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Can Service Dogs Improve Activity and Quality of Life in Veterans with PTSD?

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Table of Contents

I. INTRODUCTION and BACKGROUND

In this section we present an overview of the significance and background of dogs for mental health conditions.

- **Significance of Study and Relevance to Veterans:**

The number of Veterans with post-traumatic stress disorder (PTSD) within the VA population has increased dramatically in the past years, largely due to Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF), but also due to increasing numbers of Veterans from all eras seeking treatment and disability claims. PTSD is associated with increased disability and decreased mental and health functioning (Gellis et al, 2010; Magruder et al., 2004). Most treatments are designed to reduce symptoms, with the expectation that improvements in functioning and decrease in disabling health conditions will naturally result; however, for many Veterans, PTSD is chronic, and symptom management is the best hope. As with many illnesses, which cannot be cured, strategies to decrease limitations on activity and improve quality of life are important. The use of Service dogs is a potential strategy that has successfully decreased limitations and increased quality of life for individuals with a variety of chronic and disabling conditions, including sensory impairments (visual and auditory), seizures, mobility, and mental health conditions.

Case studies demonstrate that Service Dogs trained for persons with mental health disabilities may fill a need for people with PTSD. As part of the National Defense Authorization Act of 2010, , Congress enacted a law that stated, "a pilot study would be completed" to determine the benefits of Service Dogs in helping individuals with mental and physical disabilities. As a result, the following study is proposed. Results of the proposed study are expected to inform future medical benefits policy for use of Service Dogs for Veterans with mental health diagnoses, specifically PTSD.

- **Overview of PTSD:**

PTSD is in the family of trauma and stressor-related disorders in the newly released DSM-V (APA, 2013). The definition requires that a person has experienced a traumatic event and has met symptom criteria in 4 clusters: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. Though not codified as an official psychiatric disorder until 1980 in the DSM-III, there have been a number of epidemiologic studies over the past 30 years – especially among Veterans.

These studies have established that the lifetime prevalence of PTSD in the US population is 7.8% (Kessler et al. 1995). That study also found that the prevalence is about twice as high among women as men (5.0% vs. 10.4%), and this has been a consistent finding across a variety of populations and methods (Tolin & Foa, 2008). In US military Veterans, prevalence estimates have varied, depending on many factors, including war era, service branch, and deployment status. A recent meta-analysis showed that the odds of PTSD for deployed versus non-deployed Veterans varied from 1.42 (for OIF/OEF era) to 3.58 (for Vietnam era) (Magruder and Yeager, 2009). New CSP studies demonstrate that: 1) the prevalence of PTSD remains high in male

Vietnam Veterans (Goldberg et al., in review, a); 2) delayed onset PTSD is not uncommon (Magruder et al., in review); and 3) those with PTSD have significantly decreased functioning and increased disability (Goldberg et al., in review, b). The recent doubling of PTSD cases among Vietnam-era Veterans seeking VA mental health treatment supports this.

With our better understanding of PTSD in the last 35 years, there have been a number of advances in treatment. In addition to medications (including SSRI's, sleep medications, prazosin), there are a number of successful psycho-social approaches. These include cognitive behavioral treatment, exposure therapy, and eye movement desensitization and reprocessing (or EMDR) treatment.

The measure of success for PTSD treatments is reduction in specific symptoms. As with many illnesses, symptoms may abate or be controlled, but functioning may still be affected and improvements in quality of life may lag far behind symptom reduction. Needed are approaches for improving functioning and quality of life that can be implemented in concert with existing treatments.

In fact, the United Nations published data on PTSD worldwide using disability adjusted life years (DALYs) as the metric (WHO, 2004). These data show that the US was near the top of all countries and that PTSD "costs" 58 DALYs per 100,000 population -- the same rate as for Parkinson's disease in the US.

1. How PTSD is Assessed

In 2013, the American Psychiatric Association revised the diagnostic criteria for PTSD in the DSM-5 (revision of DSM-4). Diagnostic criteria include history of a qualifying traumatic event and a combination of symptoms from each of the four symptom clusters (intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity) (National Center for PTSD, 2013). There are many accepted measures used to assess PTSD symptoms. Of note, several validated measurement instruments are in the process of revision to align with the new DSM-5 criteria.

Structured interviews or self-report formats are both acceptable means of PTSD assessment and/or diagnosis. There is a wide range of information included in individual measures, from general inclusion of symptoms to very focused measurement of each of the 17 PTSD symptoms (National Center for PTSD, 2013). Information regarding stressful life events in the past and about factors involved with past and current adjustment is needed for a thorough assessment. This can be accomplished by using multiple sources of assessment data. This will increase the validity of diagnostic classification and treatment planning (Keane, et al, 1987, Litz et al, 1992). There is not a "best" measure to assess PTSD although interviews are generally more comprehensive assessments. Interviews can help create a link between a traumatic event and the development of PTSD symptoms (Litz, et al, 1992).

There are advantages to using self-report formats for PTSD assessments. These measures are less time consuming and thereby less burdensome to both subjects and the research team. It is also noted that obtaining data using a multi-method approach, and incorporating information

obtained from a variety of sources has been advocated to establish a PTSD diagnosis (Lyons et al, 1989; Kulka, et al, 1988, Litz et al 1992). For purposes of this study, it is felt this multi-method approach will yield the most comprehensive assessment of PTSD symptoms.

- **Overview of the Human-Animal Bond: Dogs as Human Companions**

According to the U.S Census Bureau in 2011 there were more animals living in the United States than people. A composition of human-animal companionship in the modern world represents various factors that characterize a human-animal bond from demographic, inter-species, and economic perspectives.

Table 1: Companion animals

	Dogs	Cats	Birds	Horses
Percent of households owning	36.5%	30.4%	3.1%	1.5%
Number of households owning	43,346,000	36,117,000	3,671,000	1,780,000
Average number owned per household	1.6	2.1	2.3	2.7
Total number in United States	69,926,000	74,059,000	8,300,000	4,856,000
Veterinary visits per household per year (mean)	2.6	1.6	0.3	1.9
Veterinary expenditure per household per year (mean)	$378	$191	$33	$373
Veterinary expenditure per animal (mean)	$227	$90	$14	$133

Although many animals, including exotic ones, can be defined as human companions, dogs predominately build a foundation of what is called a human-animal bond. The originator of the modern zoopsychology, or anthrozoology, Dr. Konrad Lorenz, coined this term. Dr Lorenz was the co-recipient of the 1973 Nobel Prize for Physiology or Medicine *"for their discoveries concerning organization and elicitation of individual and social behaviour patterns."*[A] Lorenz believed that there is a basic psychosocial mechanism that is responsible for cooperation between humans and animals described through the process of trustworthiness occurring when an animal learns to recognize another person as trustworthy, and vice versa[A].

Research suggests that dogs may have developed the ability to read person's behavioral and communicative cues through a process known as convergent evolution (Hare, 2005) resulting in two biological species sharing a similar trait or ability. According to a study published in 2013 by an international group of scientists (Wang et al., 2013), convergent evolution shaped genes in humans and dogs that correspond to diet, behavior, and disease. Most importantly for the proposed study is that as a result of more than 32,000 years of cooperation with human beings (Ovodov, et al., 2013), dogs have developed enhanced social skills that allow them to interact with their human companions on many levels, from tactile-kinesthetic to communications occurring in complex social situations (Libin, 2006; 2008).

Animal social cognition studies show that dogs adapt to their human companions using cue-reading abilities allowing them to interpret adequately such complex social interaction cues as cross-pointing, reverse directions, and different arm extensions (Soproni et al, 2002; Miklósi, 2006). Both dogs and humans are predisposed through their tactile-kinesthetic, visual, auditory, and communication abilities to pay attention to others in social interactions. Even when a person is unaware of his or her involuntary movements, that are part of any human verbal or non-verbal communication, the dog is watching the signals and considers those cues a priority before a consciously spoken word or manifested gesture (McConnell, 2003). Research also shows that dogs, compared to wolves, have a genetically predetermined willingness to observe human faces and make eye contact (Miklósi, 2003).

Popular belief holds that pet owners, especially dog owners, enjoy better health than their peers who do not own pets. Indeed, exposure to animals, especially dogs, has been shown to have positive physiological consequences (Vormbrock et al, 1993; Lynch, 1974). These researchers suggest that it could lead to decreased health care utilization. Simply stroking a dog decreases physiological arousal, including lowering blood pressure (Vormbrock et al, 1993; Lynch, 1974; Schuelke, 1991/1992), decreasing heart rate, and slowing respiration (Friedman, 1980), as well as increasing finger temperature (Thoma, 1984). Anderson et al. (1992) examined a large sample of healthy clinic patients (n=5,741) in Australia and found that compared to individuals who did not own pets, pet owners (primarily dog owners) also had lower triglyceride and cholesterol levels, in addition to lower blood pressures. In a national probability sample from Australia (N=1011) pet owners were found to have better health and decreased health care utilization as measured by number of doctor visits and medication use (Anderson, 1992). According to other studies, individuals with companion animals visited the physician less often and used less medication (Seigel, 1990; Headey, 1998; Aiyama et al, 1986; McHarg et al, 1995

Friedman et al.'s (1980) landmark study showed that in a population of individuals who had a myocardial infarction, pet owners were significantly more likely to survive the first year than non-pet owners. Additional research has shown that petting dogs can lower blood pressure and stress levels (Friedmann, 1984). Herzog (2011) sites several studies that have been unable to reproduce the earlier positive findings, and suggests that positive effects as a result of pets could be questioned. Despite this, dogs continue to be used in a variety of settings to help individuals deal with stressful events. Dellinger reported (2009) on the use of dogs for emotional support when traumatized witnesses testified in court. Animal assisted therapy (AAT) has shown positive results when used with hospitalized children (Tsai et al, 2010), adolescents hospitalized in psychiatric units (Bardill & Hutchinson, 1997), and adults on psychiatric units diagnosed with borderline anxiety (Barker & Dawson, 1998). In addition, use of dogs has been beneficial in the mental health and well-being of wounded warriors (Beck et al., 2012). Additionally, a secondary data analysis of hospital records indicated that patients who participated in AAT had reduction of pain, increased relaxation and calmness, and improvement in attitude during the AAT sessions. (Stoffel & Braun, 2006)

Clearly, these collective findings are provocative and raise important questions. If touching a dog can have such a remarkable impact, what might be the long-term effects of human-dog

interaction, specifically partnership with a Service Dog trained to recognize the needs of its human partner?

- **Overview of Emotional Support and Service Dogs**

In 1929, Seeing Eye, Inc was the first program, which trained dogs for the blind (Sachs-Ericcson et al., 2002). Since that time, additional companies have been created which train dogs to help individuals with a variety of disabilities. The manner in which the dog assists individuals varies and is a function of the needs of the individual. Table 2 provides an overview of the different types of dogs utilized by people with disabilities and the dog's purpose.

Table 2: Types of Dogs for People with Disabilities

Type of dog	Purpose
Guide dog	Helps visually impaired with navigation
Hearing dog	Alerts individuals with hearing impairments to different sounds, such as phone ringing, doorbell, approaching traffic
Seizure alert dog	Signals the onset of seizures, stays with individual during seizures, may go for help or call 911
Mobility dog	Retrieves objects, braces during transfers, pulls wheelchairs, acts as stabilizer
Mental health dog	Tasks vary depending on source accessed, but may include: reminding the handler to take medicine, providing safety checks or room searches, interrupting self-mutilation, and removing disoriented individuals from dangerous situations (Working like dogs, 2013). Mental health dogs are known under different names including Psychiatric Service Dogs. In this study, 'Service Dogs' are synonymous for mental health dogs.
Emotional Support Dog	Provide emotional support for people with disabilities. Unlike the dog types listed above, these are not considered service dogs.

Dogs trained to perform tasks that assist a person's disability are considered "Service Dogs." Tasks can include alerting and protecting a person who is having a seizure, guiding a person who is blind, or helping an individual with PTSD to integrate into society by doing tasks such as *block (*stand in front of handler to give space) or watch (stand behind handler to give space). Service Dogs work, thus are not considered pets. The task a dog has been trained to perform must be directly related to the person's disability. Service Dogs are protected under the Americans with Disabilities Act (ADA). This Act states that a protected animal is entitled to enter any public building, that the management of the business may ask what tasks the dog performs, but not what the disability is that the person has. In addition, only if the animal is misbehaving (i.e., dog is out of control and cannot be brought under control by handler or is not housebroken) can the management of that business request the dog and handler to leave (ADA, 2011).

In contrast, Emotional Support Dogs are accurately characterized as pets. The term itself, Emotional Support Animal, is a Department of Justice term for a pet that provides therapeutic benefit to its owner with a disability through companionship and affection. Not specifically trained to help with a person's disability, Emotional Support Dogs are expected to be well behaved including being house trained and not posing a danger to others. Dogs whose sole function is to provide comfort or emotional support do not qualify as service animals under the ADA and thus are not allowed in public buildings. However, Emotional Support Dogs, a type of Emotional Support Animal, are protected under the US Department of Justice, Civil Rights Division (DRC, 2011). In the U.S., the Fair Housing Act and the Air Carrier Access Act of 1986 are two federal laws that grant special privileges to owners of Emotional Support Animals. The Fair Housing Act has a provision, which allows individuals with disabilities to live in housing with their Emotional Support Animal without being charged additional rent. The Air Carrier Access Act provides a process in which a person with a disability may travel with his/her animal, as long as it has been prescribed and the owner has appropriate documentation (DRC, 2011). Table 3 provides summary information on the two types of dogs (DRC, 2011).

Table 3: Allowable Accommodations for Service and Emotional Support Dogs

Accommodation	Service Dog	Emotional Support Dog
Housing	Yes. Documentation of disability may be needed.	Yes. Documentation of disability may be needed.
Public Space	Yes.	No.
Airline Travel	Yes.	Yes. Recent (within one year) documentation needed from a licensed mental health professional regarding the need for the dog.

- **Getting Dogs Partnered with Humans**

For the person who wants a Service Dog, it most often begins with an application process. This process varies depending on the vendor providing the dog. Most vendors request documentation of need from the person's healthcare provider. This documentation of need provides the vendor with guidance as to the disabilities that the individual has and what tasks the dog should be trained to do. The recipient of the dog usually undergoes an extensive interview process, potentially a home visit, and is expected to attend intensive training with his/her Service Dog, which can last upwards of three weeks. Training approaches vary by vendors. Many conduct group training, while others prefer one-on-one training.

After the intensive training with their Service Dog, the individual will return to their normal schedule and begin to work as a team with their Service Dog. Many vendors conduct a follow up review at approximately one year to ensure that the dog has maintained an acceptable level of performance and remains healthy. Additional training may be done if the needs of the individual change due to their disability or social need.

The type of dog used varies among vendors because of the types of tasks the dog may be asked to perform. For example, hearing dogs tend to be small to medium sized dogs that are energetic and attentive to sounds. Bigger dogs (such as Retrievers and Labradors) are often used in situations where physical stability of an individual is needed. The most commonly used multi-purpose Service Dogs are Golden Retrievers, Labrador Retrievers, and crosses of these two. These breeds are popular as Service Dogs because they are typically good-natured dogs that are of adequate size to perform mobility tasks but not so large they are difficult to accommodate in public settings (i.e., restaurants and public transportation) (ADI- breeds, 2013).

Larger vendors who produce Service Dogs have extensive breeding programs, whereas smaller vendors will use animals rescued from shelters. Regardless of where the dog comes from, temperament is essential to having a well-trained, calm dog to complete the tasks required. Many of the vendors producing dogs use 'puppy raisers' which provide initial care, obedience training, and socialization for the dogs when they are young. The puppy raising stage lasts upwards of 12-14 months, at which point the dog returns to the vendor for more advanced training. It is at the advance training stage that the dog will learn the tasks specific to the individual in need.

Providers of Emotional Support Dogs may range from local animal shelters to vendors of Service Dogs. In either case, the provider has determined that these animals are best suited to be companion (pet) animals. Similar to the Service Dog application process, the person will be asked to provide information about their personality, lifestyle, and ability to care for the dog. A mental healthcare professional may provide a letter indicating that the person would benefit from the companionship and affection. Emotional Support Dogs do not receive any specific training that would benefit the recipient; they are expected to be well-behaved pets in the home and public settings that allow dogs on the premises. For the purposes of this study, all Emotional Support Dogs will have earned American Kennel Club Canine Good Citizen (CGC) certification, both basic and advanced tests. Based on the information obtained during the application process, the provider will identify a dog that is suitable for the person based on their personality and lifestyle. The Emotional Support Dog assigned by the provider to a given person will be shipped to a VA designated holding facility at or near the VA study site; once received a study dog trainer will introduce the dog to the recipient. A study dog trainer will conduct a one-day (hands-on) training session with the Emotional Support Dog and the recipient to ensure the recipient is prepared to accept the dog, understands the obedience commands, and is competent to control the dog. Additional instruction or support will be available from the trainer as needed.

For this study, the Emotional Support Dogs will be purchased from the same vendors as the Service Dogs. These dogs will of the same breed(s) and have undergone the same socialization and basic obedience training (CGC basic certified) as the Service Dogs. In addition, the Emotional Support Dogs will pass the advanced version of the CGC certification, termed the "AKC Community Canine Test (CGC Advanced, or CGCA). Generally, an initial follow-up review is conducted by the provider organization within the first month of placement. To prevent bias from being introduced into the study, VA personnel will provide post-placement support instead of the dog vendors. The purpose of this assessment is to determine if bonding of the

recipient with their Emotional Support Dog has been successful and to address any outstanding issues. Annual follow-up reviews are typically not performed.

Although the use of Service Dogs has been around for years, evidence based research is limited to show the impact that dogs have on their human partners.

- **Research Completed on Service Dogs**

As previously stated, Service Dogs are trained to assist people with disabilities to accomplish tasks which permit the individual to be more functional in their home and social environment. Often the dogs are trained to help in completion of activities of daily living and instrumental activities of daily living (Camp, 2000, Duncan, 1998). Basic activities of daily living (ADL) refer to all self-care activities such as mobility, transfers, and dressing. Instrumental activities of daily living (IADL) are those tasks beyond self-care that encompass "interaction with the physical and social environment" such as shopping, cleaning, and using transportation (Trombly, 1995).

