warriors, the Soldiers, Marines, Sailors, and Airmen, along with Department of Defense employees of the United States. My role was to manage a CSC clinic that provided behavioral healthcare in Iraq and to conduct fitness and prevention operations for which I had been trained. In addition to the doctrinal education and concepts that I formally learned through the Army's Combat and Operational Stress Control Course (COSC), I received a new tasking—one in which I would be assigned a 4-legged, furry battle buddy named Sergeant First Class Albert.

Albert is a tan Labrador retriever that was donated to my detachment by an organization named America's VetDogs to assist our efforts in treating clients who had experienced combat and operational stress reactions (COSR) during their tour of duty. In August of 2009 he was "boots on the ground," prepared to save a life one paw at a time. This mission was my initial first-hand experience in using animal-assisted therapy (AAT) as a therapeutic medium for behavioral healthcare. Albert's ability to engage clients as they entered the COSC clinic, attend a one-on-one appointment with a provider, or even visit the Soldier at their duty location proved to be beneficial in enhancing the mood of our clients and their contemporaries.

He was able to ease tension of many of our clients in order to assist in their willingness to seek out the COSC unit for care and to openly discuss the issues that had troubled them. His presence aided in normalizing the context of a deployed setting for many clients that had not seen their loved ones for many months. The avid dog lover naturally enjoyed his services, but many other clients who previously did not have affection toward canines would open up to his charismatic nature and engage in leisure activities with him. Many of our clients would play fetch, pet him, and even go through his series of commands in order to develop assertiveness.

Albert's training allowed him to be used within our fitness program to teach multiple life skills classes such as effective communication, anger and stress management, and assertiveness training. He assisted our clients by building their confidence in how they projected their voice and tone, delivering clear and concise directions, and by implementing contextually appropriate use of body language and gestures when communicating. In addition to developing communication skills, many of the service members were able to use his services as a healthy coping mechanism for dealing with stressful life events. He was more than any mascot could be in enhancing *esprit de corps*, he was a friend in a rough and unforgiving environment that helped many clients see the value in their mission abroad and enabled them to relate with other service members within a psycho-educational group setting.

The ability to travel with Albert to each unit within our contingency operations base provided opportunities to engage our clients from a preventive standpoint. The COSC unit performs prevention operations as a community-based approach to service our clients who may not have had an opportunity to engage a provider within the walls of the clinic. Under this premise, I was able to teach classes in a small group setting, within their respective area of operations while using Albert as a way to provide continuous opportunities for preventive education. He simultaneously operated as another outlet for the Soldiers to vent and cope with their stressful predicaments in a positively focused manner. As we would visit a unit, news would travel to adjacently oriented units that would also request our services. This only further assisted our detachment in trying to reach all of the potentially at-risk COSR casualties. Furthermore, we had a buy-in from the command groups that we supported to assist in fighting the negative stigma associated with seeking behavioral healthcare.

The benefits of Albert's services could best be defined by the number of smiling faces that routinely greeted him. As the popularity of his presence resonated throughout

CROSSING THE BERM: AN OCCUPATIONAL THERAPIST'S PERSPECTIVE ON ANIMAL-ASSISTED THERAPY IN A DEPLOYED ENVIRONMENT

the base, Albert would add units to his weekly visits and would be frequented by new clients within the clinic. There were few locations where he was not allowed, and his efforts were even lauded by the 3rd Infantry Division Commander as demonstrated by his recognition as the Military Working Dog of the Month.

Hindsight is always 20/20. With the experience of using a canine for animal-assisted therapy, I can honestly say that the wait for Albert to arrive in theater was well worth it. A lot of training had to be planned, coordinated, resourced, and implemented for all of the personnel within the detachment who were designated as animal handlers. It ultimately proved beneficial in maintaining Albert's skill set and to maintain continuity among the handlers. As a lesson-learned, Albert was received very well by the population treated and was useful for the life skills classes that I instructed with him. His effort has added to the foundation of AAT in a deployed setting and will hopefully guide a doctrinal change in how the Army utilizes, trains, and deploys canines for behavioral healthcare.

The procurement of canines while in garrison would be the most effective means of establishing AAT capability prior to a deployment. Canines are pack animals and require time to adjust to their handler, thereby identifying their role and responsibility within the pack. Albert adjusted well to his changing environment, however, this

was greatly influenced by his personality. Maximizing the amount of time spent between Albert and the detachment boded well for his transition. I strongly advocate that a COSC unit requisition the assignment of a canine as soon as they are tasked with an AAT mission.

I highly recommend the use of animal-assisted therapy as a treatment modality for combat and operational stress control detachments, with emphasis placed on a concerted effort to establish a standard procurement process that integrates the canines into a detachment's deployment cycle. As soon as a unit enters their "reset window," it would be beneficial to have the canine available to begin training, rapport building, and integration within COSC operations. My experience with AAT was challenging and rewarding, all in the same light. More importantly, I learned that these furry friends have a benefit that transcends the relationship of a typical pet owner, indeed, rather, is should be likened to that of a comrade in arms, focused on conserving the fighting strength. I thank my superiors who tasked me for the opportunity represented by this wonderful assignment, and America's VetDogs for providing such an efficiently trained canine.

AUTHOR

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Military working dogs have been deployed with US combat forces since the beginning of operations in Iraq and Afghanistan. Here, Grek and his Army handler wait at a safe house before an assault against insurgents in Iraq during 2007. US Air Force photo by SSgt Stacy Pearsall.

Rehabilitative Canine Interactions at the Walter Reed National Military Medical Center

MAJ Arthur F. Yeager, SP, USA
CPT Jennifer Irwin, SP, USA

Due to rapid advances in the medical field, effective holistic forms of patient care are often precluded from best practice consideration. Without evidence-based data on these nontraditional interventions, resources are likely to focus more on costly equipment, complicated surgeries, and increasingly heavy use of medication. Successful programs such as animal-assisted therapy remain unknown to the medical community at large and, consequently, underutilized, despite their demonstrated efficacy in the rehabilitative milieu. This paper highlights canine programs currently used by the US Army that use trained animals and handlers to achieve specific physical, cognitive, and psychosocial goals.

Animals are a significant part of American culture and share a symbiotic relationship throughout the history of humans worldwide. In November 2005, the American Heart Association released the results of a study showing that 12-minute visits with therapy dogs improved heart and lung function, reduced blood pressure, diminished harmful hormones, and decreased anxiety in heart patients.¹ Despite limited therapeutic evidence in both the civilian and military sectors, it is reasonable to surmise that the benefits of animal involvement in rehabilitative settings can be extremely helpful for patient and provider alike.

The Walter Reed National Military Medical Center (WRNMMC) is one such facility that is an emerging leader in implementing various human-animal bond programs. As the military's first combined service medical center facility, WRNMMC currently provides support to over 500 Wounded Warriors and their Family members living in on- or off-campus facilities. Enhancing healthcare needs throughout their rehabilitation was the impetus for implementation of the following human-animal bond programs.

SERVICE DOG PROGRAM

The Service Dog Program works with civilian organizations accredited under Assistance Dogs International (ADI) (Santa Rosa, California). Currently, recipients of these dogs are limited to Wounded Warriors with physical disabilities. However, research is underway into extending eligibility to include Wounded Warriors diagnosed with posttraumatic stress disorder through

studies, guidance, and education. Participation in the Service Dog Program starts with a physician, therapist, or the Warrior Transition Brigade. Eligible service members are educated on the available ADI accredited nonprofit organizations (NPO) that have a 501(c) tax exemption. The WRNMMC has verbal agreements with participating NPOs that have excellent reputations and strong follow-up records of their clients. Wounded Warriors cannot accept service dogs from an NPO until they reach outpatient status or are living off-campus. This requirement stems from policies aimed at protecting patients' health and welfare as well as their respective service dog. Once a patient selects an organization, he or she fills out a referral application and submits it to the selected agency. The chosen agency makes a qualification determination and contacts the patient to coordinate matching with a service dog that will meet their needs.

CANINES FOR COMBAT VETERANS

Canines for Combat Veterans (CCV) was founded to specifically address the unique assistance needs of combat Veterans and is one of several leading NPOs that provide service dogs to Wounded Warriors. Under the auspices of the National Education for Assistance Dog Services (NEADS, also known as Dogs for Deaf and Disabled Americans), CCV donates service dogs to Wounded Warriors from all foreign wars, past and present. Additionally, they provide a 2-week training course for the Veteran and a primary care assistant. This program includes lodging, meals, and round trip transportation to their Princeton, Massachusetts training facility. Customized training of the dog is completed based on the user's needs prior to receipt of the dog. NEADS provides ongoing monthly follow-ups with the Veteran to ensure that the dog is meeting the Veteran's needs.*

Prior to its recent consolidation with the Navy National Medical Center, the Walter Reed Army Medical Center (hereinafter called Walter Reed) was the only medical treatment facility to use a fully trained service dog for both demonstration purposes and patient interactions as a therapy dog. In accordance with donation limitations and CCV guidelines, the adopted dog belonged to a combat Veteran who was also a rehab therapist. The

*See related article on page 61.

handler need not possess a debilitating injury if the service dog is used to provide patient education in a clinical setting. In this case, the therapist was solely responsible for the health and welfare of the dog as well as gaining supervisory guidance in the application and frequency of canine use in the clinic.

In addition to standard service dog commands, the therapist and CCV dog demonstrate the following tasks that can be performed by most service dogs: press buttons to open ADA doors,* manually open and close other doors, retrieve prosthetics and assistive devices, turn lights on and off, open refrigerator to retrieve an object and close refrigerator door, assist with floor to stand transfers, find up to 8 separately identified objects selected by the patient, and retrieve items like keys and even coins.