Much of the research conducted on Service Dogs has had small sample sizes and is observational in nature, with few randomized clinical trials. Use of pre-post designs have been common (Rintala, 2008; Collins, 2006), trying to capture aspects of the participant's life prior to receipt of the dog and compare it to after. Winkle et al.'s (2011) literature review of Service Dogs for individuals with mobility disorders sited 371 papers that discussed the topic. Of those, only 12 met a higher level of evidence using the American Academy of Cerebral Palsy and Developmental Medicine 5 level evaluation system (Darrah et al, 2008). Of those 12 papers, only one randomized clinical trial exists (Allen et al., 1996). Unfortunately, there has been much debate about the study, and several researchers (Eames et al., 1996; Rowan, 1996) have criticized it. Study concerns included the source of dogs, the lack of attrition, and the high rate of study participants returning to work (82 %) -- surprising given the high rate of unemployment of individuals with severe disabilities (CDC, 2008).

Despite the limitations, work completed has encompassed a variety of topics. Table 4 provides a small summary of studies to date conducted with Service Dogs followed by specific examples of outcomes from the studies.

Table 4: Summary of Service Dog Research

Author	*Type of Dog*	*Sample Size*	*Study Design*
Allen, 1996	Mobility	N=50	RCT
Collins, 2006	Mobility	N=152	Cross-sectional*/four groups
Eddy, 1988	Mobility	N=20	Prospective/two groups
Hart, 1996	Hearing	N=54	Cross-sectional/two groups
Milan, 2004	Mobility	N=130	Cross-sectional*/two groups
Mowry, 1994	Hearing	N=455	Retrospective
Valentine, 1993	Mobility & Hearing	N=24	Retrospective

Fairmen, 2000	Mobility	N=202	Cross-sectional/no control
Rintala, 2002	Mobility	N=22	Pre-Post test/no control
Rintala, 2008	Mobility	N=33	Pre-Post test/two groups
Lane, 1998	Mobility	N=57	Cross-sectional/no control
Shintani, 2010	Mobility	N=38	Cross-sectional/two groups
Groer, 2003	Mobility & Hearing	N=100	Cross-sectional
Groer, 2006	Mobility	N=123	18 month follow up

The goal of rehabilitation is to aid those with disabilities and chronic conditions to return successfully to life at home and the community. Sayer et al. (2010) reports that 49% of Veterans returning from OEF/OIF have problems participating in community type activities. For other disabilities, Service Dogs have proven to be instrumental in helping those individuals regain independence and live successfully in the community. Collins et al. (2006) presented cross-sectional findings using data from a large prospective study (Groer, 2006) to ascertain the impact on psychosocial well-being and community participation across four groups – people recently paired with a Service Dog, people on a wait list to receive a dog, those with a pet and those with no pet. Collins' (2004) results found no significant differences across groups with respect to community participation. Groer's (2006) study, which was a longitudinal assessment of the same group of participants, indicated that those subjects on the waiting list to receive a dog had greater decreased social interaction than the other three groups (paired with Service Dog, owns a pet, no dog).

Eddy et al. (2008) observed the public's behavior toward individuals using wheelchairs with and without their Service Dogs. When an individual had his/her dog, an increased number of strangers smiled and initiated conversations compared to when the dog was not present. These results were noted first with children and then with adults in a variety of settings (Eddy et al., 2008; Mader, 1989). Fairman et al. (2000) also reported that those with dogs were more likely to engage in society, and they were approached more in public. Hart et al. (1987) reported more community participation as measured by shopping trips and more approaches that are social. Others have reported similar findings with respect to social interaction and participation in leisure activities (Lane, 1998; Rintala, 2002). In converse, Milan (2004) showed that although individuals with dogs scored higher on social integrations measured by the Craig Handicap Reporting Technique, the difference was not significant.

Some research has indicated that part of why community participation increases is because the individual feels safer (Sachs-Ericcsson, 2004). Serpell (1991) showed that the population in general feels safer with the presence of a dog. Studies conducted by Fairman (2000), Hart (1987), and Valentine (1993) all reported that those with Service Dogs reported feeling safer or willing to go out at night by themselves. Another study reported that the majority of subjects (91%) indicated their hearing dog helped with making the participant feel safe and secure in his/her environment (Mowry et al, 1994).

Studies cited in Table 4 have also examined quality of life. Shintani (2010) study included 38 subjects, 10 of whom had Mobility Service Dogs. SF-36 measured quality of life. Significantly higher scores (indicating higher quality of life) were seen in the Physical Functioning and Role

Emotional subscales of the SF-36. The Mental Component Summary score was also significantly higher in those who had the Service Dogs. Other studies have shown improved quality of life when an individual has a Service Dog (Rintala, 2002).

- **How Service Dogs can Impact Work and Productivity**

The Center for Disease Control estimates that 22% of the United States population has a disability (CDC, 2008). The CDC also estimates that 84% of the general population is employed. Of those with severe disabilities, only 30% are employed. Family income has been correlated with activity limitations, as income loss often occurs as a result of disability. Median monthly income decreases dramatically with the presence of a disability (e.g., $2250 median income for those with no disability compared to $1458 median monthly income for those with a severe disability) (CDC, 2008). Developing methods to make it possible for individuals with disabilities to work is important. Several studies (Fairman et al., 2000; Allen et al., 1998) have examined Service Dogs and employment with several studies showing that those who are partnered with a dog are more likely to be employed (Hart et al., 1996; Groer, 2003; Allen, 1998). Rintala et al. (2002) showed non-significant increases in employment after receipt of a Service Dog.

- **Cost and Service Dogs**

Some studies have examined cost from the perspective of caregiver needs. Service Dogs can help reduce some of the work of caregivers by performing tasks tailored to meet the particular needs of their partners (Duncan, 1998). For example, dogs can be trained to brace or provide support during transfers, retrieve items, and summon help should it be needed, thus reducing the need for a caregiver to be present (Camp, 2000; Fairman, 2000; Lane, 1998). Fairman et al.'s (2000) cross-sectional survey reported Service Dog partners used 2.1 less hours of paid and 5.9 less hours of unpaid assistance each week after receipt of their Service Dogs. The estimated cost savings due to decreased paid assistance hours was $600 per year. Based on the previously mentioned estimate of 16,000 Service Dog users in the United States, this represents a potential savings of $9.6 million per year due to decreased reliance on paid assistance. Limitations in these studies include cross-sectional design resulting in recall bias of previous events and controversial studies (e.g. Allen et al's findings). Others have shown similar findings (Rintala, 2008; Allen et al.; 1996).

- **Impact of Service Dogs on Mental Health Characteristics**

Research has shown that Service Dogs can be beneficial in helping individuals deal with other mental health conditions. Loneliness has been correlated with a greater incidence of anxiety, fatigue, and depression (Katcher, 1985). Pet ownership alone was found to reduce loneliness by facilitating social interaction and providing constant companionship according to several researchers (Vombrock et al., 1988; Lynch et al., 1974; Schuelke et al., 1991). The first study to demonstrate the protective effect of pet ownership explored one-year survival of 92 individuals who had suffered myocardial infarcts (MIs) (Friedmann et al., 1980). Only three of 53 individuals who owned pets (six percent) had died at one-year post MI, compared to 11 out of 39 individuals who did not own pets (28%). All 10 individuals who owned pets other than dogs had survived the year. Although some work has shown that loneliness and depression is not affected by the presence of a Service Dog (Collins et al., 2006; Groer, 2006), others have found

improvements in both constructs when a Service Dog is present (Valentine et al,, 1993; Mowry, 1994).

Limited published research exists on the benefits of dogs as a treatment for PTSD. Much of what has been reported consists of anecdotal reports published online and in lay journals. These reports have anecdotally reported on dogs helping individuals with panic disorders (Fields-Meyer, 2006), bipolar disorder (Smith, 2003), symptoms of PTSD including overcoming flashbacks, reduction of nightmares, anxiety, as well as medication use (Kime, 2012; McLaughlin, 2012; Ruiz, 2012; VOA, 2013; News 10, 2013). One study (published online) sampled 71 individuals who self-reported information on their demographics, mental health care and diagnosis, and information regarding using a Service Dog for help. All but six participants were either partnered with a Psychiatric Service Dog or were in the process of receiving one. The authors acknowledge that the sample was convenience based, drawn from individuals who are members of a psychiatric dog listserve. Based on self-report, in this cross-sectional study, 84% of the study population stated their symptoms decreased as a result of having the dog (Esnayra, 2008).

To our research team's knowledge, there have been no scientific studies completed on the benefits of Service Dogs for Veterans with PTSD. As shown in the literature presented in this background section, Service Dogs are efficacious for individuals with other types of disabilities, such as spinal cord injury and hearing problems. In addition, some mental health outcomes have improved with the introduction of a Service Dog. Given this, further research should be conducted to assess the benefit of Service Dogs on individuals with mental health challenges, such as Post Traumatic Stress Disorder (PTSD).

II. OVERVIEW OF ORIGINAL STUDY

- **Background**

The National Defense Authorization Act of 2010 mandated that a pilot study be conducted to examine the efficacy of Service Dogs for Veterans with PTSD. Investigators at the James A Haley Veterans Hospital (PI: Shirley Groer) were invited to submit a proposal. After review for scientific merit and revised accordingly, the study was approved for funding in April 2011 with enrollment of the first subject in June 2011.

- **Methods**

Designed as a three-year longitudinal study, Veterans were recruited to determine if Service Dogs improve mental health over time compared to Veterans without Service Dogs, and to determine the impact of Service Dogs on healthcare costs. Specific outcomes included PTSD symptoms, community participation, and health care utilization. What follows is a brief summary of events regarding the study along with reasons why this redesign of the study is occurring.

Recruitment of Veterans occurred several ways. Study staff educated Mental Health providers in outpatient clinics in the hospital as well as community based outpatient clinics and vet centers. Service Dog vendors also referred Veterans to the study team. Many potential participants heard about the study by word of mouth from other Veterans. Once Veterans contacted the study team, enrollment into study occurred with eligibility criteria confirmed. Eligible Veterans were then referred to the Service Dog vendors to proceed with their application process. Veterans approved by both the study team and the vendor were placed on a waiting list to receive a dog. Once a dog was available, Veterans went to the vendor facility for training. Depending on vendor, the training could take three days to three weeks. After pairing, the Veteran went home, partnered with their Service Dog.

In the original protocol, two groups of Veterans are followed: Veterans paired with a Service Dog (treatment group), and Veterans not paired with a Service Dog (control group). Please note that the original protocol is ongoing. The protocol and measures were identical for both groups except for home visits for Service Dog group. Once consented, Veterans complete surveys every three months until paired with a Service Dog. After pairing, Veterans complete the same measures at months 3, 6, 9, 12, 18, and 24. In addition, paired Veterans and their dog are visited in the home by the study team and a VA contracted dog trainer. These visits are done to ensure the pairing is successful, to make sure dogs and Veterans are safe and healthy, and to see that the training is being maintained at a level necessary for a dog to be considered a Service Dog. A dog trainer is available to paired Veterans for assistance with any behavioral or training issues that arise. Veterans in the control group are followed for two years.

- **Enrollment Holds**

In January 2012 after two dog bites and a dog death, an administrative hold was instated which resulted in no new enrollment of Veterans to the study. At that time, three vendors (one in Colorado and two in Florida) were participating. After intensive site visits, one vendor in Florida was awarded a contract. A Data Safety and Monitoring Board was instituted and additional safety and monitoring procedures/practices were put into place. This included additional more

intensive phone follow up after pairing and the addition of separate quarterly home visits by both the study team and vendor. The study was restarted in June 2012.

Additional vendor issues identified within a month of re-starting the study resulted in a second administrative hold. These issues dealt with the health and wellbeing of the dogs in training. Ultimately, discontinuation of the remaining contract occurred. The study remains on enrollment hold, with no new pairings occurring. Additional site visits have taken place to vendors who train Service Dogs and to vendors who train working dogs (e.g., TSA, bomb-dogs, and police dogs).

- **Current Status**

Currently there are 20 Veterans enrolled in the study. Of those, 13 are paired with Service Dogs. There were 40 additional Veterans enrolled at some point but that have dropped from the study for various reasons. There have been nine Veterans paired with Service Dogs who have withdrawn. Of those nine, one Veteran's dog died, four Veterans returned the dog to the vendor, and four dogs remain with their Veteran. Recruitment of control subjects was largely unsuccessful, as most Veterans interested in participating wanted a dog.

The 13 paired participants are predominantly Caucasian (92%), male (n=10), with a mean age of 52, SD=10; range 34-66. Overall it took an average of 3 months (range=0-10) from enrollment before participants were placed with their Service Dog. At enrollment 31% (n=4) reported having mobility problems and having children in the home full or part time. Two subjects will have completed the 24-month follow up by the end of July 2013. No data has been analyzed at this time.

- **Lessons learned from the original study**

The original study taught the research team a great deal about what should be considered in future research when examining humans paired with dogs. This section addresses some of the challenges and helps to provide justification of why the proposed study has been designed accordingly.

- Study design: Over the course of the development of the original study to the methods of the proposed study, the design has always been challenged. Included in this has been the desire for a randomized design, inclusion of a usual care arm, and the amount to time to follow Veterans after the receipt of a dog. It is not practical to randomize Veterans to receiving a dog, if in fact they do not want a dog. Thus, the typical randomized clinical trial (e.g. all individuals with a given diagnosis) would not be appropriate for this study. It would only be appropriate if those with a given diagnosis also want a dog. *In the proposed study, all subjects, at time of recruitment will indicate an interest in owning a dog. Also, there have been suggestions to have a waitlist group of Veterans who would be randomized as to how long they would be on the waitlist (short versus long). Because dogs are not readily available, all Veterans will be waiting at least three months and most likely longer. Even the largest dog vendor seldom places more than 200 dogs in a given year. Thus, the research team fully expects that the Veterans will be waiting longer than three months to obtain their dog.*

- Comparison/control group: Due to the nature of the intervention, a dog, one cannot blind the intervention (e.g., placebo versus intervention), so the question arises as to what is the best comparison. Some suggestions have included having a group of Veterans who are part of the study and followed, but do not have a dog. Based on experience with the pilot study, recruitment of that group will likely be challenging. Even when Veterans who were part of the original study stated they no longer wanted a dog, were not willing to be followed. Additional suggestions for a control condition include letting Veterans be their own controls, with a series of pre-measurements prior to receipt of intervention. *The proposed study includes this feature. Veterans enrolled will be followed at least three months prior to receipt of the dog (this is similar to the original study). Most likely it will be longer than three months, as the procurement of appropriate dogs will take time. This will enable a comparison pre and post randomization (and receipt of the intervention), allowing for measurement of a usual care state. In addition, we have added a group of Veterans who will receive an Emotional Support Dog for comparison with Veterans who receive the more highly trained Service Dogs.*

- Participant burden: Throughout the original study, there have been numerous complaints about the length of the survey instrument. In 2008, the Department of Veterans Affairs in collaboration with the National Institute on Mental Health and Department of Defense recommended to keep the survey instruments to a minimum to reduce burden on the subject (page 8, 12). *For this reason, we have carefully considered the length of each questionnaire and are making efforts to ensure that information is not duplicative.*

- Information captured: Throughout the course of the original study, subjects have noted repeatedly that the measures used to monitor symptom status and community participation miss what the dogs are really doing to help them. In the original study, the Community Reintegration of Injured Service members (CRIS) were used as a measure of community participation. We have chosen not to use the CRIS this time, as the Veterans complained about the length of the questionnaire and about the content of the questions. Subsequently the Community Integration Questionnaire (CIQ) was used which asks how many times a month the individual participates in leisure activities. The subjects complained that the measure did not give them the option to answer the question in a way that gives the full picture. The number of times they participated may not have changed, but their dog has allowed them to be less angry or anxious during outings and has made them much more enjoyable. Just asking who cares for the children does not get at the heart of whether having the dog has allowed interactions with the children to be less stressful and tense, or that the dog keeps the subject from losing their temper and reacting the way they typically would have prior to receiving the dog. Feedback from study subjects overall is that the key elements of how the dogs help with PTSD related challenges are not being captured by quantitative measures. *For this reason, we have added some open-ended questions to the post evaluation (e.g., Service Dog/Emotional Support Dog Post-Pairing Evaluation).*

- Dogs: Dogs are dogs, and even the most trained dog, if provoked may lash out to protect itself. Although the original study had safety measures included, in moving forward, the study team has made numerous site visits to dog vendors who supply service animals (e.g., mobility dogs) as well as working dog vendors (e.g., supply police dogs). Based on the information gained from those site visits, we have written a new Statement of Work (SOW). New vendors to supply dogs will use the new SOW. An approved protocol is needed in order to administer a contract; therefore, vendors are unknown at this time. *The dogs that we will use for the proposed study will be purpose bred (no rescue dogs), have an extensive medical work up to ensure well-being, and will be trained to complete specific tasks (for the Service Dog group). All dogs (both Service Dog group and Emotional Support Dogs) will have completed the Canine Good Citizen test. The Study team will include a national dog trainer with extensive experience in providing dogs to individuals with PTSD, and a local dog trainer (one per site).*

- Knowledge of dogs: Over the course of the study, the research team has discovered that the knowledge of dogs varies across individuals. Ability to know what to look for when the dog is ill, taking care of the dog appropriately, and an understanding of dog expenses is crucial to health and well-being of the dog. *For this reason, we have added a dog care course into this new proposal.*

In summary, although the original study was reviewed, initiated, successfully recruited Veterans, and ultimately paired them with dogs, problems occurred that were beyond the control of the research team. Because of the high profile nature of this study, the research team approached the Cooperative Studies Program. Subsequently, what follows is the new research design with additional safety measures in place to protect Veterans and dogs.

III. STUDY OBJECTIVES

The objectives and hypotheses proposed for this study include:

- **Primary Objectives**

Objective 1: To examine how limitations on activity and quality of life in Veterans with PTSD are impacted by the provision of a Service Dog versus an Emotional Support Dog.

Limitation on activity is defined as the inability to fully engage in important life domains, such as cognition, mobility, self-care, and participation in society. For all the hypotheses listed below we will examine change over the 18 month intervention period between the two groups of participants with PTSD: those who are assigned to receive a Service Dog and those who are assigned to receive an Emotional Support Dog.

Hypothesis 1a: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive Service Dogs will have improved ability to fully engage in important life domains over time as measured by the WHO-DAS 2.0 domain scores and the WHO-DAS 2.0 total score.

Hypothesis 1b: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive Service Dogs will have improved quality of life, as measured by the global mental and physical health component scores of the VR-12.

- **Secondary Objectives**

Objective 2: To examine how mental health is impacted by the provision of a Service Dog versus an Emotional Support Dog.

Hypothesis 2a: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have reduced PTSD symptom severity, as assessed by the PCL-5

Hypothesis 2b: As compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have decreased thoughts of suicide, as assessed by the Columbia-Suicide Severity Rating Scale (C-SSRS).

Hypothesis 2c: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have a decrease in depression as assessed by the PHQ-9.

Hypothesis 2d: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have improved sleep outcomes as measured by the Pittsburgh Sleep Quality Index (PSQI)

Objective 3: To characterize and compare how health care utilization and costs are affected by the provision of a Service Dog or Emotional Support Dog.

Hypothesis 3a: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have lower health care utilization as quantified by inpatient and outpatient visits to healthcare providers and to mental health providers.

Hypothesis 3b: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have decreased medication usage as assessed by the medical record.

Hypothesis 3c: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have decreased use of sleep medications as assessed by the medical record.

Objective 4: To characterize and compare how employment and productivity are affected by the provision of a Service Dog or Emotional Support Dog.

Hypothesis 4a: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will be more likely to be employed at follow-up.

Hypothesis 4b: Compared to Veterans who receive an Emotional Support Dog, Veterans who receive a Service Dog will have greater work productivity as quantified by the Work Productivity and Activity Impairment Questionnaire: General Health Problem V2.0.

IV. STUDY OUTCOME MEASURES

Primary Outcomes: The primary outcome measures are limitations of activities and quality of life.

Hypothesis 1a: The total score and six domain scores as measured by the World Health Organization Disability Assessment Scale II (WHO-DAS 2.0) will define activity limitations. The WHO-DAS 2.0 is a structured 36-item instrument, which assesses difficulties in six domains of life during the last 30 days. The domains include:

1. Cognition: understanding and communicating with the world
2. Mobility: moving and getting around
3. Self-care: attending to one's hygiene, dressing, eating and staying alone
4. Interpersonal interactions: getting along with people
5. Life activities: domestic responsibilities, leisure, and work
6. Participation in society: joining in community activities

Hypothesis 1b: The outcome measure will be the summary measures from the VR-12 instrument of health related quality of life as measured by both the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores.

Secondary Outcomes: Secondary outcomes include PTSD severity and symptoms, depression, sleep, suicide intent, healthcare utilization, healthcare cost, and employment.

Hypothesis 2a**:** The outcome measure will be the Posttraumatic Stress Disorder Checklist (PCL-5). The PCL-5 is a 20-item self-report measure of PTSD symptoms (in the past month) based on DSM-5 criteria with a 5-point Likert scale response format.

Hypothesis 2b will examine suicidal ideation, which will be assessed by the Columbia-Suicide Severity Rating Scale (C-SSRS).

Hypothesis 2c examines depression, which will be assessed by the Patient Health Questionnaire (PHQ-9).

Hypothesis 2d will to measure sleep quality as assessed by the Pittsburgh Sleep Quality Index (PSQI)

Hypotheses 3a and 3b: Information on healthcare utilization and costs will be collected from VA administrative data sets and with the Health Economics Resource Center (HERC)-developed standard questions regarding non-VA outpatient and inpatient utilization. Additionally, HERC has developed standardized cost estimates, which will be applied to the healthcare utilization data.

Hypotheses 4a and 4b: Employment outcomes will be examined with the Work Productivity and Activity Impairment Questionnaire: General Health Problem V2.0.

V. SUMMARY OF STUDY DESIGN

The hypotheses will be tested in a 4-5 year prospective randomized study that will include two randomized arms (Service Dog and Emotional Support Dog groups). Veterans randomized to Arm 1 will receive a Service Dog, trained for specific tasks to assist with the Veteran's disability. Veterans randomized to Arm 2 will receive an Emotional Support Dog, which has suitable behavior characteristics, provides emotional comfort, and has passed the Canine Good Citizen test. Veterans in both groups will be followed for 18-months.

Two hundred twenty subjects will be paired with dogs from three VA sites (about 74 per site) where they will be evaluated using surveys, interviews, observation, and chart review. All participants will be followed prior to receipt of intervention for a minimum of three months. During this time, all participants enrolled in the study will also be in usual care with their treating mental health provider. Primary measures will be the WHO-DAS 2.0, a validated instrument that will assess function, and the VR-12 to assess quality of life. Secondary measures include the PCL-5 score to assess PTSD symptoms, healthcare utilization, employment and productivity, depression, and suicidal intent. The proposed design of the study follows.

FIGURE 1: Study Flow

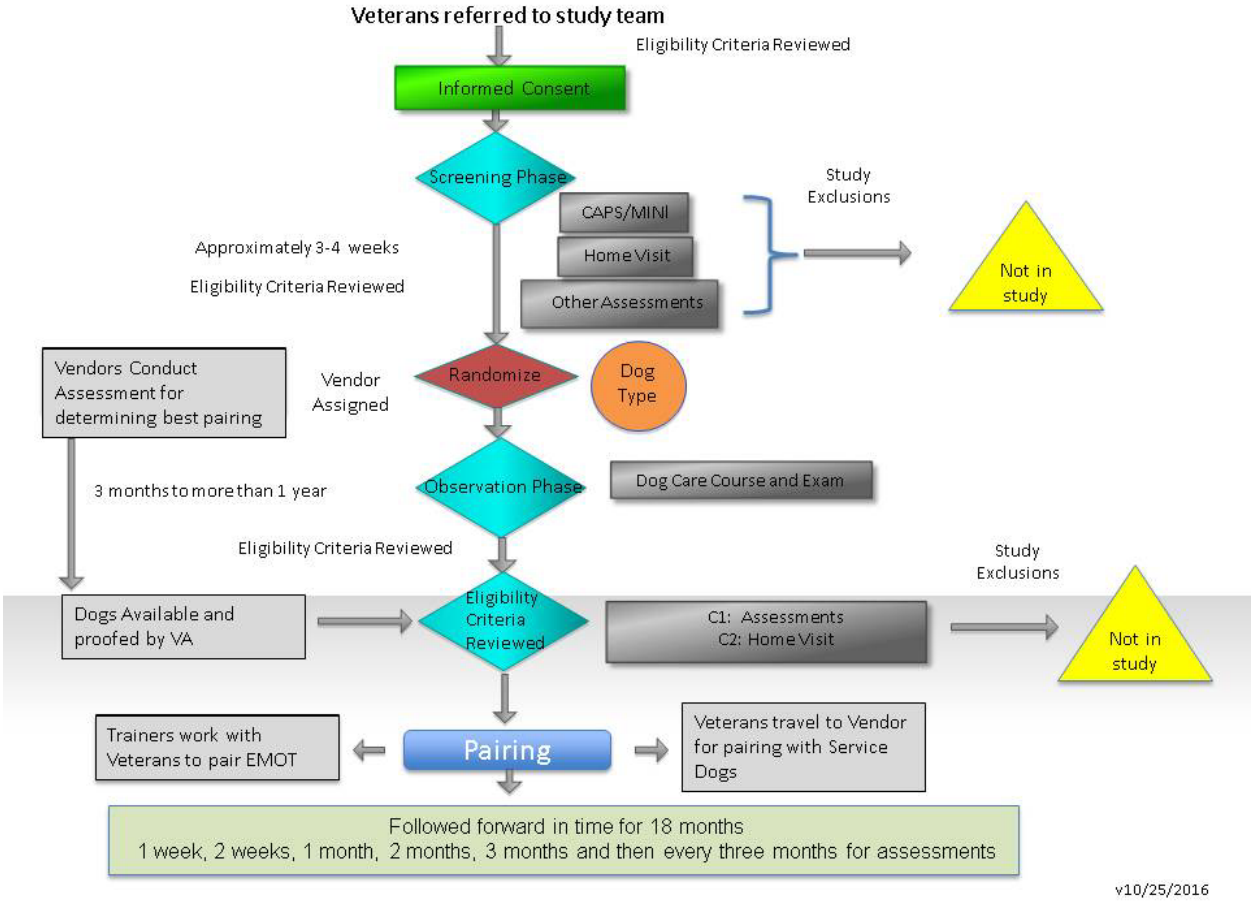
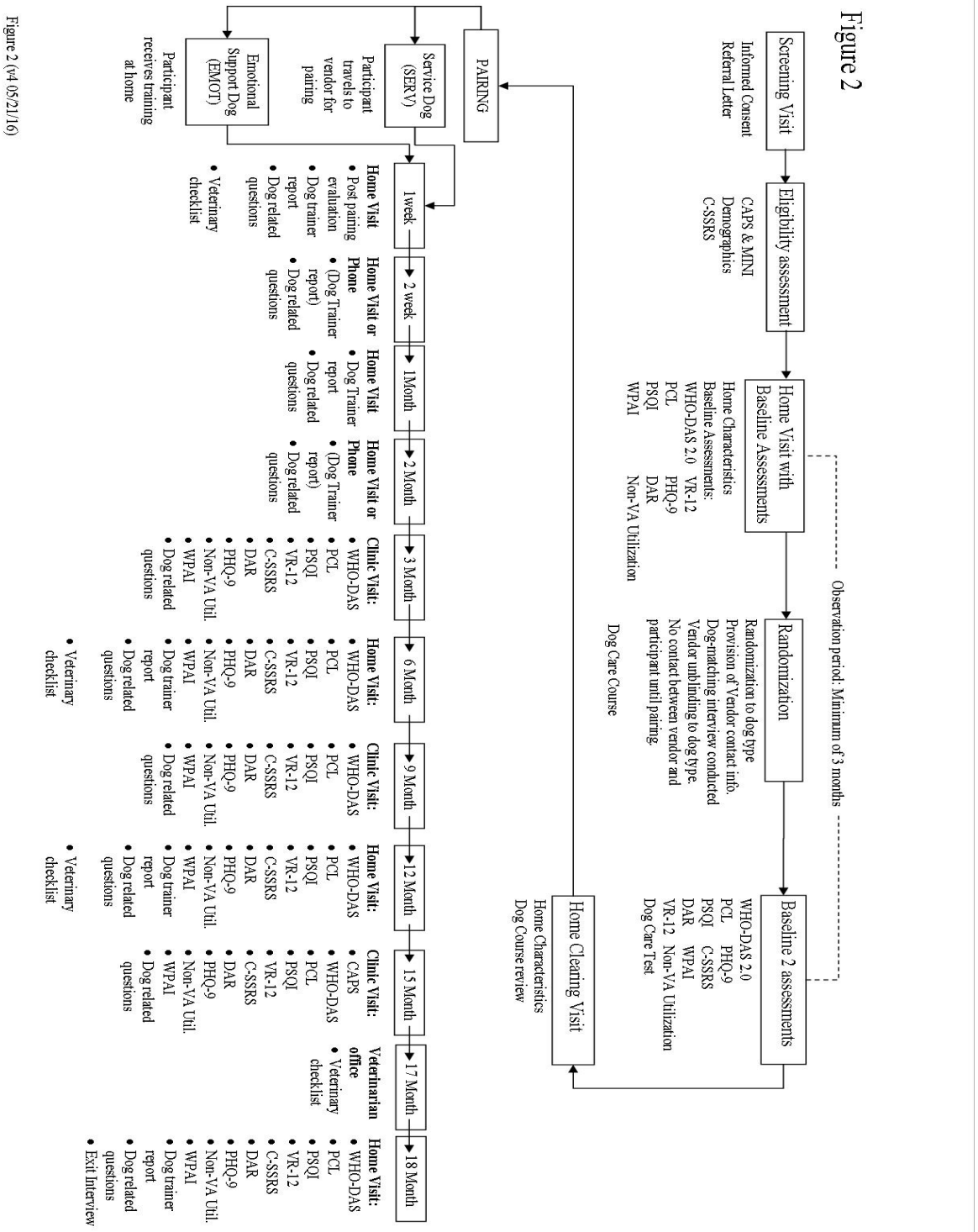


FIGURE 1: Study Flow



PARTICIPANT POPULATION

- **Inclusion Criteria**

1) Males and females > 18 years of age.
2) Referral from Mental Health provider that documents PTSD diagnosis.
3) PTSD as a result of any trauma as determined by meeting DSM 5 diagnostic criteria.
4) Enrolled in mental health services at VA and has attended at least one visit in the 90 days prior to consent.
   - If individual not currently enrolled in mental health treatment decides to enroll in such then he/she may become eligible to participate in the study.
   - If individual enrolled in mental health treatment schedules and attends a mental health visit then he/she may become eligible to participate in the study
5) Agrees to remain in mental health treatment throughout the duration of the study.
6) Can adequately care for and handle the dog.
   - Adequately caring for a dog requires that participants will be responsible for and able to provide food, water, protection, shelter, exercise, transportation, and treatment related to their assigned dog.
   - Adequately handling the dog means having the ability to give and reinforce obedience commands and control the dog using a leash.
7) Home environment is suitable for a dog.
   - If the home environment can be remedied the individual may become eligible to participate in the study.
   - If a participant moves home while enrolled in the study the new home must be suitable for a dog.
8) Home environment is structurally and geographically accessible to study staff.
   - If the home is geographically inaccessible to study staff and, the individual cannot remedy the situation unless he/she moves home. The study team will not encourage this. If a move takes place, it will be the individual's responsibility to re-contact the study team.
   - If the individual changes home residence while enrolled in the study, the new home must be geographically accessible to study staff. If it is inaccessible, the dog will be removed and the individual will be withdrawn from the study.
9) Is willing to accept randomization outcome.
10) Has someone to care for the dog during extended absence of the participant.
   - If no one is available to care for the dog but the situation changes then the participant may become eligible to participate.
11) Others in home are agreeable to having dog.
   - If others in the home are not agreeable but at a later date the situation changes, then the potential participant may become eligible to participate
12) Is willing and able to travel (by air or car) to the dog vendor training site for pairing if assigned to receive a service dog.
   - If individual's unwillingness to travel to a training site changes, he/she may become eligible to participate. In this instance, it will be the individual's responsibility to re-contact the study team.

13) Individual has no pet in the home to threaten the bonding and obedience training of an assigned study dog.
   - If a household dog lives inside the home and the home is partitioned such that there are two or more separate living spaces served by independent entrance/exits, and the individual does not live in a partition with a dog, then the individual can be eligible. If a household dog lives primarily outside the home in a rural area and the individual is not primarily responsible for feeding the dog on a daily basis, then the individual can be eligible.
   - If an individual has pets other than dogs that could interfere with bonding, the individual will be scheduled for the screening visits and the relationship will be assessed by the dog trainer.
   - If an individual has a household dog or other pet that prevents participation in the study but the situation changes, the individual may become eligible to participate. In this instance, it will be the individual's responsibility to re-contact the study team.

14) Individual can verbalize understanding of consent form, is willing to provide written informed consent and to follow study procedures.

- **Exclusion Criteria**

1) Hospitalization for mental health reasons in the past 6 months
   - Once six months since hospitalization have passed, the individual may become eligible to participate in the study
2) Aggressive behavior that would make it unsafe for the dog
3) Diagnosis of psychosis, delusions, dementia, moderate or severe alcohol/substance disorder (SUD), or moderate to severe traumatic brain injury as determined by the presence or absence of a condition following scoring of MINI responses or as documented in chart notes.

   <u>SUD assessment (alcohol/non-alcohol)</u>:
   - Ineligibility is based on the presence of a Moderate (4-5 symptoms) to Severe (6+ symptoms) SUD as identified by the MINI within the previous 12-month period starting from date of the study MINI screening.
   - If a Moderate to Severe SUD has been documented or communicated by the referring clinician or potential participant, or is noted in the EMR prior to the initial MINI screening visit, individuals should be scheduled for their initial screening visit on a timeline commensurate with meeting the 12-month SUDs eligibility window.
   - If an individual is identified as ineligible during the initial screening visit (i.e. MINI SUDs score ≥4) he/she may be re-evaluated later at the discretion of the study team. Re-evaluations should be scheduled based on a timeline commensurate with meeting the 12-month SUDs eligibility window (absence of a Moderate to Severe SUD for the previous 12 months). If at re-evaluation the individual has <4 symptoms, he/she may become eligible to participate in the study.

4) Active suicidal intent as determined by a CPRS flag for suicidal intent or an endorsement of yes to question 5 (active suicidal ideation with specific plan and intent) on the C-SSRS completed at the Clinic Qualifying Visit.
   - An endorsement of yes to question 4 (Active Suicidal Ideation with Some Intent to Act, without Specific Plan) without endorsement of question 5 indicates that the individual needs additional assessment to determine eligibility.
5) Homicidal intent or cognitive disabilities that would preclude safety of dog and/or ability to participate in the study.
6) Social, mental or physical condition that prevents the individual from either giving informed consent or participating in the study.
7) Participation in another unapproved research trial.
   - If the individual is in another unrelated study and both the study Chair/PI of this and the other study consider participation in both studies to be acceptable then the individual may become eligible to participate in this study.
   - If the study Chair/PI of this and/or the other study consider participation in both studies to be unacceptable then, once participation in the other study is complete, the participant may become eligible to participate in this study. At that time, it will be the individual's responsibility to re-contact the study team.
8) Has CPRS flag for violent/disruptive behavior.
9) Potential participants who are pregnant/who have a partner who is pregnant, or who currently have one or more children younger than age 5 in the household for more than 8 hours per day, one day a week will be excluded from the study.
   - If a participant or anyone else in the household becomes pregnant during the observation period, the participant will be excluded from the study.
   - Participants who have children in their home/become pregnant after being paired with a dog will be evaluated on a case-by-case basis (see Safety Monitoring of Children in the Home below)
   - After a total of 10 dogs have been placed with participants who have children between the ages of 5 and 10 years, and after each pairing has successfully reached and passed the 2-month home visit, this exclusion criterion will be revisited for potential inclusion of participants with children younger than 5 years.