This program not only benefits many patients and their respective primary care assistants, it is a valuable tool for the multidisciplinary education of all providers. Likewise, the staff member who adopts the dog gains valuable insight to the training and skill maintenance requirements their patients will encounter. Ultimately, it assists the patient and provider in making a more accurate assessment of whether such a resource is appropriate and beneficial.

PETS2VETS

The objective of Pets2Vets (Arlington, Virginia) is to alleviate the psychological suffering of our nation's Warriors while reducing the number of sheltered animals in the United States.² Those beneficiaries without physical disabilities who are not eligible for a service dog may qualify for participation in Pets2Vets. Typically, these dogs do not have the training or capacity to provide physical assistance. Instead, these "pets" are trained to promote a wide range of psychosocial benefits well-known to man that are considered therapeutic, albeit much more difficult to validate with tangible evidence. To qualify for participation in Pets2Vets at WRNMMC, active duty members or their family must participate in shelter visits, attend pet training and care classes, and must reside off-campus. Much like the Service Dog Program discussed earlier, a provider or the Warrior transition unit recommends the patient who then submits an application to Pets2Vets. In turn, Pets2Vets makes a qualification determination and follows up with the patient for participation in their program.

SPECIALIZED THERAPY K-9 PROGRAM

The Specialized Therapy K-9 Program uses trained service dogs for specific therapeutic applications in WRNMMC's Military Advanced Training Center

(MATC). The MATC's multidisciplinary team provides Wounded Warriors with care from initial surgery to reintegration with their units, or transition to Veterans Administration care.

The program allows certified therapy dogs to work within an approved clinical setting while under the supervision of a medical provider who is also the personal owner of the dog. Participating dogs are certified by an approved service dog or therapy dog agency, and up-to-date medical records must be maintained within the section where they are working. Periodic assessments and continuing education of the dog are documented by the owner and or participating agency to ensure that proper safety and training precautions are current.

As of this writing, there are 2 dogs that work regularly in the MATC. Their schedule and scope of practice is determined by the department chief, the owner/handler, and the providers that use the dogs in their therapy. Wounded Warriors receiving care at the MATC may participate in rehabilitation that incorporates some if not all of the following tasks: general dog handling skills; fallen/seated position to standing; retrieval of objects; gait and balance training with a harness; strength and balance training with tug of war; cognitive training and coordination with physical movement through sequential movement patterns, tasks, and/or verbal commands; chest wall expansion through voice commands (H. Naranjo, oral communication, October 27, 2010). These adjunct forms of rehabilitation add graded environmental complexity to purposeful activities that can improve social and therapeutic engagement via interaction with the dogs. Further, these novel interventions can foster psychological well-being, calmness, and ultimately motivate a patient to improve their quality of life by applying for their own service dog.

WARRIOR TRANSITION BRIGADE OCCUPATIONAL THERAPY WORK AND EDUCATION PROGRAM

There are a variety of therapeutic dog interactions offered by the WRNMMC Warrior Transition Brigade's Occupational Therapy Work and Education Program. The following differ slightly by the tasks being performed as well as the amount of involvement by the Wounded Warriors.

Warrior Transition Brigade Service Dog Training Program

This evolving initiative was initially a collaboration of the Bergin University of Canine Studies (Santa Rosa, California), the Department of Veterans Affairs, and the

*Meets criteria and specifications of the Americans with Disability Act (ADA), 42 USC §12101-12213 and 47 USC §§225, 611.

Walter Reed Army Medical Center Warrior Transition Brigade (WTB).³ Now, a variety of NPOs are partnered with WRNMMC to create a therapeutic learning opportunity for Warriors in transition and other service members diagnosed with posttraumatic stress disorder or traumatic brain injury. Instructors address some of the symptoms associated with these injuries by coaching service members in the training of future service dogs for other Veterans. Eligible service members are referred to the program by the WRNMMC WTB Occupational Therapy Department. Program participants develop a connection with the dogs they are training and experience their unconditional love, affection, and support that can provide significant stress relief during the service members' community reintegration.*

Research indicates that dedicated interaction with canines promotes sociability and cushions the negative physiological effects of anxiety.¹ Training sessions are 2 hours long up to 4 days per week and include dog-learning theory, grooming, and hands-on supervised training, both on- and off-campus. These sessions provide a sense of accomplishment for the Wounded Warriors and can improve cognitive, emotional, and social competence. Ultimately, the fully trained dogs are then partnered with Veterans with combat-related physical disabilities. Assisting in this partnership exemplifies the portion of the Soldier's Creed that declares "I will *never* leave a fallen comrade," while challenging Wounded Warriors to practice the emotional and cognitive skills that enhance the trainers' overall recovery. The impact of the Warrior Service Dog Training Program on Veterans and service members reaches well beyond its participants. The presence of this program on military installations brings the trainers and their dogs into friendly contact with dozens of other service members every day. Such interactions can provide periods of reduced stress for all parties as well as an opportunity for the participants to share their positive experiences with fellow Veterans and service members.

While under training, the dogs are housed at night and on weekends by volunteer "puppy parents" comprised primarily of WRNMMC staff and cadre. Dogs trained in the program are loaned to the WTB by NPOs and are carefully screened for temperament, health, and genetic abnormalities. Training is based strictly on positive reinforcement and consists of 90 different service dog commands to mitigate various functional obstacles of the future recipient of the dog. It can take up to 2 years for service dogs to complete training. Once a dog graduates from the program, it is returned to the

NPO for placement with a Veteran. As of this writing, 3 Warrior-trained service dogs have been placed with Veterans, and 2 more have graduated and are awaiting placement. Although the trained service dog is provided at no charge to the recipient, the health and welfare of the dog becomes the Veteran's responsibility. The average service dog works for up to 8 years, after which the dog may remain in the home with the Veteran or a family member and a successor service dog will be provided at no cost by an affiliated NPO.

Washington Humane Society "Dog Tags" Behavior and Grooming Training Program

The only congressionally-chartered animal welfare agency in the United States, the Washington Humane Society (WHS) has been the leading voice for animals in the District of Columbia since 1870.⁴ The WHS operates the only shelter in the nation's capital that does not decline animals and is open 24 hours a day.

Wounded Warriors who volunteer for Dog Tags attend animal training and behavior classes twice a week in a vocational environment comprised of both classroom lecture and hands-on training. Classes are conducted at the Washington Humane Society's Behavior & Learning Center. The 3-tiered program is certificate based and targets individuals who either plan on a career in veterinary work or simply interested in the recreational, hobbyist level of learning while spending time with animals.⁵

The first tier of training consists of a basic knowledge and understanding of how canines learn. The second tier focuses on socialization techniques and canine developmental stages. The last tier addresses relationships and canine behavior. All tiers build upon each other and all involve grooming exercises throughout the training cycle. This program exposes Wounded Warriors to the therapeutic effects of canine interaction, and allows participants to contribute to their temporary community, while potentially gaining experience for future jobs in animal-related fields.[†]

Animal-assisted Therapy

Clinical staff members of the Warrior Transition Brigade at WRNMMC are authorized to bring their personal pets several times a week, provided the dog is certified as a therapy dog by Therapy Dogs International (Flanders, New Jersey). According to a recently issued policy memorandum from the Office of The Surgeon General/Army Medical Command,⁶ animal-assisted therapy is defined as the use of a certified animal to facilitate patient recovery from physical, mental, or social illness, using the

*See related article on page 63.

†See related article on page 70.

pet as a “co-therapist” to achieve a specific therapy goal. Therapy dogs are used by the occupational therapists during patient encounters or visits (when appropriate) to provide support to Warriors in transition (WTs). Their presence in the clinic provides opportunities for patients and staff alike to relieve stress and anxiety through animal contact. Therapy dogs attend the Warrior Transition Brigade weekly formations, providing opportunities for a larger number of WTs to benefit. Additionally, WTs separated from their own personal pets due to deployment and/or injuries are afforded temporary companionship while actively convalescing at WRNMMC.

American Red Cross Pet Visitation

The Red Cross Pet Visitation program consists of supervised hospital visits twice a month by Red Cross volunteers and their personal pet dogs which have been certified by the American Kennel Club Canine Good Citizen program. Unlike many of the other programs, these dogs are permitted to visit different inpatient wards in addition to typical interaction with patients passing through the hallways. Pet visitation provides measurable effects on health, including noticeable improvements in both mental and physical well-being to those who are hospitalized.

CONCLUSION

What the former Walter Reed Army Medical Center and now WRNMMC has spearheaded in the way of animal-assisted therapy has paved the way for other medical treatment facilities within the military health care system to follow. The tremendous and far-reaching impact animal-assisted therapy has had on current and prior Wounded Warriors is difficult to measure and therefore hard to quantify. Indeed, it is especially difficult for those who have not experienced close interaction with animals, particularly dogs, to truly appreciate the therapeutic power of that interaction. The willingness of those first at Walter Reed and now WRNMMC to explore nontraditional approaches and try animal therapy

has impacted injured Warriors in positive ways that are still largely unmeasured. Unfortunately, these successes may remain largely unrecognized unless and until more such programs are instituted throughout the military medical system.

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Canines for Combat Veterans: The National Education for Assistance Dog Services

Kathy Foreman
Cynthia Crosson, MD

National Education for Assistance Dog Services (NEADS)/Dogs for Deaf and Disabled Americans* has a long history of meeting the needs of the disabled. Established in 1976 as an agency to train and place dogs with the hearing impaired, NEADS evolved into one of the major canine assistance agencies catering to the needs of individuals with a variety of physical disabilities.