- **Safety Monitoring of Children in the Home**

1) The family will be provided with educational materials to review with their children using components of the American Veterinarian Medical Association (AVMA) Dog Bite Prevention Articles located on the AVMA website (https://www.avma.org/public/Pages/Dog-Bite-Prevention.aspx). Participants will also be provided with the link to the abovementioned website in order to access additional educational resources.

2) The dog trainer will make home visits at weeks 1 and 2 and at months 1 and 2. If, at any of these visits, the dog trainer has concerns that the dog is not comfortable in the

presence of the child, the dog will be removed from the home and the participant will be terminated from the study.

3) The study team, participant and her/his family will be instructed to monitor the dog's behavior regarding the dog-child interactions. In particular they will be instructed to look out for the following behaviors that may indicate the dog is stressed by the presence of the child:
   - Dog actively avoids the child by hiding, moving away., etc. when child approaches
   - Dog yawn or licks lips when in the child's presence
   - Dog snaps or stares at the child
   - Dog's holds tail higher than horizontal when in child's presence
   - Dog attempts to herd child away from the veteran or other family members.
   - Dog displays other behaviors towards the child (or others) that concern the participant.

4) Participants who become pregnant or introduce a newborn, infant, or toddler into their home environment (i.e., marriage, significant other, etc.) after pairing will be provided with the "Dog Safety Education for Newborns and Infants" document (website: http://doggonesafe.com/baby_safety_around_dogs).

If the family notices any of the above behaviors the local dog trainer or a member of the local study team must be contacted immediately. On the first report of this, the dog trainer will make a home visit to evaluate the situation. If the dog trainer has any concerns that the dog is not comfortable in the presence of the child, the dog will be removed from the home and the participant will be terminated from the study. On following reports of the same or similar behavior, the dog trainer will make a home visit on a case-by-case basis.

- **Recruitment**

There are three participating study sites (Portland, Iowa and Atlanta VA Medical Centers) that will focus their combined recruitment efforts on obtaining the final sample size of 220 paired participants. To reach this final sample size and control for the rate of attrition, approximately 300 participants may be consented across all of the sites.

Suggested local recruitment strategies:

1. In-services to mental health providers at clinics at the VA and surrounding Community Based Outpatient Clinics (CBOCs), and Veteran Centers and other Veteran organizations will be conducted by members of the study team using a study-approved presentation. Follow-up contacts with clinic providers will take place to answer questions that arise regarding study details. Clinicians attending the in-service presentations will be encouraged to refer Veterans they feel meet the eligibility criteria
2. Reminder emails with flier attachments sent to mental health providers.
3. Distribution of IRB approved flyers and brochures to mental health providers, directly to potential participants, placed in mental health clinic waiting areas and placed at meeting locations of veteran interest groups and organizations.

4. Vendor and other external professionals' referrals of potential participants via provision of study team contact information, IRB approved flyers/brochures and/or in-service presentation.
5. Advertising via Social media outlets (i.e., VA Facebook page, VA Twitter account), VA related newsletters (internal and external), and VA closed circuit TV. All content will be limited to language currently included in the approved study brochure and/or flyer.
6. Information booths set up at local community events with a focus on Veteran populations.

Referrals:

Potential participants can be:

- Self-referred.
- Referred by a local mental health provider via CPRS or other contact.
- Referred by a dog vendor or other external professional following contact by an interested individual.

VI. HUMAN RIGHTS ISSUES AND INFORMED CONSENT

CSP follows the principles of medical research involving human subjects as outlined in the Declaration of Helsinki.

Informed consent will be obtained from all CSP study participants prior to participation in this study. Informed consent requires that the participant understand and agree to the study procedures, treatments, and risks. The participant will be explained the voluntary nature of participation in the research study and can withdraw from participation without penalty at any time. It will be communicated that current treatment, future medical care, and benefits will not be dependent on participation in the research. The participant must have sufficient time to read and discuss the informed consent document prior to signing.

The process of informed consent must occur verbally with the study participant. In discussion of the consent form with the participant, the site investigator (or other study personnel identified in this protocol to conduct the informed consent process) may provide additional details beyond those contained in the consent form. Additional information may not represent any significant additions, deletions, or modifications to the information in the informed consent document. The research participant will be provided with a paper copy of the consent form and any supplementary materials to read and review prior to consent.

The informed consent document will contain all elements as outlined in VHA Handbook 1200.05 as required by the Common Rule. The consent will be documented on VA Form 10-1086 Research Consent Form. The VA CIRB or other IRB of record for the study will approve the consent form prior to its use.

The informed consent must be signed and dated by the study participant and the person obtaining the informed consent. The original signed informed consent document will be placed in the site investigator's research file. Copies of the signed informed consent document will be provided to the participant at the time of consent, the participant's medical record per VHA Handbook 1907.01, and to the CSPCC per instructions in the Operations Manual.

The informed consent process will be documented in a detailed progress note prior to study participation.

A separate written HIPAA authorization for the use of individually identifiable health information must be signed by the research participant.

Data will be retained after the end of the study as per VA and IRB regulations.

VII. EVALUATION PROCEDURES

Table 5 provides a summary of forms and data collection tools. Each test measure is described in more detail following the table.

Table 5: Summary of Forms and Data Collection Tools

Form	*Purpose*	*When Completed*	*Who Completes*
Mental Health Referral Checklist and Cover Letter	To provide referral for potential participant to participate in research study	Prior to consent	Mental health provider
Veteran Characteristics (form 01)	To collect information about participants	Screening	Member of study team
CAPS (form 03)	PTSD eligibility	Clinic Qualifying visit, Month 15	Trained Mental Health professional on study team
MINI (form 04)	Psychiatric disorders; Determine eligibility	Clinic Qualifying visit,	Qualified mental health professional on study team
Suitability to Have a Dog Checklist (form 05)	Home assessment checklist to assess suitability home environment for dog placement	Home Qualifying visit, Home Clearing Visit, ad hoc visits as needed	VA Dog Trainer (National or local) or another trained individual
Dog Care Test	Test to assess knowledge learned by participant following Dog Care Course	After completing the Dog Care Course, Home Clearing visit	Participant
C-SSRS (form 11)	Suicide assessment	Clinic Qualifying Visit, Baseline 2 visit, and at months 3, 6, 9, 12, 15 and 18	Completed in interview format
WHO-DAS 2.0 (form 07)	Quantification of outcomes	Baseline 1 visit, Baseline 2 visit, and at months 3, 6, 9, 12, 15 and 18	HERC non-VA care and WPAI completed in interview format; remaining measures completed in pen and paper format by participant.
PCL-5 (form 08)			
PSQI (form 09)			
VR-12 (form 10)			
PHQ-9 (form 12)			
DAR (form 13)			
HERC non-VA			

Form	*Purpose*	*When Completed*	*Who Completes*
Inpatient and outpatient Care (form 14)			
WPAI: GHP v2.0 (form 15)			
Post-Pairing Evaluation (form 19)	Assessment of dog-related issues	One week post pairing and as needed	VA Dog Trainer (national or local)
Medication Log (form 17)	Record all Non-VA prescribed medications the participant is taking during the trial	Baseline 1, Baseline 2, Months 3, 6, 9, 12, 15, 18	Study Team
Protocol Deviation (form 25)	Records all deviations from stated protocol procedures	As needed	Study team
Adverse Event and Serious Adverse Event Forms (forms 26a, 26b, 27a, 27b, 28a, 28b))	Records all adverse events and serious adverse events for participants and dogs	As needed	Study team
Exit Interview (forms 24a, 24b)	Assessment of perceived benefits of assigned study dog.	At 18 month visit or following the permanent removal of the study dog (i.e., cessation of intervention).	Interview format by trained interviewer.
Dog Trainer Evaluation (form 24c)	Evaluate dog training skill level	At 18 month visit	Dog Trainer
Inclusion/Exclusion (form 16)	document study eligibility status	Study withdrawal	Study team
Intervention Discontinuation (Dog Return) Form (form 22)	Document the temporary or permanent removal of study dogs.	Complete this form for all paired participants upon return of dog to the VA.	Study team
Study Completion/Termination (form 24)	Document study completion of or termination from the study.	Complete this form for all randomized participants upon completion of, or withdrawal from the study.	Study team
Informed Consent Confirmation (form 86)	Document informed consent process.	Complete this form after the participant	Study team

Form	*Purpose*	*When Completed*	*Who Completes*
		has signed the Informed Consent.	
Veteran and Service/Emotional Support Dog Visit Report (form 20)	Observational assessment of dog behaviors, and dog-participant interactions	Post-pairing week 1, and at months 1, 6, 9, 12, Optional at week 2 and Month 2, ad hoc visits as needed	VA Dog Trainer (national or local).
Dog Related Questions (form 21)	Reported satisfaction with dog and dog concerns	Post-pairing weeks 1 and 2, and at months 1, 2, 3, 6, 9, 12, 15 and 18, ad hoc visits as needed	Completed in interview format led by VA Dog Trainer
Veterinary Checklist (form 23), and packet contents including contact face sheet and cover letter	Assesses wellness of dog	Week 1 (initial), Month 06, Month 12, Month 18	Veterinarian selected by participant
Post-pairing survey	Assessment of pairing process	One week post pairing	Participant
Reasonable accommodation letters for Housing and Air Travel	May be required if participant lives in an apartment and/or travels with their study dog	Only used if required	Provided to participant as required
Vendor information packets (optional)	Provides information about the vendor and post study vendor resources.	Optional: At 18 month visit when available once all study related tasks have been completed and participant agrees to keep their study dog.	Information packet provided to participant when available by the assigned vendor.
Home Suitability Guide	Provides a list of items that the dog trainer will be checking during the Home Qualifying Visit. Its purpose is to assist the participant in home preparation and to allay anxiety regarding the Home	At Clinic Qualifying Visit if the individual meets CAPS and MINI inclusion criteria. Can be provided as needed	Information document provided to participant.

Form	*Purpose*	*When Completed*	*Who Completes*
	Qualifying Visit.		
Clinician In-service Presentation	Provides overview of the study and criteria to VA clinicians.	Study recruitment as needed.	Presentation to non-participants.
Recruitment Flyer and Brochure	Provide information about the study and study criteria.	Study recruitment.	Available to potential participants.
ICF Visual Aid	Overview of study procedures and visits.	During consent as needed.	Paper format given to potential participants.
Telephone Screening Script	Review study criteria prior to scheduling the initial Clinic Qualifying Visit.	Telephone Screening prior to Clinic Qualifying Visit.	Phone interview with participant.
Management Of Suicidal Patients	Provides site specific guidelines for managing VA patient suicidality.	As needed based on reported suicidality.	Policy guideline document.
Emotional Support Dog ID card	Provides brief summary of the dog's rights under US law and includes a picture identification of the study dog.	Provided to the participant after placement with their study dog.	ID card given to the participant.
Trupanion Flyer and Insurance Card	Provides Dog related insurance information including insurance ID number.	Provided to the participant after pairing/placement with their study dog.	Flyer given to the participant.
Secondary Contact Information form	Emergency contact and secondary dog caretaker contact information. Individuals listed on the form should be aware of the participant's involvement in the study and have agreed to be listed as	Home Clearing Visit and updated thereafter.	Study Team.

Form	*Purpose*	*When Completed*	*Who Completes*
	a contact.		
Family Education form	Provides dog education materials for participants of children between the ages of 5 and 10 years children in the home full time.	Provided at the Home Clearing Visit and reviewed at the placement visit for EMOTs or Week 1 visits for SDs. Can be provided as needed.	Study Team provides printed copies to the participant prior to pairing and reviewed as appropriate in proximity to the week 1 post pairing visit.
Dog Ownership Chip Registry Instructions	Provides instructions on changing the chip registry information from the VA to the participant.	18 Month visit or mailed after the completion of the 18 Month visit	Provided to participants who choose to keep their study dog
VA Certificate of Study Completion (dog return and dog retention versions)	Certificate of study completion and dog ownership	18 Month visit or mailed after the completion of the 18 Month visit	Provided to participants who choose to keep their dog
Transfer of Dog Ownership Verification Form	To document the participants decision to keep or return the study dog at the successful completion of the study.	18 Month visit	Participant
Lost to Follow-Up letter	Mailed to participants that do not respond to phone calls.	As needed	Sent prior to withdrawing the participant from the study
Paired Participant Withdrawal letter	Provides documentation of the withdrawal to the participant	Given to the participant at the time of withdrawal	If circumstances prevent the direct delivery to the participant the letter can be filed in the study record.
Emotional Support Dog Pairing Checklist	Help ensure that the local VA trainer provides the Veteran with the necessary training and information needed for a successful pairing outcome with their assigned	Pairing visit	Dog Trainer

Form	*Purpose*	*When Completed*	*Who Completes*
	Emotional Support Dog.		
Dog Safety Education for Newborns	Educational materials for participants who become pregnant after pairing or introduce a newborn, infant, or toddler into the home after pairing (i.e., marriage, significant other, etc.)	Provided to the participant prior to pairing or at anytime family status changes or potentially changes to include infants/newborns in the home.	Provided to the participant. Can be reviewed by a study team member.
Dog Care Sheet	Educational refresher on important health components that can benefit both the bonding relationship and health of the dog overtime.	Completion of the 18 Month Visit. Can be provided as needed.	Provided to the participant. Can be reviewed by a study team member.
ADA Service Dog Public Access Rights (pocket card)	Explains service dog legal rights protected by the department of justice.	Offered to service dog participants after unblinding.	Staff

Measures and forms:

- Referral checklist: Mental health providers will complete a referral checklist for each potential participant. The checklist will request information about anger management, cognitive ability, suicidal ideation, delusions and psychoses, and will request input on whether the provider considers it appropriate for the potential participant to have/own a dog.
- Demographic Interview. The demographic interview obtains data information about the participant's age, marital status, education level, race/ethnicity, service record, employment status, and income, activity levels and use of alternative therapies for PTSD.
- CAPS: The Clinician Administered PTSD Scale (CAPS) is the gold standard for the diagnosis of PTSD (Weathers et al., 2013a). It is a well-validated structured clinical interview that measures the intensity and frequency of the 20 DSM-5 PTSD symptoms. It includes questions which target the onset and duration of symptoms, subjective distress, impact of symptoms on social and occupational functioning, improvement in symptoms since previous CAPS (if applicable), overall PTSD severity and specifications for the dissociative subtype. The CAPS updated for DSM-V produces a dichotomous assessment of PTSD. A member of the research team who is trained in administering the CAPS will complete the assessment.

- MINI EVALUATION (MINI): To assess the subject's drug/alcohol dependence, depression, and other Axis-I disorders according to DSM –V criteria the MINI, version 7.0.0 will be conducted during screening. A trained interviewer using the MINI screen questionnaire will first assess each subject. If a potential DSM-V disorder is identified via the screen, the clinician will administer the corresponding module of the complete MINI interview. Current alcohol dependence will be assessed with the MINI and used as a dichotomous stratification factor based on a definite (not probable) diagnosis (yes/no).

- Confirmation of Ongoing Mental Health Treatment. A member of the study team will confirm that the potential participant is enrolled in mental health services at the VA and has attended at least one visit in the prior 90 days. For the purposes of this study, acceptable ongoing mental health treatment modalities include PTSD therapy, medication review (including side effects), case management via a social worker or similar, primary care follow up regarding symptoms and/or medications, symptom burden/response, etc. If primary care providers are to be the sole managers of PTSD the medical records should indicate that the mental health treatment team has concluded and that no further mental health specialty care is currently required. If documentation within the medical records does not clearly describe the abovementioned examples, the local LSI must contact other care professionals to determine the status of care.

- WHODAS 2.0. The World Health Organization Disability Assessment Scale II is a structured 36-item instrument, which assesses difficulties in six domains of life during the last 30 days. A total disability score is produced as well as domain scores. The domains include:
  1. Cognition: understanding and communicating with the world
  2. Mobility: moving and getting around
  3. Self-care: attending to one's hygiene, dressing, eating and staying alone
  4. Interpersonal interactions: getting along with people
  5. Life activities: domestic responsibilities, leisure, and work
  6. Participation in society: joining in community activities

  The WHO-DAS was chosen after careful consideration of cross-cultural applicability and review of existing instruments (Ustun, 2001). The domains are congruent with and map to the International Classification of Functioning, Disability and Health (ICF) (WHO, 2001), the WHO manual for the classification of the consequences of disease. One of the driving forces behind development of the WHODAS 2.0 was the international standardization of disability measurement and classification that cuts across disease conditions and cultures. The linkage between the WHODAS 2.0 and the ICF parallels the relationship between the Composite International Diagnostic Interview (CIDI) for psychiatric disorders with DSM-IV and ICD-10. For the WHODAS development, field trials were conducted throughout the world on over 65,000 individuals. These included cross-cultural applicability research and two waves of more traditional psychometric testing in geographically and culturally representative countries. Respondents from the general population as well as clinical populations, including persons with physical problems, mental or emotional problems, and alcohol and drug use related problems, were included (Ustun, 2010. The end result of these

investigations was the 36 item WHODAS 2.0. The total WHODAS 2.0 score has high internal consistency (alpha=0.86), a stable factor structure, and high test-retest reliability (intraclass correlation=0.98). The total score also shows a strong correlation with existing instruments, Rasch scaling properties across populations, and sensitivity to change (Ustun, 2010). In summary, the WHODAS 2.0 will provide an excellent measure of health and activity limitation and complement the health related quality life assessment using the Veterans RAND 12-Item Health Survey (VR-12). The WHODAS 2.0 will be completed in pen and pencil format by the study participant. It takes 10 to 15 minutes to complete.