Training our dogs is at the heart of our work. Puppies enter our program at 8 to 10 weeks of age, living and learning in our Laura J. Niles Early Learning Center (Princeton, MA) for 8 weeks. We take full advantage of early learning capacity with a specialized curriculum that provides an enriched environment of stimulating experiences, vigorous socialization, and service dog “prep” work, as well as lots of playtime with their housemates. The program builds a solid, socialized, and eager-to-learn foundation, and readies puppies for the next stage of training; placement in our Prison PUP Program or in foster homes. At this point, puppies must spend up to a year “growing up” and learning the basics before receiving their advanced task-work training on the NEADS campus as service dogs.

Our Prison PUP Program† has operated in minimum/medium security correctional facilities across New England for the past 12 years. Our program utilizes 2 inmates, a primary and a back up, to raise each puppy. Inmates raise and train puppies right in their rooms, taking responsibility for crate training, house breaking, care, and grooming. A NEADS trainer visits each prison program once a week to conduct a 2-hour class for the inmates in the program. Here, the inmates learn how to teach their puppy basic obedience and service dog tasks. In addition, they learn how to groom and properly care for their puppy, basic first aid, and canine health. The trainer assesses each puppy weekly, making training recommendations and assigning homework for the handler for the upcoming week.

The dogs trained by inmates are some of our best-trained dogs. Inmates have little else to do and training our dogs

provides them with a task that not only helps them pass the time but allows them to use their prison time to give something back. The dogs also help the inmates, providing a calming presence and unconditional love.

After completing the Prison PUP Program, the dogs return to our campus for final task training and proofing in order to be matched with a client.

Based upon a well-recognized reputation of training service dogs, NEADS was the first program to be invited to the Walter Reed Army Medical Center to discuss the possibility of training dogs for Veterans who had sustained combat injuries. From these discussions, the Canines for Combat Veterans program was born.

In May of 2006, we worked with the Walter Reed staff to determine how we could best meet the needs of these Veterans, many of whom were dependent upon manual wheelchairs or were learning to use prostheses. As we talked with Veterans themselves, one of the most requested tasks for a potential service dog was to aid the Veteran who, often in public, fell and required assistance to get up. Veterans admitted to embarrassment and feelings of helplessness when they felt dependent upon others to help them. On the other hand, having well-trained dogs that could partner with them in this task would give these Veterans an increased sense of self-mastery.

In addition to assistance after falling, Veterans felt the need for support when using their prosthetics. With this in mind, we developed a specially fitted harness that allowed the Veterans to use the dog to aid them while walking. Interestingly, of the Veterans who were provided with dogs trained to a harness in those early years of the program (2006 and 2007), most, if not all have, recovered to the point in their rehabilitation that they no longer need the harness on the dog to help with balance.

Perhaps the most popular overall task performed by service dogs for Veterans is retrieval. A service dog can pick up an article as small as a coin or credit card and as large as a cane or crutch. Since the Veteran is often unable to reach to the floor for a dropped object because

*<http://www.neads.org>

†<http://www.neads.org/page.aspx?pid=383>

such action might put him or her at risk for a fall, having a dog that will retrieve is a valuable asset.

An interesting response from Veterans applying for service dogs was the request to give the dog to a fellow Veteran whom they perceived needed a dog's help more than the applicant. We did not often get this request from the private sector. Veterans seemed to be concerned: "What if I do not use the dog on a daily basis? Perhaps I don't need one as badly as the next guy."

Our response was that the dog became a form of insurance and empowerment. An example we often used was that an applicant may not drop his keys every day, but when the keys are dropped and perhaps falls into an inaccessible place, the dog can quickly retrieve, hold, and give the keys back. Because of the dog's ability to perform this task, the Veteran will not be forced to wait until someone came along to pick up the keys. The Veteran could maintain (or in some cases, regain) his or her independence and protect his or her feelings of worth.

A particular strength of the NEADS program is that we take great care in matching dogs with their human partners. Applicants complete a detailed application and participate in several in-depth interviews, the purpose of which is to get to know the applicant and find the right dog match to meet his or her needs. These individual interviews became especially important as we sought to address the individual requirements of the Veterans who applied to our program.

As we continued to place dogs with Veterans who had been physically injured in combat, we recognized that many of them were also suffering from posttraumatic stress (PTS). Our observations and other anecdotal evidence indicated that a natural byproduct of having a service dog was often the alleviation of symptoms of PTS. This led us to wonder if we could develop a program to help Veterans, who may or may not have a physical impairment, to cope with their posttraumatic stress.

In July 2009, NEADS undertook a 2-year study to more definitively evaluate whether specially selected and trained service dogs could lessen the symptoms of PTS in Veterans. This study, the Trauma Alert Dog program, was designed to assess the experiences of 10 to 15 Veteran-dog teams and to determine how the dog was assisting the Veteran with his trauma symptoms. Veterans who applied were telling us that they feared going into public places and had to sit with their backs to walls in order to feel safe. They found that they had difficulty with sleep and complained of frequent nightmares. Could a dog really help them with these issues?

For the PTS pilot study, we placed trained service dogs, with 15 combat Veterans (in groups of 3 or 4) diagnosed with PTS, who had served in Iraq or Afghanistan. The Veterans in the study were all from the New England area. It was our hope that the dog would provide a bridge for these Veterans that would help them to reintegrate into their environments with less anxiety. Veterans who also needed the tasks of a service dog as well as PTS support were given dogs that had dual functions. Following placement, the Veterans were closely followed for the first year and their progress evaluated.

To date we feel that this study has been quite successful. The results are being tabulated and we will publish our results in the near future.

Whether placing dogs with Veterans to aid them with their physical disabilities or with those who can benefit from the support of a dog to help them cope with their combat-related PTS, we, at NEADS, are strongly committed to meeting the needs of our Veteran clients.

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Service Dog Training Program for Treatment of Posttraumatic Stress in Service Members

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ABSTRACT

In July 2008, social worker and certified service dog trainer Rick Yount created the first Warrior dog-training program designed to be a safe, effective, nonpharmaceutical intervention to treat the symptoms of posttraumatic stress disorder (PTSD) and traumatic brain injury in Veterans and service members undergoing treatment at a large Veterans Administration residential treatment facility. In 2009, Yount was asked to establish the program at a prominent Department of Defense medical center. In October 2010, Yount was invited to create a service dog training program to support the research and treatment mission at the new National Intrepid Center of Excellence (NICoE), in Bethesda, Maryland. This program, now being offered through the nonprofit foundation Warrior Canine Connection, continues to produce anecdotal evidence that training service dogs reduces the PTSD symptoms of Warrior-trainers and that the presence of the dogs enhances the sense of wellness in the NICoE staff and the families of our Wounded Warriors. Under the research leadership of the NICoE, the Warrior Canine Connection research team plans to systematically investigate the physiological, psychological, and behavioral benefits of this program.

BACKGROUND

In 1996, Rick Yount, a social worker who specialized in working with children in the foster care system, was directed by the court to transport an 11-year-old boy from his biological mother to an emergency foster home. Yount took his new golden retriever pup, Gabe, along for the ride and found that this young dog had a knack for soothing a child, even during the most traumatic times. Yount subsequently had Gabe certified as a therapy dog, and Gabe began accompanying him to work every day.

In 2001, Gabe inspired Yount to create the award-winning Golden Rule Assistance Dog (GRAD) program. The Morgantown [West Virginia] Alternative Learning Center hired Yount to offer his GRAD program to at-risk teens unable to participate in the public school system. Training service dogs helped the teens develop social and emotional skills. Two of the GRAD-trained assistance dogs were partnered with disabled Veterans.

In 2008, Yount created a similar program to help troops returning from combat zones cope with the trauma of war. The Warrior-trained service dog program he established at a large Veterans Administration residential treatment center for posttraumatic stress disorder (PTSD), was conceived as a safe, effective, nonpharmaceutical intervention to help treat the symptoms of

PTSD and traumatic brain injury. The program was also designed to offer service members suffering from PTSD the opportunity to reengage in a critical military support mission while receiving treatment for their psychological wounds. The purpose-bred program dogs, trained by service members with PTSD, become highly skilled assistance dogs capable of offering Veterans with disabilities the social support and mobility assistance they need to enhance the quality of their lives. The Warrior Ethos has inspired even the most traumatized service members to participate in and benefit from the program. Approximately 200 service members have participated in the pilot for this service dog training program at the Veterans Administration (VA) treatment facility. Five Warrior-trained service dogs have been placed with Veterans. Two service members have become accredited service dog-trainers and are pursuing careers in this field.

In 2009, Yount and the VA team presented anecdotal program observations at the Veterans Administration National Mental Health Conference and the annual meeting of the International Society for Traumatic Stress Studies. Based on the promising effects, Yount was asked to establish the program at a prominent Department of Defense medical center. Over 50 Soldiers have participated in the formal internship program or

the patient service dog training program since February 2009.

In October 2010, Yount was invited to design a service dog training program at the new National Intrepid Center of Excellence (NICoE), located on the campus of the Walter Reed National Military Medical Center in Bethesda, Maryland. The NICoE is a medical facility dedicated to the research, diagnosis, and treatment of military personnel suffering from traumatic brain injury and psychological health issues. Through this program, now being offered through the nonprofit foundation Warrior Canine Connection (WCC), approximately 85 Wounded Warriors have had direct involvement with the service dogs in training at the NICoE.

The idea of incorporating a volunteer service dog training program specifically designed to remediate the core symptoms of PTSD builds on a well-described body of research into the use of therapy dogs with patients who have psychiatric disorders.^{1,2} Studies have shown that under stressful conditions, the presence of a dog is effective at reducing stress responses in healthy adults, adults with hypertension, and in children with attachment disorders.^{3,4}

The WCC service dog training program provides Wounded Warriors with PTSD the opportunity to engage in highly focused, safe, positive social contact with dogs that are specifically bred for the temperament that best responds to and solicits therapeutic social engagement. Anecdotal information from this program supports previous findings that suggest that training service dogs reduces the symptoms of PTSD in the Warrior trainers.

MILITARY NEED FOR SERVICE DOGS

In 2009, Seal et al⁵ found that approximately 40% of Iraq and Afghanistan Veterans treated at American health centers during the previous 6 years were diagnosed with PTSD, depression, or other mental health issues. Their study also found that a lack of social support (separated, divorced, widowed, etc) may pose a serious risk for new postdeployment mental health problems and underscores the need for social support services for returning Veterans who are unmarried and/or without social support. Sixty percent of PTSD patients still meet the criteria for PTSD after being treated with empirically supported interventions.⁶⁻⁷ Therefore, it is imperative to explore adjunctive treatments for PTSD that may improve outcomes.

There is also substantial interest in service dogs among Veterans with spinal cord injuries. In 2007, Brashear and Rintala reported that 30% of Veterans with spinal cord

injuries indicated at least some interest in obtaining a service dog, and 42% desired information concerning service dogs.⁸ This urgent need of Veterans for well-trained service dogs has been recognized by Congress with passage of several laws authorizing the Department of Veterans Affairs to provide service dogs to disabled Veterans. Further, the Army Family Action Planning Committee named “funding of service dogs for Wounded Warriors” as their number 2 priority for 2010.⁹

COST EFFECTIVENESS

The WCC program breeds its own high-quality, purpose-bred service dogs. Warrior Canine Connection staff or trained “puppy-parents” take responsibility for the welfare and behavior of the dogs at all times when the dogs are on military or Veterans Administration property. This circumvents the logistical difficulties of owning and keeping service dogs on military or Veterans Administration property. It also affords active-duty service members and Veterans who cannot or do not own dogs the opportunity to experience the high quality connection with a dog that can provide powerful relief of PTSD symptoms. The program is also highly cost-effective, providing dog-assisted therapeutic relief to the largest number of PTSD patients with a limited number of service dogs. The Warrior-trainers experience relief from their PTSD symptoms while creating highly valuable service dogs that can be provided free of charge to Veterans with disabilities. The net result is a highly symbiotic, effective method of meeting several critical needs of Wounded Warriors and their caregivers.

WORKING DOGS/WORKING TRAINERS

The WCC training philosophy is based on positive methods of shaping behaviors that are most effective at forming strong social bonds. Mastering the skills and patience required to train a service dog helps the WCC trainers to regain control of their emotions, focus their attention, and improve their social competence and overall sense of wellbeing. Two participants in the original Veterans Administration pilot program have gone on to pursue accreditation as professional dog trainers, and it is anticipated that many more will be inspired to become professionally involved in creating the thousands of service dogs that will be needed by our Wounded Warriors.

DOGS HEALING THE WORKPLACE

The impact of the WCC program has been observed to reach well beyond its participants. Health practitioners, staff, and patients being treated throughout the Department of Defense medical center report feeling happier just having such beautiful, loving, well behaved dogs with which to interact throughout the day. These

frequent and fun encounters also offer Warrior-trainers the therapeutic opportunity to share their positive experiences with fellow Veterans and service members.

DOGS HEALING THE HOME

The methodology used in training service dogs to assist individuals with mobility impairments has striking similarities to the best practices of effective parenting. The goal of creating a respectful and responsible service dog requires the employment of sound behavioral shaping techniques based on positive and humane methods. Using the service dog training to draw attention to these parallels provides a means to teach critical parenting tools in a nonthreatening manner.

CLINICAL OBSERVATIONS AND PARTICIPANT TESTIMONIALS

As reported by Yount and his VA colleagues at the 2009 Veterans Administration National Mental Health Conference¹⁰ and the Annual Conference for the International Society for Traumatic Stress Studies, anecdotal reports collected from clinicians and program instructors indicate that Veterans and service members who engage in the training of service dogs exhibit the following improvements:

- ▶ Increase in patience, impulse control, emotional regulation
- ▶ Improved ability to display affect, decrease in emotional numbness

- ▶ Improved sleep
- ▶ Decreased depression, increase in positive sense of purpose
- ▶ Decrease in startle responses
- ▶ Decrease in pain medications
- ▶ Increased sense of belongingness/acceptance
- ▶ Increase in assertiveness skills
- ▶ Improved parenting skills and family dynamics
- ▶ Fewer war stories and more in the moment thinking
- ▶ Lowered stress levels, increased sense of calm

The ability of these dogs to help Warrior-trainers become less reliant on powerful pain and antipsychotic medications takes on particular significance in light of the 2010 Department of Defense report, *Health Promotion, Risk Reduction, and Suicide Prevention*,¹¹ which found that suicides and accidental drug overdoses are on the rise, particularly in the Army and Marine Corps. According to the report, one third of Army suicides involve prescription drugs, and 14% of Army personnel are taking prescribed opiate painkillers. Many service members also take more than one kind of medication, including those that are known to increase suicidal thinking in patients.

The following voluntary interviews* were given to WCC staff by service members participating in the WCC program:

It's been great working with the dogs. They are helping me with my depression, anxiety, and sleep. With a WCC dog at my side, my stress measurements returned to normal for the first time.

The dogs have a drive to work and take care of people. They do so because they care, not because they have to. It's great knowing that I am helping to train a service dog for a service member who has physical disabilities.

The dog I am training bonded quickly with my daughter and me. I was given the opportunity to take the dog I bonded with overnight while my 4-year-old daughter was visiting. She was able to see a different side of me. Instead of being a strict father, she and the dog were getting praised for doing something right rather than being punished for something they did wrong. It brought to light



Photo courtesy of the authors.

* All persons involved in these accounts gave consent for publication.

The Authors

a different parenting technique that she responded to better. The dog allowed us to connect in a very positive way. Working with the dog has taught me patience, which also carries over to being a parent.

It is hard for me to put into words how very important working with these dogs has been to me. After my initial injury, I was told that I would not be able to lead and train Soldiers in the way I had always hoped I would be able to do. Working with the WCC dogs gave me a purpose again and a way to continue to give back to Soldiers, which has been really good for me. Training these dogs helps me rebuild my confidence level and to feel I am functioning as an effective member of the Army and of society.

Going out into crowded public places has been very hard for me. However, to train a service dog, you have to lead them confidently through places like grocery stores and on underground trains. I find that while teaching the young dogs how to navigate these places, I am much more comfortable as well. I am even learning how to enjoy interaction with strangers who approach me to talk about the dog. Being allowed to sleep with a dog that I am training has been really helpful. I had been only managing to sleep a couple of hours a night before being cleared to have a WCC dog spend the night with me. That night I slept almost 6 hours and had no nightmares. Sleeping with the dogs has consistently improved my sleep time and I have fewer nightmares. One dog even licked me awake from one. I awake so much more refreshed. My wife has noticed the improvement as well.

WHY DOGS WORK: THE NEUROBIOLOGY OF THE HUMAN-ANIMAL BOND AND ITS RELATIONSHIP TO POSTTRAUMATIC STRESS

The use of psychiatric service dogs in various settings with patients who have psychiatric disorders is well-described.^{1,2} It is important to note that most combat traumatic injury is caused by humans, therefore humans may be potent triggers of PTSD symptoms and events. A dog, on the other hand, can be perceived as trustworthy and create a sense of security.

The results of animal and human experiments show that, under stressful conditions, the existence of a partner to which the subject shows attachment and bonding can produce a "stress buffering effect."¹² For example, interaction with animals reduces symptoms of depression¹³

and stress responses as measured by cardiac reactivity and serum cortisol.¹⁴

Research also shows that positive social interactions with dogs may offer a safe, effective, and relatively inexpensive way to increase endogenous levels of the neurochemical oxytocin and other important antistress agents in humans.

In 2003, Odendaal and Meintjes¹⁵ first showed that human-dog affiliative behavior (quiet play with the dog involving talking, stroking, and petting the dog with the human subject's attention focused completely on the dog) produced a significant change in neurohormones related to stress reduction: increases in beta endorphin, oxytocin (OXT), prolactin, dopamine, and decreases in cortisol. The most impressive increase was in plasma levels of OXT (doubling in both dog and human after an interaction session). Subsequent to that study, Nagasawa¹⁶ showed that focused eye contact between humans and dogs increased OXT levels in the human (urine level). Miller¹⁷ found that serum oxytocin levels increased more for women when interacting with their dogs than when reading nonfiction material. Most recently, Handlin et al¹⁸ found a significant increase in serum oxytocin in both dog and owner after 15 minutes of friendly interaction, along with a decrease in the heart rate of their owners. The authors concluded that this antistress effect indicates that sensory interaction with dogs can trigger a concurrent increase of oxytocin in the human brain. Neumann¹⁹ agrees:

It is very likely that such interactions activate intracerebral OXT pathways contributing to the positive mental and physical health effects of dog ownership.

The hypotheses gained support when Strathearn et al²⁰ found that elevations of peripheral oxytocin are, indeed, correlated with increased activity in the oxytocin-related hypothalamic-pituitary regions and the reward centers of the human brain.