- PTSD Checklist- PCL5: The PCL-5 is a 20-item self-report measure that assesses the 20 DSM-5 symptoms of PTSD. The PCL-5 is most similar to the PCL-S (specific) version. The wording of PCL-5 items reflects both changes to existing symptoms and the addition of new symptoms in DSM-5. (Weathers et al., 2013b). The PCL-5 will be completed in pen and paper format by the study participant. It takes 5 to 10 minutes to complete.

- Pittsburgh Sleep Quality Index (PSQI): The PSQI of [Buysse et al, 1989] is a 24-item survey used to assess sleep-related problems during the past month. Nineteen items are completed by the subject, and five items are completed by a bed partner or roommate. The five items answered by a bed partner or roommate are used as clinical information and are not included in scoring. The first 19 items are grouped into seven components (sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction) each weighted equally on a 0-3 scale. The seven component scores are then summed to yield a global score, which has a range of 0-21; higher scores indicate worse sleep quality. The seven component scores of the PSQI have an overall reliability coefficient (Cronbach's α) of 0.83. The PSQI will be completed in pen and paper format by the study participant. It takes approximately 5 to 10 minutes to complete.

- VR-12: Health Related Quality of Life will be assessed by the VR12, which is a modification of the VR-36, a generic health status measure that has been shown to be valid and reliable in a wide variety of health care settings (Ware et al,1992; Kazis, 1998). The VR-12 will be completed in pen and paper format by the study participant. It takes approximately 5 minutes to complete.

- Columbia Suicide Severity Rating Scale (C-SSRS): The C-SSRS is a 4-page form asking questions about suicidal ideation, intensity of ideation, and suicidal behavior. Developed by Posner and collaborators at the New York State Psychiatric Institute (Oquendo et al., 2003) the scale is intended for use by trained administrators. The questions contained in the C-SSRS are suggested probes. Ultimately, the determination of the presence of suicidality depends on clinical judgment. Clinical trials C-SSRS training is required for any individual administering the C-SSR. The C-SSRS will be completed in interview format. It takes approximately 10 minutes to complete.

- Patient Health Questionnaire (PHQ-9): The PHQ-9 is a diagnostic tool for mental health disorders used by health care professionals that is quick and easy for participants to complete. In the mid-1990s, Spitzer and colleagues at Columbia University developed the

Primary Care Evaluation of Mental Disorders (PRIME-MD), a diagnostic tool containing modules on 12 different mental health disorders. They worked in collaboration with researchers at the Regenstrief Institute at Indiana University and with the support of an educational grant from Pfizer Inc. The PHQ, a self-administered version of the PRIME-MD, contains the mood (PHQ-9), anxiety, alcohol, eating, and somatoform modules as covered in the original PRIME-MD (Kroenke et al., 2002). The PHQ-9 will be completed in pen and paper format by the study participant. It takes approximately 5 minutes to complete.

- Dimensions of Anger Reactions (DAR): This seven item scale measures anger disposition that is directed to other individuals (Forbes et al, 2004). It has been shown to be reliable and sensitive measure used in populations that have PTSD. The DAR will be completed in pen and paper format by the study participant. It takes approximately 5 minutes to complete.

- Non-VA Healthcare Utilization (Non-VA Inpatient Care and Non-VA Outpatient Care): Non-VA Healthcare Utilization will be assessed using the "HERC non-VA utilization survey." This survey was created in 2011 by VA Health Economics Resource Center (HERC) investigators. The HERC non-VA utilization survey is self-administered and asks about outpatient and inpatient (including Emergency Department) visits to non-VA providers. Inpatient visits are characterized by hospital name, location, length of stay, and type of hospital (e.g., general medical, nursing home, psychiatric, or substance abuse facility, etc.). S survey items regarding time spent receiving paid or unpaid caregiving will be omitted because they are outside of the scope of this analysis. The Non-VA Healthcare Utilization form will be completed in interview format. It takes approximately 10 minutes to complete.

- Employment/Productivity: Participants' employment status and work productivity will be assessed through the Work Productivity and Activity Impairment Questionnaire: General Health Problem V2.0 (WPAI:GHP). The WPAI is the most frequently-used instrument to assess work productivity (Prasad et al., 2004). The WPAI: GHP is a 6-item questionnaire that can be interviewer-administered or completed by a respondent (Reilly et al., 1993). The questionnaire asks about the number of hours of work missed due to health problems as well as the effect of the health problems on productivity while at work. The Employment/Productivity form will be completed in interview format. It takes approximately 5 minutes to complete.

- Medication Log: A medication log will be completed for the participant listing all Non-VA prescribed medications (prescription and over the counter) that the participant is currently taken or has taken for 30 days prior to informed consent. At every visit during the study, this medication log will be updated with current medication information. The Medication log will be completed in interview format. Completion time varies.

- Exit Interview: an exit interview will be administered to obtain details related to participant perceptions of being paired with a study dog. There are two version of the exit interview: one for use with participants who had an emotional support dog, and one for participants who had a service dog. Content includes questions about the overall impact of the study dog on their PTSD and mental health symptoms, public access experiences, social outings, impact on

friends and family, and daily living activities. Additionally, participants will be asked about the usefulness of specific training behaviors of their assigned dogs, reasoning for keeping or returning their study dog at the end of the study, obstacles to having a service or emotional support dog, and past experiences with owning a service dog. Open-ended questions are included throughout the interview in order to elicit additional details related to their overall experiences. Study related experiences relevant to the content of the Exit Interview, that are reported by participants prior to administering the Exit Interview, can be documented by study staff. This additional information will be included with the Exit Interview at the end of the study.

- Suitability to Have a Dog Checklist: A home assessment checklist to assess suitability of the home environment for dog placement. The checklist documents availability of space for dog to play, availability of space for toileting of dog, the presence of other pets in the home, and cleanliness and safety of the home. The measure was developed specifically for this study because no other such measure exists.

- **Screening Phase**

1. Preliminary Screening:

- Prior to scheduling a potential participant for a clinic qualifying visit the potential participant's chart notes will be examined to determine whether there are indications that the potential participant is ineligible for the study and whether he/she has ongoing mental health treatment at VA.
- A telephone screening will be completed to assess eligibility and thoroughly explain the study procedures.
- A referral letter from mental health provider will be obtained, or confirmation that a signed referral letter will be available by clinic qualifying visit will be obtained.
- In order to help manage expectations, potential participants should be informed that the screening phase is an ongoing process and that final eligibility will not be determined until the successful completion of the dog Placement or Pairing process.

If any CPRS note, the telephone screen, or other information indicates a potential participant is ineligible, the LSI or a designated member of the study team will inform the individual that they cannot participate in the study.

2. Activities prior to Clinic Qualifying Visit.

- If a signed referral checklist has not been received from a mental health provider in advance of the scheduled Clinic Qualifying visit, a member of the study team must confirm by telephone prior to the visit that the potential participant will be bringing it in person to the appointment. If confirmation is not received, the Clinic Qualifying visit must be rescheduled.

- A member of the study team will make a reminder call to the potential participant. If applicable, the potential participant will be reminded to bring the signed referral checklist to the appointment.

3. Clinic Qualifying Visit at VA study site.

- Informed consent and HIPAA authorization will be obtained.
- If not already received, the referral checklist/letter will be collected.
- The Demographic interview and CAPS will be completed
- The C-SSRS will be administered using the 'during the last month' time frame.
- If the participant meets the screening criteria for the CAPS, the MINI will be completed.
- If the individual meets CAPS and MINI inclusion criteria he/she will be provided with the Home Suitability Guide.
- The participant will be informed that secondary contact information for an emergency contact and dog caretaker will be collected no later than the Home Clearing Visit in order to be eligible for the pairing process.
- Veteran will be paid $25.00 for this first Screening Visit.

4. Home Qualifying Visit and Baseline Assessments

If the individual meets the Clinic Qualifying visit criteria, a home visit will be scheduled within 3 weeks of the Clinic Qualifying visit, unless holiday schedules or an unusual circumstance such as veteran illness prevents the visit within that time frame. In such circumstances, the home visit will be completed as soon as possible. The home visit is conducted to ensure that the potential participant's home environment is suitable for a dog. The visit will be conducted by one of the study dog trainers and another member of the study team.

- All individuals who reside at the home should be present during the visit if possible. They will be asked whether they are willing to have a dog in their home and be responsible for the dog in the long-term absence of the potential participant (e.g. if individual was admitted to the hospital).
- It will be emphasized to potential participants that they should at minimum maintain a residence in the same locality but ideally should stay in the same home throughout the enrollment period because of the necessity to conduct home visits throughout. If a potential participant changes residence while enrolled in the study, he/she must be informed that the new home must be suitable for a dog and that the new home must be geographically and structurally accessible to the study team.
- The "Suitability to Have a Dog Checklist" will be used to assess the home environment.
- If needed, the participant will be provided with information to share with their homeowners association and/or rental agency regarding the allowance of having a dog in their home. This information includes the rights of Emotional Support Dogs protected under the Department of Justice fair housing and Service Dogs protected under the American with Disabilities Act.
- Participants will be encouraged to ensure that their home owner/rental insurance policy includes a dog.

- If the home is deemed suitable or only minor modifications are required, baseline assessments will be completed.
- If the home is deemed unsuitable for a dog, the potential participant will be given a detailed list of corrections needed, a second home qualifying visit will be scheduled, and Baseline assessment will NOT be completed. At that visit, if the home is now deemed suitable for a dog, baseline assessments will be completed. If still unsuitable the participant may be ineligible to continue in the study. However, exceptions can be made at the discretion of the dog trainer.

The following baseline assessments will be administered:

1. WHODAS 2.0.
2. PCL5
3. PSQI
4. VR-12
5. PHQ-9
6. DAR
7. HERC non-VA utilization survey
8. WPAI:GHP
9. Medication Log (initial interview covers medications taken 30 days prior to the Clinic Qualifying visit up to the date of the current visit.)

Additional visit-related information and activities:

- Participants will receive $10.00 for their time and effort.
- Secondary contact information (full name, phone number(s), address, and relationship to the participant): if contact information has already been collected verify with the participant that the information has not changed. If not already collected obtain the information or remind the participant to provide the information prior to the pairing process.

<u>The day on which the Baseline visit is completed initiates day one of the observation phase.</u>

- **Observation Phase**

The Observation Phase will last a minimum of three months. It will end once a dog becomes available. During this phase:

Participants will complete a Dog Care Course

- Course content will include discussion of:
  - Health issues and when to seek medical attention
  - General care and feeding of dogs (grooming, food, water, exercise, etc.)
  - Recognition and prevention of dog aggression

- Differences between Service Dogs and Emotional Support Dogs Legal rights of Service Dogs and Emotional Support Dogs (ADA, FHA, ACAA)
- Financial burden associated with having a dog both during and after the study

VIII. RANDOMIZATION

- **Randomization**

Once the participant passes the home evaluation and eligibility check, the participant will be randomized using the CSPCC telephone randomization system. During this call, the participant will be randomized to a dog type (SERV or EMOT). Randomization will utilize a random block scheme. At this point, vendor, participant, and site are blinded to the intervention group (SERV or EMOT) to which the participant is randomized. After randomization, a vendor will be assigned based on dog availability. The site will be informed of the assigned vendor and will provide the participant with the vendor's contact information. It will be the participant's responsibility to contact the vendor within two weeks of receipt of contact information. The vendor then has 2 weeks in which to interview the participant so that an appropriate dog match can be made. This interview should take no more than three hours.

The participant and vendor remain blinded to group to which participant is randomized. Following the interview, the vendor and participant may not interact further without the specific approval of the study team. If vendor needs additional information from participant, they will contact the contracting officer's representatives (CORs) for appropriate protocol. Vendor will be unblinded to the group to which participant is randomized immediately after the interview has been completed, but neither the participant nor site will be unblinded until successful completion of the Home Clearing visit. There will be a minimum period of 3 months between interview and dog pairing. If at 6-months post-interview no dog is available in the foreseeable future, the participant may be assigned to a new vendor. In these cases the participant will be interviewed by the new vendor and the observation period may start over. Vendor selection will be made based upon current and pending dog availability and expected dog delivery schedules dictated by contracts.

If a vendor has concerns about a participant's appropriateness for a dog/study participation, the vendor will contact VA contract personnel (not the Veteran), who will communicate with study team members to discuss the issue and if necessary inform the participant.

The vendor will store paper copies of the participant's information in a secure space and locked file cabinet. Only the employees of the vendor who have completed the VA requirements for data security (TMS classes) and background checks will have access. This information will be included in the Statement of Work (SOW) to which the vendors respond. Should the vendor obtain computer capabilities that meet the standards of the VA, then data may be stored on their computer.

- **Baseline 2 and Home Clearing Visits.**

The Baseline 2 and Home Clearing visits will be scheduled to occur once a dog becomes available but at a minimum of three months after the Baseline visit.

Baseline 2 Visit: will take place in the clinic. The following assessments will be completed:

1. WHODAS 2.0.
2. PCL5
3. C-SSRS
4. PSQI
5. VR-12
6. PHQ-9
7. DAR
8. HERC non-VA utilization survey
9. WPAI:GHP
10. Medication Log
11. Dog Knowledge Test

Additional visit-related activities and information:

- Participants will receive $25.00 for this home visit.
- Secondary contact information (full name, phone number(s), address, and relationship to the participant): if contact information has already been collected verify accuracy of the information provided by the participant. If not already collected obtain the information or remind the participant to provide the information prior to the pairing process.
- If children between the ages of 5 and 10 years reside in the home provide the AVMA family education form.

The Home Clearing Visit: will take place at participant's home. This visit is conducted to confirm that the participant's home remains suitable for a dog. At the Home Clearing visit the following will occur:

- The Suitability to Have a Dog Checklist will be re-administered.
- Review of the DOG course and, if the participant did not pass the Dog Knowledge test (score ≥ 80%), provide further education to ensure the participant is aware of the responsibilities and obligations of dog ownership.
- Veterinary Checklist packet can be provided at this visit or at the week 1 post pairing visit. This decision will be based on the discretion of the local study team.
- Collect or verify secondary contact information (full name, phone number(s), address, and relationship to the participant).
- Once a study dog trainer considers the participant has sufficient knowledge and the home is confirmed to be suitable for a dog, the participant will be unblinded to the type of dog (SERV vs. EMOT) to which they were randomized and will be provided with vendor contact information.
- Review study requirements and expectations that follow the completion of the Home Clearing visit and pairing process.

If randomized to the Service Dog group, the vendor will contact the participant to coordinate travel. It should be explained to participants that:

- They will travel to the vendor's location for training to become a service dog handler.
- Training can last several weeks, though in most cases it will last between 1-2 weeks.

- The pairing process will cover basic obedience commands, execution of the specific trained tasks, basic dog care, and the public access rights given Service Dogs by the ADA. The participant can request an overview of the training class and ask questions as needed.
- Travel to and from the vendor's facility may be completed by air or personal vehicle.
- Reimbursement for use of a personal vehicle will at the government mileage rate paid on return from training.
- To avoid out-of-pocket expenses, the vendor will pay for air travel (and will later be reimbursed by VA).
- Out-of-pocket expenses may be unavoidable in some circumstances. In this instance, participants will be reimbursed by VA for expenses allowed by Federal Travel Regulations in a timely manner.
- The vendor will provide accommodation during the training session.
- The vendor will provide food or reimburse food expenses during the training.
- ADA Service Dog Public Access Rights pocket card.

Expenses for accommodations are included as part of the Statement of Work (SOW) for the Vendor contract. Vendors will provide food or reimburse food expenses for participants while they are at the Service Dog pairing visit, using the government per diem rate for that locale. The vendor will invoice the VA for the expense as dictated by the contract SOW.

If randomized to the Emotional Support Dog group, the participant will work with local dog trainer to receive their dog and dog training. It should be explained to participants that:

- The local dog trainer will train the participant how to handle his/her dog
- The training will take place in the participant's home and local vicinity
- The training will last between 1 and 2 days.
- Additional training visits can be scheduled as needed.
- On completion of training, the dog trainer will provide the participant with a list of important phone numbers (probably printed on a refrigerator magnet).
- An emotional support dog ID card, with the name and picture of the assigned dog, and a brief summary of the dog's right under US law on the back of the card.
- If applicable a letter signed by the LSI establishing the right of an emotional support dog to live in housing where pets are not allowed.
- If applicable a letter signed by the LSI establishing the right of an emotional support dog to fly in the cabin with the participant for commercial air travel.

IX. TREATMENT REGIMENS

For this section, the following terms are defined:

- Participant: A Veteran who has been enrolled in the study.
- VA Dog Trainer: A person employed by the VA with special skills and knowledge about training dogs. Each VA research site has a "Local" VA Dog Trainer assigned to assist the participants at that site with any problems they may experience after they receive either a Service Dog or an Emotional Support Dog. A "National" VA Dog Trainer (based in Atlanta) has been hired to supervise the Local VA Dog Trainers and coordinate their efforts.
- Handler: A term used to denote a participant who has learned or is learning to give commands to either a Service Dog or an Emotional Support Dog.
- Pairing: The training process in which a handler is given instruction and practice in commanding and caring for a Service Dog. The pairing process takes place at one of the dog vendors under contract to provide dogs for the study.
- Placement: The process in which a handler is trained to command and care for an Emotional Support Dog. The placement process takes place at the handler's home, and is supervised by a VA Dog Trainer.

- **Service Dogs and Emotional Support Dogs**

There are two randomization arms. Veterans will receive either a Service Dog or an Emotional Support Dog. In short, a Service Dog is an assistance dog trained to perform tasks that specifically address a person's disability, and it has public access privileges per the Americans with Disabilities Act (ADA) administered by the Department of Justice. In contrast, an Emotional Support Dog helps person with a disability by providing companionship or emotional support, but is not trained to perform specific tasks to address a disability, and public access rights are restricted to commercial air transport. All dogs will be proofed (tested against contract standards) by the National VA Dog Trainer or designee to verify that the dogs meet all behavioral, obedience, and training contract standards.

Service Dogs (SERV). A Service Dog must be well behaved at all times and promptly respond to commands (verbal or hand signals) given by the handler. To be effective in the trained tasks, a Service Dog must exhibit a strong desire to please the handler and remain at the handler's side, unless otherwise directed. They must be well socialized to people and other animals. Per the contract in place with the vendors, as part of Service Dogs must pass the AKC Canine Good Citizen (CGC) examination, Assistance Dogs International (ADI) Public Access Test (PAT), and also demonstrate the 5 tasks specified by the contract (Lights, Sweep, Bring, Block, and Behind).

Emotional Support Dogs (EMOT). Emotional support dogs must also be well behaved at all times, and well socialized to people and other animals. However, they are not taught specific tasks that address disabilities associated with PTSD. Emotional Support Dogs must pass the AKC Canine Good Citizen and AKC Community Canine examinations during the proofing process.

Once an Emotional Support Dog is proofed against contract standards, it will be shipped to the designated VA study site by the vendor, then kenneled until arrangements can be made by the local study coordinator or designee to place the dog with a participant.

In contrast to the 1-2 week pairing process for Service Dogs conducted at a contract vendor's property, a participant randomized to receive an Emotional Support Dog will undergo a 1-2 day "placement" process at their home, conducted by a VA Dog Trainer. As part of the placement process, handlers will be reminded about the definition of an Emotional Support Dog, the allowances regarding reasonable accommodation for housing, and provided necessary letters if required. The handler will also be shown and then be asked to demonstrate obedience commands taught to the dog. The VA Dog Trainer will also go over care of the dog and make sure the house is ready for the dog.

- **Contract Training Requirements for All Dogs**

During the proofing process, the National VA Dog Trainer, a Local VA Dog Trainer, a VA Veterinarian, or another VA employee serving on the proofing team will fill all roles specified in the testing process. Note that the proofing process will always be conducted at a vendor's property.

Basic Obedience: All dogs will be trained in basic obedience which includes commands for sit, down, heel, come, and stay. These commands help the participant control the dog and help the dog learn self-control. Mastery of basic obedience commands becomes the foundation for successful completion of the AKC Canine Good Citizen (CGC) test, which both Service Dogs and Emotional Support Dogs must pass. CGC certification indicates that the dog has demonstrated the ability to be well mannered in the home, public settings, and the presence of other dogs.

Canine Good Citizen test (AKC, 2013). Per the VA contract with vendors that provide dogs for the study, all dogs must pass the Canine Good Citizen test before acceptance by VA.

Test 1: Accepting a friendly stranger: The dog should allow a stranger to approach and speak to the handler. A stranger will approach the dog and greet the handler in a friendly manner. The dog should be ignored by both the trainer and handler at this time. The stranger and handler should shake hands and greet each other. The dog should not show signs of jealousy or shyness, and should not break position or seek attention from the stranger.

Test 2: Sitting politely for petting: The dog should allow a friendly stranger to touch or pet it while in everyday situations with the handler. The dog should sit in heel position while the stranger pets the dog. The stranger should touch the dog on the head and body. The handler can talk to the dog during this test. The dog should not show jealousy or shyness, and should not break position unless given a command by the handler.

Test 3: Appearance and grooming: Dogs need to be evaluated to ensure they will allow grooming and examination by someone like a groomer, veterinarian, or friend of the handler (the "stranger"). A stranger will inspect the dog for cleanliness and grooming, as well to see if the

dog appears to be healthy (proper weight, clean, alert). The stranger will softly brush the dog and examine the ears and feet, using equipment provided by the vendor. The dog does not have to hold a certain position during the examination. The handler can talk to the dog and offer praise during the exercise.

Test 4: Out for a walk (walking on a loose lead): This test shows that the handler is in control of the dog. The dog can walk on either side of the handler. The handler should be able to readily see that the dog is attentive and is responding to the handler's movements and changes of direction. The dog does not have to be aligned exactly with the handler and does not have to sit when the handler stops. A pre-determined course may be used or the handler can conduct the test spontaneously using commands. Either way, there needs to be a right turn, left turn, and an about turn with at least one stop in between and another at the end. The handler can talk to the dog, offer praise, or give commands in a normal tone of voice. If the handler chooses, he/she can have the dog sit at the halts.

Test 5: Walking through a crowd: A dog should be able to move politely through pedestrian traffic and should be under control in public places. The dog and handler will navigate around and pass close to at least three people. The dog may show transient interest in the strangers, but should walk with the handler without showing excitement, shyness, or jealousy. The handler may talk to the dog and/or give encouragement or praise during this test. The dog should not jump on people in the crowd or pull on the leash.

Test 6: Sit and down on command and staying in place: The dog should be able to demonstrate that it has been trained to respond to the handler's commands, including sit and down, and that it can remain in position until released by the handler. The dog should demonstrate sit AND down on command, then the handler chooses the position for leaving the dog in the stay. Before performing this exercise, the dog's leash is replaced with a lead 20 feet long. The handler can take a reasonable amount of time and use more than one command to get the dog to sit and then down. The proofing team will determine if the dog has responded to the handler's commands appropriately. The handler cannot force the dog into position, but can touch the dog to offer encouragement. The handler will then tell the dog to stay and the handler will walk forward the length of the line (20 ft.). The handler will then turn and return to the dog at a natural pace. The dog should stay where it was left (it may change position) until the handler releases the dog. The dog may be released from the front or the side.

Test 7: Coming when called: The dog should come when called by the handler. The handler will walk 10 feet away from the dog, turn to face the dog, and call the dog. The handler can encourage the dog to get the dog to come. A dog can be told to "stay" or "wait" if the handler chooses. The handler can also simply walk away, giving no instructions to the dog.

Test 8: Reaction to another dog: The dog should be well behaved around other dogs. Two handlers and their dogs will approach each other from a distance of about 20 feet, stop, shake hands and greet each other, then continue on for about 10 feet. The dogs should only show transient interest in each other. Neither dog should seek attention from the other dog or its handler.

Test 9: Reaction to distraction: The dog should be confident at all times when placed in common distracting situations. Two distractions will be used. Distractions can be things like dropping a chair, rolling a crate dolly past the dog, having a jogger run in front of the dog, or dropping a crutch or cane. The dog may show casual interest or curiosity and/or may appear slightly startled. The dog should not panic, try to run away, show aggression, or bark. The handler can talk to the dog, encourage or praise it throughout the exercise.

Test 10: Supervised separation: The dog should demonstrate that it can be left with a trusted person, if necessary, and will maintain training and good manners. One of the proofing team members will say something like, "Would you like me to watch your dog?" and then take hold of the dog's leash. The handler will go out of sight for three minutes. The dog does is not expected to stay in position, but it should not continually bark, whine, pace unnecessarily, or show anything stronger than mild agitation or nervousness. The proofing team member can talk to the dog but should not engage in excessive talking, petting, or other management attempts.

Equipment: A leash must be used for all tests. Dogs should wear well-fitting buckle or slip collars made of leather, fabric, or chain.

Encouragement: Praise and encouragement can be used by handlers to the dogs throughout the test. Petting can also be used between exercises. Handlers may not use food or treats during testing. Toys, squeaky toys, etc. may not be used in order to get the dog to do something.

Failures – Dismissals: Dogs will be disqualified for eliminating during testing. Any dog that shows aggressive behavior such as growling, snapping, biting, attacking, or attempting to attack will be disqualified.

- **Emotional Support Dog Specific Training**

All Emotional Support Dogs will pass the AKC Community Canine test (AKC, 2013). The AKC Community Canine test is the advanced level of the AKC's Canine Good Citizen Program. The AKC Community Canine test is intended to be administered in situations more realistic than a show dog ring.

Test 1. Dog stands, sits or lies down and waits under control while the owner: The dog sits at the registration table and waits under the control of the handler while the handler fills out paperwork, or, if the test is done in the community, dog waits while the handler sits and has a snack or visits with another person (e.g., at a park). The length of time for this exercise should be about 3 minutes.

Test 2. Walks on a loose leash in a natural situation (not in a ring)–does not pull: This test is the same as described above in the Canine Good Citizen test, except that it is done in a natural situation (i.e., community and not a ring) and the dog does not pull. The test should include at a minimum a left turn, right turn, stop and fast and slow pace.

Test 3. Walks on loose leash through a crowd: A dog should be able to move politely through pedestrian traffic and should be under control in public places. The dog may show transient interest in strangers, but should walk with the handler without showing excitement, shyness, or jealousy. The handler may talk to the dog and/or give encouragement or praise during this test. The dog should not jump on people in the crowd or pull on the leash. This test should be conducted at a show or in class (not in a ring) or in the community, dog walks on sidewalk, through a crowd at a community fair, park, on a trail, through a busy hallway, etc.

Test 4. Dog walks past distraction dogs present; does not pull: This item may be tested along with #3 if there are dogs in the crowd, etc. The dog should be well behaved around other dogs. This test can be conducted at a show or class where the dog walks by dogs waiting in the crowd (dogs 2 ft. apart) or in the community where the dog walks by other dogs on a trail, sidewalk, in a hallway, etc.

Test 5. Sit–stay in small group (3 other people with dogs): The purpose of this exercise is to test the dog's ability to be under control when in close proximity to other dogs. The exercise begins with the dog sitting at the handler's left side on a least about 3 feet apart. Handlers and dogs are in an informal circle/square while handlers have a conversation. As the handlers engage in informal conversation, dogs are permitted to change position. They are not penalized for lying down or standing, as long as they remain under control and do not move to go to other dogs. This exercise simulates waiting for an elevator, getting together to plan a hike, debriefing after a therapy visit, etc.

Test 6. Dog allows person who is carrying something (backpack, computer bag, etc.) to approach and pet it*:* A VA proofing team member asks *"May I pet your dog?"* (Item is placed on floor/ground before the person pets the dog). The item can be placed 2-3 ft. from the dog. Dogs should not shy away from the bag, nor should they lunge toward it and put their heads inside.

Test 7. "Leave it.": Dog walks by food and follows handler instructions to "Leave it." The food should be placed 2-3 feet away from the dog. This can be food placed by the evaluator on the floor or ground in a food dish with a wire cover as in Rally. The dog is walked by the food and should not lunge toward it.

Test 8. Down or sit stay–distance (owner's choice): The dog should be able to demonstrate that it has been trained to respond to the handler's commands, including sit or down, and that it can remain in position until released by the handler. The dog is placed on a 20–ft. line and the owner walks away with their back to dog, picks up an item (e.g., backpack, training bag, clipboard, folder etc.) placed on the floor/chair/ground by the evaluator and returns to the dog. The handler returns to the dog and gives the item to another VA proofing team member.

Test 9. Recall with distractions present (coming when called): The dog should come when called by the handler. The handler goes out 20–feet (off center) and calls dog. The dog is on the 20–ft. line from #8 above. Examples of distractions include another person, a stack of boxes, or

a chair with a shopping bag on it. The distraction should be placed as below. The dog should come to the handler when called.

Test 10. Dog will sit or stand stay (handler's choice) while owner enters/exits a doorway or narrow passageway. Handler calls dog through door when ready: Handler may also choose to 1) send the dog through first and have the dog wait for the owner, or 2) the handler may choose to have the dog go through the doorway at the handler's side. Whichever method is used, the dog must not pull the handler and must be under good control. Think of the handler having the leash in one hand and a cup of coffee in the other. The doorway or gate can be real or simulated with ring gates, two chairs, or a natural passageway (e.g., entrance to trail) in the community.

- **Service Dog Specific Training**

If a command is too close in pronunciation to a command routinely taught to dogs by the vendor, the vendor may request that another command name be substituted for the command names below.

1. PTSD Specific Tasks

Block (stand in front of Veteran to give space). VA proofing team members will evaluate the ability of the dog to provide physical space in front of the handler. The dog should perform the task reliably each time and should not have to be given a command more than three times before complying.

- This task shall be demonstrated in a public place. The handler will walk with the dog for at least 30 feet distance then and stop. The dog should naturally stop with the handler. As a VA proofing team member approaches from the front, the block command will be given. The dog should step in front of the handler to provide a physical barrier between the handler and the person approaching.
- The dog should be relaxed and not exhibit aggressive, defensive, or protective behaviors. The dog should not show interest in the person approaching and should stay in block position until released by the handler with an appropriate command.

Lights (locates and turns on lights) The dog will be tested on its ability to enter a room ahead of the handler and turn on the lights to ensure good visibility, reduce the risk of falls, and generally make the handler feel more at ease. This is a task that will be ultimately performed in the participant's home, and should be demonstrated in a home or simulated

home environment. A standard consumer light switch must be used (touch plates or similar adaptive hardware are not acceptable).

- To demonstrate the skill, the handler will walk the dog to a door or entryway and give the command, "lights." The dog should enter the room and turn on a light while the handler remains in the entryway.
- Once the lights are on, the dog will return to the handler's side and wait for further direction.

Sweep (room, perimeter, turn on lights, if needed). The dog will be tested on its ability to enter a room ahead of the handler and sweep the perimeter of a room. The dog should perform this task reliably each time and should not have to be given a command more than 3 times before complying. The dog must bark if a "stranger" is detected. This is a task that will be performed in the subject's home and should be demonstrated in a home or simulated home environment.

- To demonstrate the skill, the handler will walk the dog to a door or entryway. A command will then be given for the dog to do a sweep of the room.
- Once it is established that the room is clear, the dog will return to the handler's side.
- If the dog detects someone in the room it will alert the handler by barking.

Bring (retrieves an object at the request of the handler). Dogs will be tested on their ability to bring specified items to the handler upon request. The dog should perform the task reliably each time and should not have to be given a command more than three times before responding. This task may be applicable to both the home and public environments.

- To demonstrate the skill, the handler points to a specific object and gives the command. If the specified object is in a group of objects, the handler will say the name of the object in combination with the handler pointing to the object.
- Once the dog correctly locates the specified object, the dog carries the object to the handler and releases the object to the handler.

Behind (stand behind handler to give space). The dog will be tested on its ability to provide physical space behind the handler. The dog should perform the task reliably each time and should not have to be given a command more than 3 times before complying.

- This task should be demonstrated in a public place. The handler will walk with the dog for at least 30 feet then stop. The dog should naturally stop with the handler. The dog will be given the "behind" command and the dog should step behind the handler to provide a physical barrier behind the handler. The dog should stay in "behind" position until released by the handler.
- The dog should not exhibit aggressive, protective, or defensive behaviors.
- The dog should be alert but not show interest in or seek attention from the people behind the handler.

2. Public Access Test (ADI, Public Access test, 2013)

Controlled unload out of vehicle: At a location chosen by the VA proofing team, the handler unloads the dog from the vehicle. The dog should not exit the vehicle until the handler releases it. Once outside, the dog should wait quietly for further instruction from the handler. The dog may not run around, be off lead, or ignore commands given by the handler. Once the handler and dog are out of the vehicle and settled, another VA proofing team member should walk past (within six feet) with another dog. The Service Dog should be calm and controlled. The dog should not pull or be distracted by the other dog. The Service Dog should remain unobtrusive and exit a vehicle in a manner that is safe for both the dog and handler.

Approaching a building: After exiting the vehicle, the handler and dog must get through a parking lot and approach a building. The dog must stay in a heel position and cannot pull ahead or lag behind. The dog should not show fear toward cars or traffic. It should be relaxed and calm. Any time the handler stops, the dog should naturally stop.

Controlled entry through a doorway: The handler may enter a doorway in whatever manner they prefer, as long as it is safe. Once inside the building the dog should not attempt to wander, or seek attention from others. The dog should calmly walk beside the individual. The dog should not pull or try to push its way past the handler. It should remain calm and patient while entry is completed.

Heeling through the building: Once inside the building, the handler and the dog should walk together in a controlled manner. The dog should always be within touching distance or no greater than a foot away from the handler. The dog should not seek attention from others or pull ahead. The dog should readily adjust to speed changes, turn corners promptly, and move through a crowded area without being distracted or seeking attention. In small spaces, the dog should be able to navigate around obstacles and not knock things over. The dog should not attempt to pick up or play with merchandise.

Six foot recall on lead: In a large, open area the handler will perform a six foot recall with the dog remaining on lead. The handler will sit the dog, tell it to stay, travel six feet, then turn and call the dog. The dog should react quickly and not stop for attention from other persons or ignore the command. The dog should come close enough to other persons to be readily touched. The recall should be smooth and deliberate without the dog stopping or pausing along the way.

Sits on command: The dog will be tested on its ability to sit three different times with distractions. The dog should respond quickly each time and should not need to be given a command more than twice. Normal, reasonable behavior on the part of other persons in the area is expected. No extraordinary measures should be taken by other persons to elicit a response from a dog.

The first sit will be next to a plate of food placed on the ground. The dog should not attempt to eat or sniff the food. The handler can correct the dog away from the food, but then the dog must maintain a sit and ignore the food. The dog should not be taunted or teased with the food. This situation should be made as realistic as possible.

The second sit will use a VA proofing team member with a shopping cart, stroller, or wheelchair. The VA proofing team member will approach within three feet of the dog and walk by. The dog should remain in the sit position and not show any fear of the equipment. If the dog starts to move, the handler can correct the dog to maintain the sit.

The last sit will be a sit and stay as a VA proofing team member walks up behind the dog and handler, talks to the handler, and then pets the dog. The dog may not break the stay to solicit attention. The handler may repeat the stay command along with reasonable physical corrections.

Down on command: The down command will be done in the same manner as the sit using the same basic guidelines. The first down will be at a table where food will be dropped on the floor (see below for restaurant). The dog should not break position to eat or sniff the food. The handler may give verbal and/or physical corrections to maintain the down. Normal, reasonable behavior on the part of the assistants is expected. No extraordinary measures should be taken by assistants to elicit a response from a dog.