The neuropeptide oxytocin has been shown to modulate symptoms important in the psychopathology of PTSD, such as anxiety including fear response and hyperarousal, interpersonal difficulties/social isolation, physical pain, and sleep disturbances. According to Marazziti and Dell'Osso, it is well established that OXT acts on the hypothalamic-pituitary-adrenal axis.²¹ Oxytocin neurons also modulate the locus coeruleus, the central amygdale, and other arousal centers of the central nervous system to attenuate stress-induced neuroendocrine activity.²² Oxytocin receptor-expressing neural circuits in the central amygdale connect to the medial prefrontal cortex

to suppress neurons that produce the freezing reaction to fear while promoting risk assessment and exploratory response to frightening stimulus.²³ Oxytocin has also been shown to reduce levels of endotoxin-induced levels of cytokines, adrenocorticotrophic hormone (ACTH), and cortisol.²⁴ All of these brain systems and neurochemical responses have been shown to be functionally important in PTSD.^{25,26}

Glucocorticoids and their upstream regulators, OXT, corticotrophin-releasing hormone, arginine vasopressin, and ACTH, have also been shown to be altered in PTSD.^{27,28} There is evidence that in PTSD there is deficient glucocorticoid signaling, whether from cortisol deficiency or from changes in the glucocorticoid receptor. As such, this has also been associated with deficient inhibition of immune response, resulting in increases of plasma and colony stimulating factor cytokines such as IL-6, IL-1 and TNF alpha.²⁹⁻³¹ Posttraumatic stress in combat veterans has been shown to be associated with an increased prevalence of diseases of inflammatory etiology, such as atherosclerosis, arthritis, etc.³² Oxytocin has also been shown to be a powerful antioxidant with antiinflammatory functions that quicken healing of wounds, interperitoneal sepsis, and renal ischemia in rodents and humans.^{33,34}

With respect to anxiety and arousal, in animal studies, OXT has been shown to potentiate the anxiolytic effect of diazepam through its action on the amygdale and inhibits the norepinephrine system's arousal of the sympathetic nervous system, while increasing parasympathetic tone.²¹ Also, OXT imbalances have been linked to anxiety in patients with major depression³⁵ and autism.³⁶

In rats, oxytocin and corticotrophin-releasing factor neurons co-localized in the paraventricular nucleus and bed nucleus of the stria terminalis strongly suggest that they provide a crucial feedback loop between these 2 systems that could significantly impact affective and social behaviors, particularly during times of stress.³⁷ Streipens and colleagues³⁸ have compiled a comprehensive review of the research showing that intranasal oxytocin application enhances a "plethora of prosocial effects" including: a reduction in interpersonal conflict and negative communication; promotion of trust in strangers; increased gaze to the eye region of faces; improvement in the correct identification of the internal emotional state of another; enhancement of the processing of positive social information compared to negative information; reversal in the effect of aversive conditioning of social stimuli;

enhancement of the buffering effect of social support on stress responsiveness; and reduced stress response in people with a history of early trauma.

War veterans with PTSD given one dose of OXT demonstrated decreased physiologic response to provoked combat memories.³⁹ Oxytocin has also been shown to modulate pain in humans^{40,41} and has been shown to impact sleep patterns in animal studies,⁴² two significant corollary symptoms of PTSD.

Oxytocin levels are naturally increased by loving gaze, gentle touch, warmth, and close social relationships. Olff et al⁴³ suggest that the "optimization of social support" might naturally boost oxytocin and aid in the treatment of PTSD symptoms. WCC's dogs are bred to do just that. They welcome nurturing touch and provide that profound sense of social support that appears to make them potent, natural oxytocin agonists and valuable therapeutic partners in the treatment of combat PTSD.

THE NEED FOR EMPIRICAL STUDY OF THE WARRIOR CANINE CONNECTION INTERVENTION

Based on the scientific literature and the clinical and anecdotal observations of the program to date, we hypothesize that the focused, positive interactions involved in training a service dog are linked to an increase in oxytocin, and reduction in biomarkers of stress and inflammation. Studies designed to investigate the causes and effects of the WCC program may provide valuable evidence that has been lacking in the study of animal-assisted therapy.^{44,45} We hope that the WCC service dog training study will advance not only our scientific understanding of the healing powers of animals in our lives, but provide the rigorous science that the Department of Defense and the Department of Veterans Affairs need to support animal-assisted therapy programs and the placement of service dogs with service members and Veterans with psychiatric and physical disabilities.

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Reclaiming Identity Through Service to Dogs in Need

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ABSTRACT

Dog Tags is an animal-assisted therapy offered by the Washington Humane Society (WHS) in partnership with the Walter Reed National Military Medical Center (WRNMMC). The program is open to all ranks of enlisted service members using WRNMMC services. Dog Tags is a 3-tiered certificate program allowing Soldiers, recovering at WRNMMC, to learn and apply progressively complex and challenging elements of canine positive reinforcement training to dogs awaiting adoption at the WHS. Although each tier is a self-contained and complete curriculum, subsequent tiers build on the skills and knowledge acquired in the previous one(s). Dog Tags Warrior/trainers work with fully-screened (health and temperament) shelter dogs to provide these dogs with mental stimulation, environmental enrichment, and socialization that are vital to their successful adoption and integration into new homes. The Soldiers also benefit because they develop new skills, build positive bonds with the dogs, and continue to serve their community.

dog tag *n.* 1. A metal identification disk attached to a dog's collar. 2. A military identification tag worn on a chain around one's neck.

Source: *Webster's II New Riverside University Dictionary*

To many wounded service members, the trauma of war has altered their sense of identity. Often it is the change in one's ability to cope in life because of mental and cognitive difficulties, or altered body image from burns or the loss of limb(s). Whatever the reasons, something is lost—often the confidence in one's capacity to serve and be productive given the new circumstances. It is recognition of this desire of Wounded Warriors to serve combined with the needs of shelter dogs that inspired the staff at the Washington Humane Society's (WHS) Behavior and Learning Center to develop Dog Tags, open (free of charge) to all ranks of enlisted service members recuperating at the Walter Reed National Military Medical Center (WRNMMC).

Dog Tags is a natural extension of the WHS's vision: to create ways for animals and people in need to help one another. It is one in a series of ongoing programs that actively encourage the human/animal connection, yet Dog Tags is unique in that it is tailored to a specific adult population, one that brings special understanding to help WHS's more challenging dogs. These Warrior/dog partners are superbly situated to emerge stronger and better able to cope because of shared experiences.

The Washington Humane Society is the only open-access animal shelter in the District of Columbia. No animal in need is turned away, and every effort is made

to place all adoptable animals in homes. Although the commitment to adoption is solid, not all dogs appear to be good candidates for placement in a family. Nevertheless, WHS takes the view that these dogs can learn, grow, and improve their behavior and their chance for adoption. But, given the volume of dogs that enter the shelter each year (2,000 to 2,500), evaluating them and implementing individual behavioral rehabilitation plans are daunting. This is where Dog Tags meets such needs, serving a vital function.

WARRIOR/DOG PARTNERS

All Dog Tag program participants face challenges. The recovering Soldiers at WRNMMC are dealing with the stress and pain of compromised agility and coordination. They are, to differing degrees, dependent on others for help; resulting in self-doubt about their identity as independent, self-reliant service members. Likewise, the dogs often come from traumatic situations and may be physically injured or emotionally scarred, demonstrating resource guarding by aggressively defending food, space, toys, etc. Other dogs are surrendered because of typical puppy or adolescent characteristics. They chew (furniture, carpets, clothes, and shoes), are "mouthy" (use their mouths to interact with people or other dogs, lacking bite inhibition), test boundaries (jump up, refuse to move, stand and bark), get into "mischief" (raid the trash, steal dirty clothes, chase the cat), or pee on the carpet.

In some shelter programs, due to lack of resources or expertise, behaviors such as mouthing and resource guarding can label a dog "unadoptable," which means

either rejection from a program and/or euthanasia. Yet, no matter the circumstances that bring these Warriors and dogs to WRNMMC and the WHS respectively, they are treated as individuals, their problems evaluated, and steps taken to help them reach a positive outcome; be it a return to the force, reintegration into civilian life, or a loving permanent home. Dog Tags is there to help these Warrior/dog teams create a new beginning.

For Soldiers, life at WRNMMC can be routine, boring, and/or full of surgeries and medical appointments. Finding an activity outside of the ordinary can be very helpful in making their stay more productive and enjoyable. It is similar for the dogs in the shelter environment, where often it is noisy and lacking in positive stimulation, which may be play and one-on-one time with people and friendly dogs. Both parties have temporarily lost their autonomy; having to live by the routines and requirements of others, making daily life frustrating, perhaps a little depressing. Dog Tags works to alleviate these stresses by creating a positive mentally and physically demanding environment where independence and self-determination is restored, bonds are established, and progress achieved.

METHOD AND STRUCTURE

Dog Tags is a 3-tiered certificate program designed to teach wounded Soldiers foundational skills in positive, reward-based animal training and care—skills essential to entry into the field of animal services. Each 8-week module is complete, self-contained, and earns certification upon completion. Although it is not required that students complete all 3 modules, when linked together, those modules become increasingly difficult and demand greater individual responsibility and creativity. Dog Tags is constructed such that students, from hobbyists to those wanting to launch a new career, can be accommodated and trained based on their goals and commitment.