The second down will utilize an adult and child to approach the dog while in the down position. The dog should maintain the down and not solicit attention. If the child pets the dog, the dog should remain calm and controlled, and should not break the down position. The handler may give verbal and physical corrections if the dog begins to break position.

Noise distraction: The handler will walk with the dog in heel position and another VA proofing team member will drop a clipboard on the ground behind the handler and dog. The dog may acknowledge the noise, but should not show aggression or fear, shaking, etc. A normal startle reaction is fine (the dog may jump and/or turn) but the dog should quickly recover and continue in heel position.

Restaurant: The dog and handler will be seated at a table in a restaurant. The dog should go under the table unless size or space doesn't allow it. If the dog is unable to go under the table, it should lie somewhere near the handler. The dog should sit or lie down but may adjust its position for comfort as needed. The dog should not be up and down a lot or need a lot of correction. This is a good place to test the food drop during a down.

Off lead: In an appropriate place chosen by the VA proofing team, the handler will be instructed to drop the leash while moving so that the dog is aware it has been dropped. The handler will determine if he/she can maintain control of the dog and get the leash back in its appropriate position. The primary focus is that the dog is aware that the leash has been

dropped and that the handler can maintain control of the dog while the leash is put back into proper position.

Controlled unit: The dog and handler will leave the building with the same guidelines for entering. Safety and control of the dog are the main focus. The dog and handler will proceed across the parking lot and back to the vehicle. The dog should be in proper heel position and it should not show fear of vehicles, people, or traffic sounds.

Controlled load into vehicle: The handler will load the dog into the vehicle. The dog should not wander or show distraction. The dog should wait patiently for instructions. Emphasis is on safety and control.

Disqualifying Behaviors. A dog that displays aggressive behavior (growling, biting, raising hackles, showing teeth, etc.) will be disqualified. A dog that eliminates in a building or shows uncontrollable behavior (barking, jumping, uncontrolled attention seeking) will be disqualified.

- **Issues related to the dogs: Dog Health and Behavioral Standards for Service Dogs and Emotional Support Dogs.**

All dogs purchased by the VA will conform to requirements as set forth by the Statement of Work (SOW). In addition to acceptable performance during testing, all candidate dogs must be generally attentive toward people, free of anxiety around people and other animals in typical daily circumstances, and friendly toward people and other animals. They must display good socialization and be extremely tolerant of people. Any of the following defects in behavior displayed at any point during evaluation or consignment may be cause for rejection. This list is provided as a helpful guide and example to all persons presenting canines for purchase and is not intended to be a complete list or legally binding. The defects include but are not limited to:

- Unwillingness to comply or cooperate with handlers
- Fear, shyness, or nervousness in response to people or being handled
- Inability to work in proximity to people or other dogs because of aggressiveness
- Aggression toward handler
- Fearful or cowering behavior when being loaded or unloaded from a vehicle
- Excessive panting not due to heat or exercise
- Sensitivity or fear in response to environmental stimuli, such as public buildings (e.g., hospitals, grocery stores, etc.), vehicles, slick surfaces, elevated surfaces, stairs, noisy objects, crowds of people, and other stressors/distracters likely to be encountered in public places.

- **Breed, Sex, Weight, and Height Requirements**

The paragraphs below detail acceptable breeds, physical appearance, and size and weight requirements for canines.

- **Breed.** The canines shall be one of the following breeds, unless the study team and/or Contracting Officer provide specific approval otherwise: Labrador Retriever, Golden Retriever, Labrador Retriever-Golden Retriever cross, German Shepherd, or other breeds that fit the specified requirements. Canines should not weigh less than 45 pounds or more than 80 pounds. Canines should not be less than 20 inches at the withers. Rationale for using these breeds include:
    - These are the most common breeds used for Working and Service Dogs.
    - They have the physical requirements to perform the tasks to be included in the study.
    - Labradors and Golden Retrievers typically like humans. The dog personality is outgoing, the dogs are not perceived as threatening by the public, and have a lesser tendency to be aggressive.
    - German Shepherds can and do make good working/Service Dogs, and their genetics make them fearless, independent, and protective.
    - Based on site visits to vendors who provide working and Service Dogs by study team members, the dog type that they preferred was consistently the Labrador, the Golden Retriever, or Labrador and Golden cross. However, other breeds that fit the specified requirements would be considered and must have approval by the study team and contracting officer.
- **Age.** Canines must be at least 16 months, but not more than 24 months of age, at time of the evaluation.
- **Sex.** Males and females are acceptable. All canines will be neutered prior to purchase by VA.

- **Medical Requirements**
    - General Health. In general, all canines must be in excellent health with no acute or chronic disease or condition which could either hamper their ability to perform as a Service Dog or Emotional Support Dog, or would be excessively costly to treat or manage (>$1,000 per year). At the time of proofing, each animal must be medically sound.
    - Medical Screening of Radiographs of Candidate Service Dogs and Emotional Support Dogs. Vendors must submit proof that an animal has an Orthopedic Foundation for Animals score of fair or better on elbow and hip conformation. Minimum data imprinted ("flashed") permanently on the radiograph at the time of exposure will include canine identification (name, tattoo/brand number, and/or microchip number), whelping date (or age at time of radiographic examination), and date of examination. Radiographs of dogs should be obtained no earlier than 14 months of age.
    - Vendors will provide documentation, which will be reviewed by the COR within the time period specified by the SOW.
    - A canine that has been presented once for consideration for purchase and has been disqualified for medical reasons may not be resubmitted for consideration unless the vendor can document that the medically disqualifying condition has been corrected. Other disqualifying issues are listed in the SOW.

- **Standards**
  - **Gait.** All canines must display normal mobility at a walk and run. Canines are disqualified for any gait abnormality, which could affect the canine's ability to perform as a Service or Emotional Support Dog.
  - **Skin and Coat.** Skin and coat must be healthy in appearance, displaying no evidence of chronic dermatitis, allergies, infections, injuries, or marked external parasite infestation (e.g., ticks, mange, fleas, etc.). A matted, unthrifty hair-coat may not be grounds for disqualification but will raise concern about the canine's general health.
  - **Teeth and Jaws.** Canines will have normal dentition and dental occlusion. All four canine teeth should be present and must not be weakened by notching, enamel hypoplasia, or abnormal, excessive wear. They should not have more than 1/3 inch of the tip missing or have pulp cavity exposed. Oral infection or excessive periodontal disease may be grounds for disqualifying a canine. Broken teeth or excessively worn teeth are disqualifying.
  - **Heart and Lungs.** Heart sounds, rate, and rhythm must be normal (e.g., no murmurs, arrhythmia, etc.). In general, the cardiovascular and respiratory system must be normal at rest and upon exercise. Current heartworm disease is disqualifying.
  - **Limbs and Joints.** Any condition of the bones, joints, or muscles that might hamper or restrict the normal performance of Service or Emotional Support Dog duties is grounds for disqualification. Examples include:
    - Hip dysplasia and elbow dysplasia. A malformation of the hip and elbow joints, respectively, which usually results in degenerative joint disease, arthritis, and chronic lameness. Radiographic evidence of hip dysplasia, elbow dysplasia, or degenerative joint disease, as determined by licensed veterinarian(s) will disqualify a canine.
    - Fractures, which are unhealed, are disqualifying. Healed fractures resulting in significant bone or joint conformation changes or lameness are disqualifying.
    - Ligament damage, osteoarthritis, etc., of the limb joints is generally disqualifying.
    - Transitional vertebrae of the caudal lumbar spine, lumbosacral junction, or sacrum may be disqualifying. Asymmetric pelvic attachment is also disqualifying.
  - **Nervous System and Basic Senses.** Any defect in the nervous system, to include the basic senses of vision, hearing, and sense of smell, is disqualifying. Examples include, but are not limited to, opacities of the cornea, eyelid deformities, cataracts, retinal degeneration, chronic otitis, acute or chronic rhinitis/sinusitis, and spinal disease.
  - **Heartworms.** All canines submitted for purchase must be free of heartworm infection (*Dirofilaria immitis*). A negative heartworm concentration test (filtration or Knott's) is not sufficient evidence to declare the animal heartworm-free.
  - **Intestinal Parasitism.** Infection with intestinal parasites (roundworms, hookworms, tapeworms, etc.) may not be disqualifying, depending on the level of infection and the overall condition of the animal. Presence of intestinal parasites is, however, an indication of poor care and will raise concern about the canine's general health.

- **External Parasitism.** Presence of fleas, ticks, lice or mange mites may not be disqualifying, depending on the amount of infestation, the degree of associated skin disease, and the overall condition of the canine. Presence of external parasites is, however, an indication of poor care and will raise concern about the canine's general health.
- **Immunization.** All canines presented must have been vaccinated within the previous 12 months for rabies, canine distemper, canine adenovirus (TYPE 2), coronavirus, parainfluenza, parvovirus, and leptospirosis. A vaccination certificate with individual canine identification (name, procurement number, or microchip #) must be provided on all canines. This facilitates health certificate preparation if the canine is to be returned to the vendor.
- **Reproductive and Urinary System**. Any congenital or conformational abnormality is disqualifying if the defect requires long-term medical treatment or results in a shortened working life of the canine (e.g., cryptorchidism is not disqualifying unless the retained testicle results in medical complications not treatable by simple orchidectomy. A juvenile vulva resulting in urine scalding is disqualifying.).
- **Socialization.** All canines presented must be socialized to medical examinations as well as people (all ages, sizes, ethnicities, etc.) and to other animals. Poorly socialized canines will be rejected. Rejected canines can be returned for consideration once they are properly socialized.
- **Common Medically-Disqualifying Conditions.** The following list is provided as a helpful guide and example to all persons presenting canines for purchase and is not intended to be a complete list or legally binding.
    - Hematological abnormalities consistent with severe parasitism, infection, or metabolic disease.
    - Poor body condition, either emaciation or obesity.
    - Significant periodontal disease.
    - Significant, non-resolving or intractable otitis externa or dermatitis.
    - Radiographic signs of hip or elbow dysplasia or radiographic evidence of degenerative joint disease.
    - Previous musculoskeletal injury which has or may lead to degenerative joint disease or conformational abnormality.
    - Transitional vertebrae of the caudal lumbar spine, lumbosacral junction, or sacrum may be disqualifying, as is the presence of any degenerative change in the lumbar spine (such as arthritis). Asymmetric pelvic attachment may also be disqualifying.

- **Proofing of Dogs**

Proofing will occur at the vendor location. It will be conducted by the National dog trainer and a veterinarian.

- The vendor will provide a list of medically cleared dogs to the contract COR and VA National Dog Trainer (identified by name and microchip #) that respond to commands (basic obedience and skilled tasks) given by the handler 90% of the time on the first ask in all public and home environments.

- A veterinarian will review the dogs and medically clear them for use in the study.
- After the dogs are medically cleared by a VA Veterinarian, the vendor will provide a list of these dogs to be evaluated by the VA trainer (proofed).
    - The vendor will provide to the VA National Dog Trainer all training records of the dogs to be proofed.
    - The contractor shall have all necessary materials and aids necessary to complete the specific tasks, CGC, Community Canine (CGCA) and PAT readily available.
    - All dogs medically cleared at that time will be proofed in one day, if time allows. It is estimated that it will take 1-3 hours to proof each dog, depending on the number of dogs and type of dogs eligible for proofing.
- Once dogs are accepted officially, the VA will notify the vendor providing health insurance which will include dogs name, microchip information, and other relevant characteristics of the dog
    - Once dog is paired, participant's name will be sent to vendor.
    - Participants will be provided an ID card from the dog wellness/insurance contractor to take to their veterinarian so that the veterinarian may bill the insurance contractor directly. If the veterinarian's office does not want to bill the contractor, the veterinarian can call the 1-800 number provided on the card and get paid via a credit card that day by the contractor. There should be no out-of-pocket cost for participants unless they request services not covered by the insurance. The list of covered services will be provided to the participants by the insurance vendor. On rare occasion VA may need to reimburse a participant for a legitimate expense not covered by the insurance.

X. FOLLOW-UP ASSESSMENTS

- **Pairing Dates:**

The official pairing date for participants paired with Service Dogs is the date they depart from the vendor's facility after training. This should be the same date identified on their training completion certificate provided by the designated vendor.

The official pairing date for participants placed with an Emotional Support Dog is the last day of training with the VA dog trainer (Local or National Dog Trainer).

Post Pairing Monitoring Visits

- **Week 1 post-pairing visit:**

Approximately one week after receipt of the dog, the dog trainer will conduct a home visit at which the Post-Pairing Evaluation, the Veteran and Service/Emotional Support Dog Visit Report and the Dog Related Questions will be completed. If there is a child living in the home who is aged between 5 and 10 years, the dog trainer will evaluate the behavior of the dog when the child is present preferably through direct observation. If this is not possible (child at school, or elsewhere) the participant will be thoroughly interviewed instead. The participant will be provided with a Post-Pairing Survey and postage-paid envelope to compete and mail to a member of the study team. The Veterinary Checklist packet (includes form 23) will be provided to the participant. If the packet was given during the Home Clearing Visit a reminder will be provided for the return of the form or if available will be collected at the time of the visit. Provide the participant with a visit timeline calendar. Participants will receive $10 for their time and effort.
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- **Week 2 post-pairing contact: Home visit or telephone call**

Approximately two weeks after receipt of the dog, the participant will be contacted for a second time by the dog trainer. If at the week 1 post-pairing visit the dog trainer was satisfied that the Veteran and dog had bonded and that there were no concerns, this contact can be completed by telephone. If the dog trainer had concerns, this visit will take place in the participant's home. Further, if there is a child living in the home who is aged between 5 and 10 years, a home visit will be conducted regardless of the week 1 visit findings. The dog trainer will evaluate the behavior of the dog when the child is present preferably through direct observation. If this is not possible (child at school, or elsewhere) the participant will be thoroughly interviewed instead. Regardless of form of contact, the Dog Related Questions will be completed. If there is a home visit, the Veteran and Service/Emotional Support Dog Visit Report will also be completed. Participants will receive $10 for their time and effort.

- **Month 1 visit:**

Month 1 visit will take place 30 days (±7 days) after receipt of dog. The visit will take place at the participant's home. The Veteran and Service/Emotional Support Dog Visit Report and the Dog Related Questions will be completed in interview format. If there is a child living in the home who is aged between 5 and 10 years, the dog trainer will evaluate the behavior of the dog when the child is present preferably through direct observation. If this is not possible (child at school, or elsewhere) the participant will be thoroughly interviewed instead. Secondary contact information will be verified and the participant will be reminded about the Veterinary Checklist. Participants will receive $10 for their time and effort.

- **Month 2 contact:**

Month 2 contact will take place 60 days (± 14 days) after receipt of dog. If at the month 1 post-pairing visit the dog trainer was satisfied that the Veteran and dog had bonded and that there were no concerns, this contact will be by telephone. If the dog trainer had concerns, this visit will take place in the participant's home. Further, if there is a child living in the home who is aged between 5 and 10 years, a home visit will be conducted regardless of the month 1 visit findings. The dog trainer will evaluate the behavior of the dog when the child is present preferably through direct observation. If this is not possible (child at school, or elsewhere) the participant will be thoroughly interviewed instead. Regardless of form of contact, the Dog Related Questions will be completed. If there is a home visit, the Veteran and Service/Emotional Support Dog Visit Report will also be completed. The participant will be reminded about the Veterinary Checklist if not already received. Participants will receive $10 for their time and effort.

Post Pairing Outcome Visits

- **Months 3, 9 and 15 clinic visits and associated telephone calls:**

At months 3, 9 and 15 (±14 days) after receipt of dog, the participant will attend a visit at the local VA study site. The C-SSRS, HERC non-VA care WPAI, and Medication Log will be completed in interview format. The WHO-DAS 2.0, PCL-5, PSQI, VR-12, PHQ-9, and DAR will be completed in pen and paper format. Participants will receive $25 for each visit for their time and effort. Secondary contact information will be verified. At Months 03 and 09 the participant will be provided with the Veterinary Checklist packet (includes form 23). Each visit will last approximately 2 hours, with the exception of the month 15 visit which will be longer due to the additional steps listed below.

Month 15 Visit:

- CAPS will be administered.
- Veterinary Checklist packet (includes form 23) will be provided and should be completed around 17 Months.
- Discussions related to keeping or returning the study dog at the end of the study will be initiated.

Within approximately 2-weeks of each clinic visit, the dog trainer will telephone the participant to complete the Dog Related Questions form.

Preparation for the transfer of dog ownership at the end of the study: Participants will have the option of returning or keeping their dog at the end of the study. In order to prepare participants for making a choice, study staff will initiate ongoing conversation with the participant regarding end-of-study dog placement starting at the Month 15 Visit. Information gathered during these interactions will assist in preparing for the transfer of ownership to the participant or for return of the study dog, which will include shipment of the dog back to the assigned vendor.

- **Months 6 and 12 home visits:**

At months 6 and 12 (±14 days) after receipt of dog, the participant will have a home visit from members of the study team. The following measures will be completed: The C-SSRS, HERC non-VA care, WPAI, WHO-DAS 2.0, PCL-5, PSQI, VR-12, PHQ-9 DAR, Medication Log, Veteran and Service/Emotional Support Dog Visit Report, and the Dog Related Questions. Secondary contact information will be verified. At Months 06 and 12 the Veterinary Checklist is due. Participants will receive $10.00 for their time and effort.

- **Month 17:**

Around 17 Months study staff will contact the participant regarding completion of the Veterinary Checklist provided to the participant at the 15 month visit. The option of keeping the dog at the completion of the study is contingent upon the receipt of this final veterinarian exam.

- **Month 18 home visit:**

At months 18 (± 28 days) after receipt of dog, the participant will have a home visit from members of the study team. The following assessments will be completed: C-SSRS, HERC non-VA care, WPAI, WHO-DAS 2.0, PCL-5, PSQI, VR-12, PHQ-9, DAR, Medication log, Veteran and Service/Emotional Support Dog Visit Report, Dog Related Questions, Dog Trainer Evaluation form, and Exit Interview (Note: do not re-administer the Exit Interview to participants who have already completed the interview following the permanent removal of their study dog). Participants will receive $10.00 for their time and effort.