Level I (first tier): 8 weeks, 1.5 hours twice a week at the WHS Behavior and Learning Center. The subject matter covers:

- ♦ Philosophies of training and learning theory.
- ♦ Historical trends in canine training techniques from harsh dominance to total positive methods.
- ♦ Conditioning: classical—stimulus elicits an involuntary response, eg smelling a food you dislike and feeling nauseated; operant—voluntary response to stimulus, eg, the dog offers to sit because it has earned him a treat.
- ♦ Observation of canine body language; eg, what is communicated when a dog's tail is high and stiff, hackles are raised, or belly is exposed.
- ♦ Foundational obedience skills: sit, down, wait, stay, come when called, etc.
- ♦ Introduction to canine parlor tricks: shake, roll over, crawl on your belly, etc.
- ♦ Agility obstacles: jumps over a hurdle or through a hoop, over an A-frame, through a tunnel, etc.
- ♦ Training equipment: leashes, harnesses, neck collars, head collars, and treat/bait bags.
- ♦ Motivational tools: food, touch, voice, play, etc.

Students work with fully-screened shelter dogs, training them in basic obedience and good manners, such as calm interactions with dogs and humans, to develop the quiet polite behavior necessary for typical home and neighborhood environments. All of the exercises help build confidence in both the dogs and the Warrior/trainers. All instruction with the dogs is given using humane, motivational techniques (food treats and praise as rewards while ignoring and/or redirecting unwanted behaviors). There are also readings, lectures, and written exams throughout the module to mark progress and identify areas for concentration and improvement.

Level II (second tier): 16 weeks (completion of Level I plus an additional 8 weeks), 1.5 hours twice a week at the WHS Behavior and Learning Center. Subject matter covers:

- ♦ Understanding and resolving common canine behavioral problems: chewing, house soiling, jumping up.
- ♦ Studying the art of assisting group classes: working on their observational and communication skills by helping outside student handlers with timing rewards, manipulating a leash, and treats.
- ♦ Offering individualized guidance; preparing enrichment activities for the kennel population awaiting adoption—stuffing Kong toys (KONG Company, Golden, Colorado) with tasty food items to alleviate boredom while dogs are in their kennels, etc.

As in Level I, there are readings, lectures and written exams throughout the module to mark progress and identify areas for concentration and improvement.

Level III (third tier): 24 weeks (completion of Levels I and II plus an additional 8 weeks), 1.5 hours twice a week at the WHS Behavior and Learning Center:

- ♦ In-depth instruction in canine relationships and pack dynamics.
- ♦ Learn to hold and conduct group obedience classes and private consultations with the general public.
- ♦ Advanced training in obedience and service dog exercises. The Soldiers use their more advanced knowledge of animal behavior to develop creative approaches to correct more complex behavioral problems.



They also perfect their listening, communication and interpersonal skills as they interact with the public and dogs outside the program while conducting private consultations and group obedience classes.

BENEFITS AND OBSERVATIONS

Although each Soldier is awarded a certificate documenting his or her service and successful mastery of the skills and knowledge upon completion of a training module, there are numerous positive physical and mental/emotional benefits derived from the experience.

Initially many Soldiers come to Dog Tags to break the monotony of life at WRNMMC, but over time they find the physical and mental demands of handling an untrained dog exquisitely challenging and uniquely therapeutic on several fronts:

- Physical. The subtle or, depending on the dog, not so subtle demands on balance and fine motor control to manipulate prosthetic legs and arms/hands.
- Mental. Teaching a dog basic manners improves observational skills and timing. Capturing minute advances and rewarding them quickly builds

confidence and trust. Complex problem solving: breaking down elaborate tricks (eg, gathering toys and putting them in a box) into tiny steps and building on these to accomplish the final task. Perseverance: keep the goal in mind, and be willing to make tiny steps to get there.

- Emotional. Patience: learning what motivates a dog (touch, food, high happy voice, quiet gentle coaxing) and using this to advance as a team. Coping with frustration when physical and verbal force are not in the training tool kit—finding a way to end on a good note is a very valuable skill. Confidence: seeing the results of hard work and communication coming together and achieving the goal. Most important; knowing when to stop a training session and play or just spend quiet time together.

The dogs benefit in similar ways. Dogs chosen for the Dog Tags program are fully screened (health and temperament) prior to selection for Dog Tags, but may have behavioral or physical problems that make them less likely to move out of the shelter and into a home quickly. Nevertheless, the screening process indicates their potential to reach a positive outcome through consistent, kind training with the Soldiers.

A case in point is Smitty, a beagle/pug mix that came into the shelter severely emaciated and neglected by his owner. Smitty's circumstances and resulting condition left him with extreme timidity toward people and food guarding issues. Nevertheless, his temperament evaluation identified his potential and, as it turned out, he was a perfect canine candidate for Dog Tags.

Smitty's rehabilitation began with Soldier/trainers in Level I. They worked with him on foundation obedience skills to build his confidence and trust with humans. Simultaneously, advanced Soldier/trainers, under WHS staff supervision, devised and executed a behavior modification plan to overcome his resource guarding. For example, trickling kibble into his dish so he associated humans as a source for food; interspersing his kibble with obedience training and high value treats, such as hot dogs, to help Smitty realize he could work with humans, have fun, and get fed. In the end, this intense and holistic approach to training earned Smitty an American Kennel Club Canine Good Citizen certificate, often the first step for dogs in training for therapy work, and a successful adoption.

The Soldier/trainers not only witnessed Smitty's progress, but were vital to his recovery and eventual adoption. Dog Tags Soldier/trainers were able to provide

the intense training and attention Smitty deserved, and he surpassed all expectations. Everyone's confidence soared because their training and skills were truly tested and proved to be solid and valuable.

OUTCOMES AND CONCLUSIONS

Since 2008, Dog Tags has trained over 40 Soldiers and helped approximately 75 dogs into new homes. As of this writing, at least 2 Soldiers are in the process of establishing a dog training business, and many others have returned to school furthering their education to become veterinary technicians or enter some other aspect of the animal services industry.

Additionally, Soldiers have reported other benefits that extend beyond the scope of what Dog Tags was designed to provide. The WHS and its staff have become a home away from home and an extended family, where Soldiers can visit and help. Volunteering at the shelter

has helped Soldiers reestablish work routines and solid work habits, helping them to become more outgoing and social than before entering the program, in turn lowering stress and increasing happiness.

Dog Tags has honored service, built confidence, revealed new talents, provided new job opportunities, and much more. The Warrior/trainers rediscovered, reinvented, and reclaimed their identity as strong and capable individuals whose talents and skills continue to save lives and make a huge difference for the dogs and families they serve.

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Photos courtesy of the Washington Humane Society.

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Ms Alers, an archivist at the Smithsonian Institution, is a volunteer at the Washington Humane Society.

When this article was written, Mr Simpson was Director, Animal Behavior and Training at the Washington Humane Society.



Therapy Dogs and Stress Management Assistance During Disasters

Jan Shubert, LCSW

HISTORICAL OVERVIEW

The therapeutic use of animals can be traced back to the times of the ancient Egyptians, Greeks, and Romans. These practices were abandoned for centuries, however, as a result of changing religious and cultural mores. The resumption of the use of animals for therapeutic purposes can be attributed to the efforts of a Quaker merchant in 18th century York, England.^{1,2} William Tuke, acting on his dismay over the death of a Quaker in the York Asylum, raised funds to open the York Retreat in 1796 to care for the insane. Unlike in other facilities for the mentally ill of that time, patients at the York Retreat were treated with respect, allowed to pursue a variety of activities and freely wander the grounds, which were inhabited by a variety of small animals. Tuke's efforts, combined with a very negative report on conditions in British mental hospitals,² gradually led to improvements in the treatment of the mentally ill, including at the notorious Bethlehem Hospital (commonly known as Bedlam), where it had been the accepted practice to charge admission to the public to view the inmates.³

In the 19th century, animals also were incorporated into the treatment of individuals with other disorders, including epilepsy, at Bethel, a residential facility in Germany established for young people suffering from epilepsy. Originally established as a working farm, Bethel still exists today and provides assistance to individuals dealing with a broad range of disabilities.¹ During the Crimean War, Florence Nightingale kept cats both for rodent control and companionship, and was known to have had numerous cats throughout her lifetime as well as recommend their companionship for the chronically ill.² In the United States, the first documented therapeutic use of animals occurred during World War II at a Pawling, New York, convalescent hospital for injured members of the Army Air Corps. Apparently the hospital was used primarily as a rest home for patients suffering from "operational fatigue,"⁴ which today would be called posttraumatic stress disorder.

DEVELOPMENT OF THERAPY DOGS: A BRIEF OVERVIEW

In a sense, the use of dogs as therapeutic adjuncts developed accidentally. Although Sigmund Freud was known

to have been accompanied by his chow dog during his analysis sessions with patients toward the end of his life, he may not have initially included his dog in the sessions with any specific goal in mind other than the comfort it provided to him. After a while, however, he apparently noticed that the presence of the dog seemed to provide his patients with feelings of security and acceptance, and facilitated their analyses.⁵

The second accidental use of a dog as a therapeutic adjunct tool occurred when Boris Levinson unintentionally exposed a child client to his dog, Jingles.⁶ The mother and child had arrived early for their appointment, before Levinson had had time to confine his dog. Levinson had been having difficulty establishing rapport with the child, but Jingles paved the way by playing with the child, thus facilitating the child's acceptance of Levinson himself. That positive experience led to Levinson's frequent inclusion of Jingles in his therapy sessions. Although Levinson's efforts to promote the use of dogs in therapy were not well received publicly within his profession, a survey he conducted among clinicians in the New York State Psychological Association indicated that more than one-third of the respondents had used animals in their practices.⁷ Gradually, Levinson's efforts stimulated research into the mental and physical health effects of including dogs and other animals in therapeutic interactions and also into the effects of keeping pets.⁸⁻¹⁰

In the 1970s, 2 organizations were established that also contributed greatly to the use of dogs as therapeutic adjuncts. In 1976, Elaine Smith founded Therapy Dogs International (TDI). While working as an American nurse in England, she had observed the way patients responded to the dog that accompanied the hospital chaplain on his visits. Upon her return to the United States, she established TDI in New Jersey and developed a program to train dogs to visit institutions.¹¹ Therapy Dogs International also certifies dogs and maintains a registry of certified dogs and handlers. The following year the Delta Foundation was established in Portland, Oregon, by a number of medical and veterinary professionals who were interested in the effects of human-animal relationships. That organization became the Delta Society

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in 1981. The Delta Society also trains, certifies, and registers service and therapy dogs (ie, Delta Society Pet Partner teams) and also continues its interest in research into human-animal interactions.¹²

To bring some clarity to this emerging field, the Delta Society divided animal-associated interactions into 2 categories: animal-assisted activities and animal-assisted therapy, under the following definitions:

Animal-Assisted Activity (AAA) provides opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance the quality of life. AAAs are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers in association with animals that meet specific criteria. Key features include absence of specific treatment goals; volunteers and treatment providers are not required to take detailed notes; visit content is spontaneous.

Animal-Assisted Therapy (AAT) is a goal-directed intervention in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or delivered by a health/human service professional with specialized expertise and within the scope of practice of his/her profession. Key features include specified goals and objectives for each individual and measured practice.¹³

THERAPY DOGS AND CRISIS RESPONSE

The first example of a major disaster response by teams of therapy dogs and handlers was the bombing of the Murrah Building in Oklahoma City in 1995. At the request of the Federal Emergency Management Agency, TDI sent 20 teams to provide comfort to the responders, victims, and their families. In 1998, the work of therapy dogs took another step forward as a result of the response of 2 Delta Society Pet Partners teams to a shooting at Thurston High School in Springfield, Oregon. The teams were deployed by the National Organization for Victim Assistance. Twenty-five people were injured and 4 were killed in that incident. In their work at the school, the 2 Delta teams were able to reach students who had not been receptive to mental health professionals. Cindy Ehlers and her keeshond, Bear, made up one of the teams. While the Thurston High School response was quite small in comparison to the Oklahoma City incident, it was significantly larger in terms of its long-term effect, because it created a champion for the field that was to become known as animal-assisted crisis response.

Ehlers continued her training with Delta, becoming an evaluator and then an instructor. In 1999, convinced by her Thurston High School experience that dogs could contribute greatly to comforting and supporting shocked and grieving people, she founded HOPE Pets and developed the first special crisis response training for pet partner teams. The organization offered its first formal animal-assisted crisis response (AACR) training in July 2000,¹⁴ focusing primarily on exposing and training the dogs to deal with situations they might experience traveling to and working at a disaster. A second training, modified to include more information on emotional trauma for the human partners, was held in June 2001.

AACR at Ground Zero

In September 2001, Ehlers, her second keeshond, Tikva, and 3 other HOPE AACR teams were contacted by the American Red Cross and asked to travel to New York City in the aftermath of the terrorist attacks on September 11. Ehlers' experiences and those of one of the other Oregon Pet Partners teams, Josiah Whitaker and his German shepherd, Hoss, were described in the book, *Therapy Pets: The Animal-Human Healing Partnership*.¹⁵ Both teams spent 2 weeks working 12-hour days walking the perimeter of Ground Zero to provide support to the firefighters and others searching for bodies, visiting the Family Assistance Center where family members awaited word of their loved ones and also applied for assistance, and riding the ferry boats that took grieving families to view the Ground Zero site.

Ehlers and Whitaker were frequently paired with 2 mental health professionals from Ohio, James Rogers and Karen Soyka. In a brief article they wrote a few years after the event, Rogers and Soyka referred to their work with the HOPE teams as "another gift – or experience of grace,"^{16(p28)} reflecting on how the presence of the dogs had allowed them to connect with the recovery workers in ways that would have been very difficult if they had been alone.

In a discussion of appropriate uses of AACR at a disaster, Greenbaum¹⁷ identified a number of ways in which the animals were helpful. They served as a therapeutic bridge and helped to establish rapport with a mental health professional. This was certainly the experience of Rogers and Soyka.¹⁶ Greenbaum¹⁷ also noted that the animals served as symbols of qualities that individuals had or wished they had (ie, afraid, helpless, brave, strong) or they were used to communicate thoughts and feelings indirectly (ie, speaking for the dog: "she's afraid"). She pointed out that the animals helped to normalize the situation for the responders by reminding them of their

lives outside of the situation. In addition, petting the animals is known to exert a calming effect^{7,18} by facilitating the body's production of oxytocin, a hormone known to produce a calming effect.^{19,20} These effects were noticeable to the human members of the teams. Last, the animals served as protective shields for the families riding the ferry boats to view Ground Zero and enabled them to begin to find the strength to deal with their losses. Frequently, the animal-handler teams responding to the terrorist attacks were paired with mental health professionals with results similar to those described by Rogers and Soyka.¹⁶ They served a variety of populations, ranging from the first responders actually engaged in recovery operations, to American Red Cross, Federal Emergency Management Agency, and Salvation Army workers, as well as families of victims.

Approximately 500 animal-handler teams* provided assistance in New York, New Jersey, and Virginia in response to the terrorist attacks on September 11, 2001.¹⁷ Numerous breeds of dogs were used in this response, including golden retrievers, Labrador retrievers, greyhounds, collies, cocker spaniels, standard poodles, Shetland sheep dogs, Samoyeds, Portuguese water dogs, Dalmatians, and a variety of hounds and mixed breeds.²² Even a few cats were used. The teams came from a variety of organizations and geographic locations. Most of the teams had training in AAA/AAT, but, except for the initial trainings organized by Ehlers in Oregon, no formal crisis response training programs existed at the time. This pointed to the need to distinguish between AACR and AAT/AAA. How does AACR differ from AAA/AAT? According to Teal, animal-assisted crisis response

is the utilization of trained evaluated animals and handlers in crisis and traumatic recovery sites and centers to assist with the psychological needs and physiological stress factors of those persons present. The Visiting Animal is utilized as a transitional object to provide those in crisis and traumatic situations with a reality orienting relationship providing for solace, deep comfort and reduction of physiological stress signs. The utilization of animals in trauma and crisis response may provide critical grounding experiences for the beginnings of future psychological recovery and healing from aforementioned event.^{23(p2)}

Providing assistance in the aftermath of this event presented a major learning experience for the animal-handler

*It should be noted that 96 search and rescue teams also were deployed to New York, New Jersey, and Virginia sites. Although their mission was very different from that of the AACR teams, there were many instances where these dogs provided the same type of comfort to the responders.²¹

teams.²² They learned that both animal and handler could be exposed to unaccustomed sights and smells, as well as potentially hazardous substances. They learned that handlers needed to know crisis intervention techniques. Their dogs needed to be able to tolerate frequent handling and bathing, as well as the wearing of booties to protect their sensitive feet. For those dogs assisting on the ferry boat rides, they had to be able and willing to board the boat as well as tolerate the ride and the lack of any down time during the trips.

Perhaps the most important lesson learned was that neither the dogs nor the handlers could tolerate the 12-hour days under the horrific circumstances without detrimental effects. It is likely that many of the handlers, and most likely the dogs, suffered from secondary traumatic stress from their exposure to the severe emotional pain of the responders and the families of the victims. In addition, although respiratory protection was available for the handlers (most, however, chose not to use it for a variety of reasons), there was not then nor is there today any respiratory protection for dogs. They were likely exposed to a variety of hazardous substances, including particulate matter, asbestos, metals, dioxin-like material, and volatile organic compounds.²⁴ Although there was no formal monitoring program for the therapy dogs, there was one for the search and rescue dogs in which many of the therapy dogs participated. Among the dogs known to suffer from respiratory difficulties is Ehlers' dog, Tikva (C. Ehlers, oral communication, February 2009).

In addition to the lessons learned cited above, Greenbaum¹⁷ pointed out that it is important to recognize circumstances and locations for which AACR is not appropriate and also to be aware of allergy, phobia, and cultural issues (eg, individuals from some cultures do not react positively to dogs). When considering criteria for both human and canine members of an AACR team, Greenbaum¹⁷ called for education in critical incident stress management for the human team member, and discussed a number of criteria for the canine team members. These include good health and currency of immunizations, freedom from phobias, high comfort levels with diverse populations and dogs as well as other species, acclimation to crowding, good food refusal skills, good basic obedience skills, a calm demeanor, transportation training, confinement training, ability to urinate/defecate on command and on different surfaces, and training for various types of stimuli (eg, sirens, construction equipment noises). In addition, human members of the teams must be able to assess and deal with the stress levels of their canine partners by knowing when to remove them from the field.

Greenbaum¹⁷ noted that there were 2 days of memorial events held in Liberty State Park in New Jersey and at Ground Zero, September 10 and 11, 2002, on the first anniversary of the 2001 terrorist attacks. Four AACR organizations, Bright and Beautiful Therapy Dogs; Dogs in Service, Inc; St. Hubert's; and a chapter of Therapy Dogs International (S. D. Greenbaum, oral communication, April 2011), collaborated to ensure that enough AACR teams would be available. According to Greenbaum,¹⁷ this was the first time 4 AACR organizations collaborated under a single incident command system. She considered this to be a constructive model for the future of AACR.

DEVELOPING AACR TRAINING

After Ehlers returned to Oregon from New York, she changed the name of HOPE Pets to Hope Animal-Assisted Crisis Response to reflect the fact that the dogs were much more than pets. She also incorporated the organization. She then set about developing a 4-day AACR training program that focused on both the canine and the human components of the team. Training topics included animal/handler safety, animal first aid, important canine equipment for deployments, and animal behavior basics. Background information on disaster mental health and stress management also was part of the training. The last 2 days of the training focused on travel/transportation training and disaster simulations. The teams rode on buses, went to an airport, used public restrooms, and boarded an airplane. They then participated in a disaster exercise in which a local fire department played a role. At the end of the 4 days, trainee teams were evaluated for their readiness to continue training with the organization.

Ehlers went on to train numerous teams for Hope AACR and responded to Hurricane Katrina in 2004. Then she left Hope AACR and founded another organization initially called AACR (now known as National AACR). The 2 organizations have trained approximately 200 AACR teams nationwide and present the most consistent and uniform training available in the field. What began with the response of 2 therapy dog teams to a high school shooting has resulted in national recognition of the special talent that dogs have to alleviate stress in civilian life as well as in the military.* Between them, the 2 organizations have responded to the September 2001 terrorist attacks, along with the 10th anniversary memorial; Hurricanes Katrina, Rita, and Ike; California wildfires; Virginia Tech and Northern Illinois University shootings;

and countless local incidents. The AACR response to the Northern Illinois University shootings was featured in the "Making a Difference Today" segment of the NBC Today Show on July 14, 2008 (available at: <http://today.msnbc.msn.com/id/21134540/vp/25673508#25673508>).

Recently, in recognition of the incredible growth of the field and the number of different organizations now offering AACR training and certification, the 2 founding organizations collaborated on the development of Animal-Assisted Crisis Response National Standards. The purpose of the standards is to move toward uniform training and oversight to aid in mutual deployments, as well as to ensure the well-being of the canine members of the AACR teams.²⁵ First, the standards call for training by instructors who are both actively involved in AACR and familiar with the incident command system. Then, the standards then go on to identify requirements for training, evaluation, experience, certification, standards of conduct, and AACR organizations. According to former National AACR President Ehlers, "These standards are the first of their kind....They give emergency response agencies the tools they need to call on the right AACR teams."²⁶ HOPE AACR President Amy Ridout added, "When emergency response agencies call on AACR teams that follow the national standards, they will know that they are getting teams that are not only committed to helping people, but also are experienced in crisis response."²⁶ Equally important, the development of these national standards is an indication that the organizations are truly paying attention to the lessons learned after the response to the September 2001 terrorist attacks.

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*See articles in this issue highlighting the military use of dogs for operational stress control (page 46), posttraumatic stress disorder (pages 57, 63, 70), and rehabilitation of Wounded Warriors at military medical facilities (page 57).

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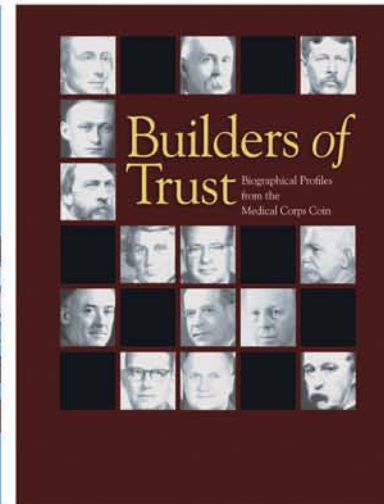
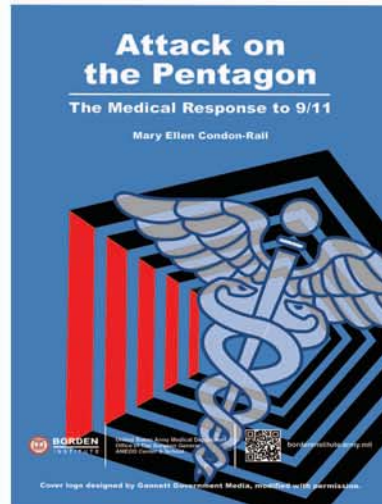
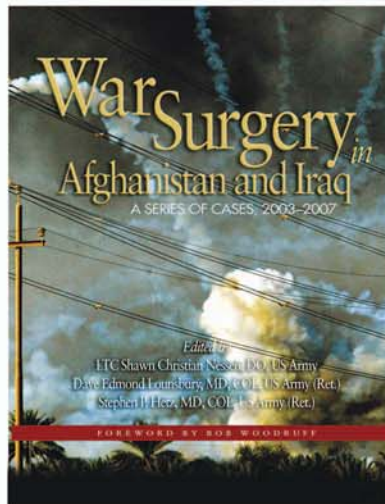
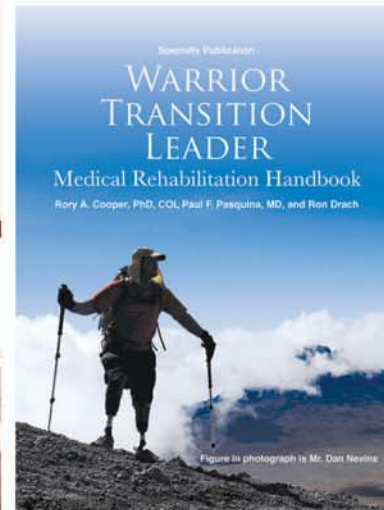
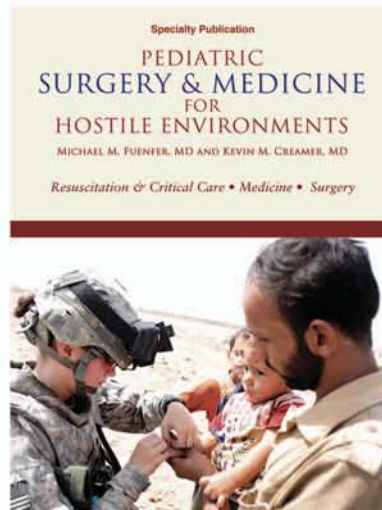
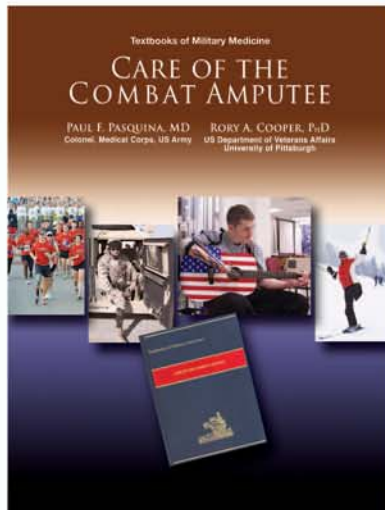
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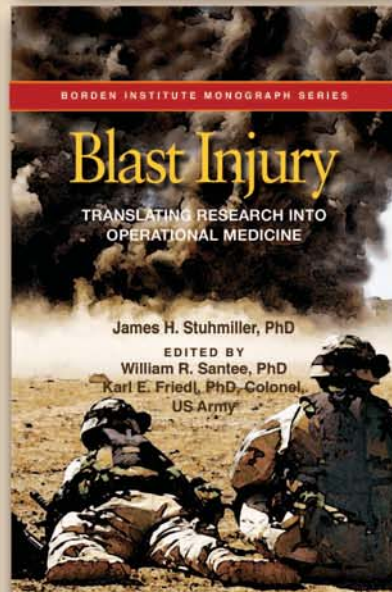
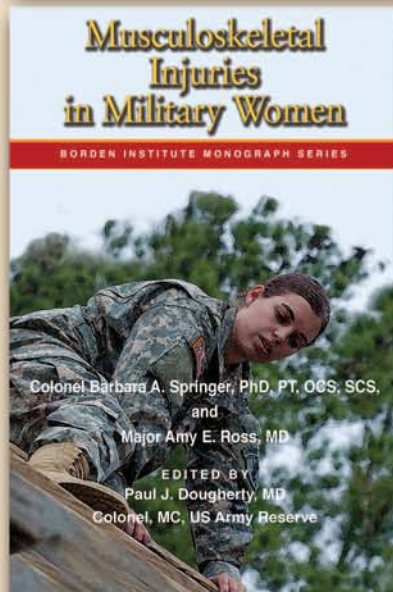
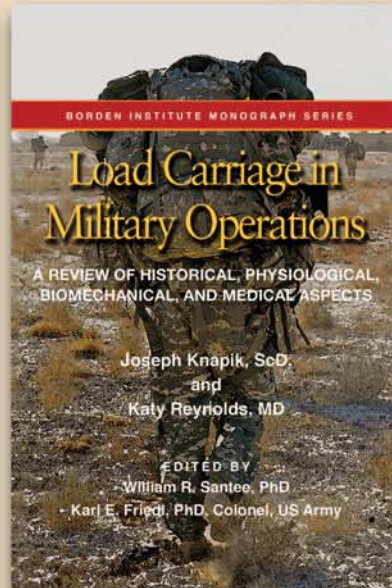
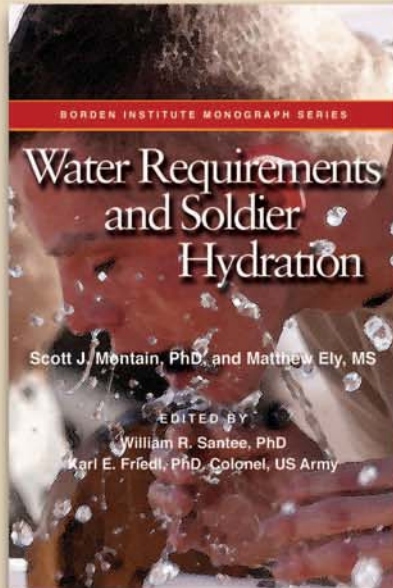


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