1. <u>Transfer of Dog Ownership</u>

At the successful conclusion of the 18 month visit, participants may choose to keep or return their study dog.

If the participant chooses to keep his/her dog and the final Veterinary Checklist has NOT been completed and returned the participant will be reminded that the final checklist is required prior to the official transfer of dog ownership. The participant will be given approximately 2 weeks to complete and return this checklist. If the exam has already been completed but not returned, study staff, including the CVMO in some cases, will work with the participant to retrieve the

completed checklist. Once the checklist has been returned study staff will need to schedule a follow up visit in order to complete the transfer process below.

If the participant chooses to keep his/her dog and the final Veterinary Checklist has been returned to study staff he/she will be:

- Asked to sign the Transfer of Dog Ownership Verification form and provided with a signed copy.
- Given the Dog Ownership Chip Registry Instructions form.
- Given the VA Certificate of Study Completion (dog retention version).
- Given the Dog Care Sheet.
- Offered a vendor information packet if available.
- Reminded that neither the study nor the VA will provide further dog care support and that care is now his/her total responsibility
- Provided with the vendor's contact information and informed that it is now permissible to contact the vendor directly to receive any follow up services provided by the vendor. Such services may include training support, supplies, support groups, or other services; and
- Informed that it may be necessary to return the dog's service vest to the vendor if vendor conditions for retaining the vest are not met (only applies to participants who have a service dog).

If the participant chooses not to keep his/her dog, it will be removed by a study dog trainer in order to be transported to the original vendor. Arrangements to have the dog removed will be made between study staff and the participant prior to or during the final visit. The participant will sign the Transfer of Dog Ownership Verification form and provided with a signed copy. The participant will be asked to sign the Transfer of Dog Ownership Verification Form and provided with a VA Certificate of Study Completion (dog return version).

Participants who complete the 18 month visit prior to the approval of pertinent forms (i.e., Transfer of Dog Ownership Verification form, Dog Ownership Chip Registry Instructions form and VA Certificate of Study Completion [dog retention version], etc.) can be provided with a copy of these forms upon request.

- **Veterinarian checks**

Participants must take their dogs to a Veterinarian, as follows:

- Week 1 (± 14 days) after receiving a dog, at which a dog parasite check will be conducted. Veterinary Checklist packet (includes form 23) can be provided at the Home Clearing Visit or Week 1 visit.
- Month 6 (± 28 days) after receiving a dog, at which a dog parasite check will be conducted. Veterinary Checklist packet (includes form 23) will be provided at the Month 03 visit.

- Month 12 (± 28 days) after receiving a dog, at which an annual comprehensive wellness examination will be conducted. This will require assessment of the dog's weight, major body systems and teeth, the dog will be checked for internal and external parasites, the dog will have a tooth cleaning and will receive vaccinations for canine communicable diseases. Veterinary Checklist packet (includes form 23) will be provided at the Month 09 visit.
- Month 17 (± 28 days) after receiving a dog, at which a dog parasite check will be conducted. Veterinary Checklist packet (includes form 23) will be provided at the Month 15 visit and required prior to completion of the Month 18 visit.
    - Completion of this parasite check is a prerequisite for keeping the dog at the end of the study.

The participant will be provided with a Veterinary Checklist packet that includes a cover letter, contact sheet, the Veterinary Checklist, and a postage paid envelope during the designed visits above. The participant will be instructed to schedule each veterinary check and will be responsible for giving the checklist, contact sheet, and postage paid envelope to the selected Veterinarian. Options for returning the Veterinary Checklist include, a) Veterinarian can give the completed form to the participant in order for the participant to return it directly to the study team; b) Veterinarian can fax the completed form to the study team; and, c) Veterinarian can mail the form to the study team using the self addressed stamped envelope. A VA veterinarian will review each Veterinary Checklist and follow up as needed if dog health problems are noted.

Checklists not returned by the designated due date will require follow up with the participant and veterinarian (as needed) to verify that the exam has been completed and retrieve the missing checklist. If follow up attempts to retrieve missing forms are unsuccessful site staff will contact the CVMO in a timely manner.

- **Public observation of study dogs**

Public observations will be completed for all paired participants (SD and EMOT) at 2 separate times in the study. Sites will use their discretion to conduct the observations either at a required visit or by meeting the participant during a scheduled public outing that can be on a different date than a required post pairing visit. Public observations will occur at least 6 months apart.

- ***Ad Hoc* study Visits**

The investigator, local dog trainer, national dog trainer or local study team member may schedule an *ad hoc* visit for any study participant at any time that he/she feels such a visit is advisable to evaluate either the participant, dog, or residence. Any such visits will be documented per approved procedures as detailed in the associate study operations manual. Examples of reasons for *ad hoc* visits include supporting the training needs, changes in residence, or when a dog, or other pet is introduced into the home that may interfere with the study dog bonding relationship with the participant. The Suitability to Have a Dog Checklist, Veteran and Service Dog Visit Report, and Dog Related Questions can be administered at the discretion of the dog trainer.

Visit completion schedules: When required, visits can be initiated and completed on different dates. If this occurs the completion visit should take place within 2-weeks of the date it was initiated and must be completed within the designated early and late date window of time (i.e., ± 14 days). This does not apply to Post Pairing Weeks 1 & 2 visits as these have limited amount of time between visits. If holiday schedules or an unusual circumstance such as veteran illness prevents the visit within the designated time frame listed above, they should be completed as soon as possible.

- **Participant Study Completion**

- Participants are considered to have completed the study if he or she has successfully completed the 18 month visit and all study related activities.
- SAE monitoring: a final chart review for monitoring SAEs should be completed approximately 30 days after the completion of the 18 month visit. If an SAE is identified a final SAE form will be submitted to PPCSPCC and CIRB as required.
- All CRFs should be completed and submitted to PPCSPCC.

XI. DOG REMOVALS

- **Removal and replacement of the study dog.**

Pairings between Service Dogs/Emotional Support Dogs and study participants may fail because a bond is not established between them. Vendors are experts at matching human and animal personalities to limit the possibility that this will happen. Based on information from vendors, a bonding failure will usually occur within the first two weeks after returning home with a dog. In the case of failed bonding, a VA Dog Trainer will intervene and inform a Contracting Officer's Representative (COR), who will inform the vendor. Dogs may also develop disqualifying health or behavioral problems at any time after pairing that disrupts the pairing process. In other cases the bonding relationship may be interrupted due to short term absences by the participant (i.e., hospitalization, transitional housing, etc.) or due to the death of the original study dog in which a replacement dog may be sought.

If issues are identified that require the removal of a study dog, site staff will inform their local LSI. The LSI will work with the study Chair, the National Dog Trainer, and other leadership as needed to determine whether the dog should be temporarily or permanently removed. If the decision to temporarily remove the dog is agreed upon, the research team will assess the procedure for determining when and what constitutes resolution of the extenuating circumstances and when it would be appropriate to return the dog or offer a replacement dog.

Study leadership will maintain ongoing communication during all temporary removals to monitor the situation. Should the circumstances surrounding the temporary removal of the dog not get resolved in a reasonable amount of time - as determined by study leadership - the study dog may be permanently removed. If the dog is permanently removed with no plan for a replacement dog, the participant may be asked to continue in the study to complete follow up visits (Intent to Treat). If the participant does not want to remain in the study they will be withdrawn.

Study staff will work with the participant to transport the dog to an approved boarding location and, if necessary, ship the dog back to the assigned vendor for boarding and training maintenance. During temporary removals, visits will be conducted in the clinic, participants will receive $25 per visit, dog measures and veterinarian visits will not be required, *ad hoc* visits will completed as needed by the dog trainer, and the 75$ stipend payment will be prorated.

1. <u>Temporary removals resulting in the return of the same study dog</u>

1. The re-introduction of the original study dog will include a number of procedures to support the transition of the dog back into the paired relationship. Once the dog is reintroduced, the participant will continue on the pre-existing visit and veterinarian exam schedule. If the original post pairing monitoring visits (weeks 1 & 2 visits, months 1 & 2 visits) were discontinued during the temporary removal they can be reinstated. If needed these visits can be reset starting with week 1. If post-pairing monitoring visits overlap existing outcome visits (Months 3-18), these visits can be merged based on the guidelines below. Note that one

exception to this merged schedule is related to the 15 Month visit in which the CAPS should be administered in the clinic.

Monitoring Visit	Outcome Visit	Merged visit type
Home	Home	Home. Payment=$10.
Home	Clinic	Home. Payment=$10.
Phone	Home	Home. Payment=$10.
Phone	Clinic	Clinic. Payment=$25.

The National and Local Dog Trainer will work together to coordinate the transition and set up a re-training plan as needed. The Suitability to Have a Dog Checklist, Veteran and Service Dog Visit Report, and Dog Related Questions can be administered at the discretion of the dog trainer during the reintroduction period.

2. Temporary removals resulting in the pairing of a replacement study dog

If reasonable interventions by VA Dog Trainers in consultation with vendor staff members cannot correct the situation, the dog will be returned to the vendor and a replacement may be sought. The decision to return a dog to the vendor will be made by the study national dog trainer, COR and/or CVMO, in consultation with the study chair, and other study leadership and team members. These situations will be dealt with on a case–by-case basis. Data will be collected for all replacement dog post pairing visits, but in most cases will not be used for the main analysis because data from these participants may skew findings.

Replacement dog procedures include a number of components to help prepare for the new pairing and support the participant and dog bonding process. These procedures include:

- The participant will be required to attend another training session at the vendor location (for a Service Dog) or schedule another placement session by a VA Dog Trainer (for an Emotional Support Dog).
- Post-pairing Outcome visits (months 3, 6, 9, 12, 15, 18) will continue on the pre-existing visit schedule. This overall study timeline will not reset.
- The participant will complete a new schedule of post-pairing monitoring visits (weeks 1 & 2, months 1 & 2). These visits will overlap, not extend, the overall study timeline.
- Guidelines for overlapping visits: If post-pairing monitoring visits overlap existing outcome visits (Months 3-18), these visits can be merged based on the guidelines below. Note that one exception to this merged schedule is related to the 15 Month visit in which the CAPS should be administered in the clinic.

Monitoring Visit	Outcome Visit	Merged visit type
Home	Home	Home. Payment=$10.
Home	Clinic	Home. Payment=$10.
Phone	Home	Home. Payment=$10.
Phone	Clinic	Clinic. Payment=$25.

- Veterinary Checklist visits will reset starting with week 1.
- Staff will work with the local dog trainer and National Dog Trainer (as needed) to coordinate the pairing or placement process. For additional information see pairing and placement procedures within the Home Clearing Visit section.

- **Permanent removal of a study dog (Cessation of Intervention)**

In some cases, the study dog will need to be permanently removed from the participant with no option of a replacement dog. Reasons for permanent removal include the inability to resolve the issues surrounding a temporary removal in a timely manner, the participant refuses a replacement dog, the participant withdraws early from the study due to personal reasons, or the participant is terminated early from the study by research staff due to study related ineligibility.

Participants may be eligible to continue in the study once their study dog has been permanently removed. The local LSI and other study leadership, including the study Chair and CMVO, will be consulted to determine eligibility for continued follow up. Participants who remain in the study will be encouraged to complete all follow-up assessments because follow-up data are important to the validity of the study results and for future patient care.

Participants who agree to follow up visits after the permanent removal of their study dog will complete all visits in the clinic, receive an incentive payment of $25 for each visit, will not be required to complete dog related components (dog surveys, public observations, and veterinary exams), and will no longer receive the $75 dog care stipend. If at any time the participant requests to be withdrawn from the study or completes the final 18 month visit, the participant will be withdrawn from the study.

Participants who agree to follow-up visits in the absence of a study dog and agree to complete the Exit Interview should be administered the interview based on the following guidelines:

1. At the permanent dog removal visit (i.e., removal is considered permanent at the time of removal), or
2. By phone within approximately 2 weeks of the permanent dog removal visit or after the decision to permanently remove the dog has been made (i.e., temporary removal resulting in a permanent removal), or
3. During the next scheduled study visit following the permanent dog removal visit or after the decision to permanently remove the dog has been made (i.e., temporary removal resulting in a permanent removal), or
4. Participants in follow-up without a study dog at the time of this update: by phone at the participant's earliest convenience or during the next scheduled study visit instead of waiting until the final study visit.

Participants who refuse follow-up visits or are not otherwise eligible (as determined by leadership) will be asked to complete the Exit Interview during the permanent dog removal visit

or by phone within approximately 2 weeks of the permanent dog removal visit, or after the decision to permanently remove the dog has been made.

XII. STUDY WITHDRAWAL & TERMINATION

Circumstances surrounding the decision to withdraw a participant can vary from case to case. Early withdrawals that result from exclusionary criteria identified during the screening and baseline phases tend to be more straightforward and can be processed at the site level. Withdrawals that result from early termination of paired participants tend to involve more complex and varied circumstances that requires input from multiple members of the leadership team. Medical and scientific judgment should be exercised in deciding whether to terminate a participant from the study, especially once participants have been paired with a study dog. A case-by-case evaluation will be the standard approach to handling decisions to terminate participants from the study.

There are a number of reasons that a participant may be terminated/withdrawn from the study. These include:

a. Safety concerns: the research team find out it is not safe for the participant to remain in the study. For example, the participant's health worsens.
b. Missed study appointments: Participants do not keep scheduled study visits.
c. Lost to follow-up: Participants do not respond to research staff attempts to contact them by phone or mail.
d. Participant's home is inaccessible to the research team: a participant moves to a home that is not accessible to the research team, their existing home becomes inaccessible to the research team, or they move out of the study area.
e. Deployment.
f. Personal choice: participant decides for any reason that they no longer want to take part in the study, or they decide to return your dog or withdraw their study consent.
g. Dog mistreatment: There is evidence that the dog has been physically or psychologically abused or mistreated. Signs of mistreatment include evidence that the dog:
    - has been hit or kicked (cowering, shaking, head shyness in the presence of the participant or a family member)
    - has been tied to an object outside
    - is fearful e.g. the dog stays away from the participant or a family member
    - has lost weight but does not have a medical condition that explains why
    - has skin sores that cannot be explained by a medical condition
    - has gross parasite infection (fleas, ticks)
    - has any other conditions that suggest it has been neglected or abused
h. Dog health issues/care of dog diminishes: There is evidence that the participant cannot adequately care for their dog.
i. Lack of ongoing treatment: participant stops receiving ongoing mental health treatment (i.e., PTSD treatment).
j. Lack of veterinarian care: participant does not schedule and honor the veterinarian visits that are required by the study or they do not take their dog to a veterinarian for treatment if it is sick or injured.

k. Participant death.
l. Participant no longer meets study criteria (i.e., incarceration, not accepting the outcome of the dog randomization, family refuses study dog, substance abuse, not able to travel to the vendor (SD group), participant does not follow through with study related requirements, etc.).
m.
n. Engaging in a relationship with vendor: participant donates to, works for, or volunteers with a vendor providing dogs while they are still in the study.
o. No secondary dog caregiver during intermittent absences: participant does not have someone who is able to care for their dog during short term absences.
p. Dual enrollment in an unapproved study.
q. Obtains outside training for their study dog: While in the study, participant-initiated training of study dogs by outside sources is prohibited. All training needs will be met by the designated vendor and VA dog trainers (local or national).
r. Not reporting aggressive behaviors or displays of aggression by the dog.

1. Pre-pairing Terminations

If study team members have concerns about a participant's eligibility prior to pairing, they should consult with the LSI. If the LSI has questions about the participant's status they can consult with the study Chair to help make a determination. Additional leadership will be consulted by the LSI and Chair as needed.

2. Post-Pairing Terminations

The study team will consult with the LSI to review the circumstances surrounding potential early termination of paired participants. If the LSI agrees that the participant should be terminated early they will consult with the Chair to review the case and if applicable develop a summary report to share with the CVMO and coordinating center. There may be cases that require additional guidance from the Executive Committee and/or the Human Rights Committee. Final approval for early termination will be made by study leadership, including the study Chair .

Participants that are paired with a study dog and withdrawn early from the study will be required to return their dog to the VA.

3. Lost to follow-up:

Participants who do not respond to weekly phone calls over a 4 week period will be mailed a pre-withdrawal letter to their last know address. If within 2 to 3 weeks of mailing the letter the participant does not respond they will be considered lost to follow-up. Important factors related to this decision and the decision to terminate the participant includes (i) whether or not the participant has been paired with a study dog, (ii) mental, physical and emotional health of the participant, and (iii) prior study-related issues.

The decision to terminate participants considered lost to follow-up who have not been paired will be based on consultation between the LSI and study Chair. Lost to follow-up participants who have been paired with a study dog but have had their dogs temporarily removed will require consultation between the LSI, Chair, and other leadership as outlined in the Post-Pairing Terminations section. Paired participants lost to follow-up who are in possession of their study dog should not be terminated from the study until the study dog has been returned to the VA and approval has been obtained.. If the study ends prior to the resolution of these cases, study leadership, including the Chair and CVMO, will work together to develop a plan of action for retrieving the study dog and terminating the participant. If alerts in CPRS or other VA systems are available these will be implemented to assist with contacting the participant and retrieving the study dog.

4. Study Withdrawal/Termination Procedures.

- Paired participants who have been terminated early from the study should be provided with a withdrawal letter at the participant's last visit. If the participant refuses the letter or staff is not able to provide the participant with the letter at the time of the final visit these reasons should be documented and the letter filed in the participant study record.
- If applicable, the Exit Interview should be administered to the participant prior to officially withdrawing the participant early from the study. Participants will receive $10 for their voluntary completion of this interview.
- A final chart review for monitoring of SAEs should be completed approximately 30 days after the decision to withdraw/terminate the participant from the study has been made. If an SAE is identified the final SAE form will be submitted to PPCSPCC and CIRB as required.
- CPRS record must be updated.
- If a HIPAA revocation form is signed, a copy should be submitted to CSP and the original filed locally with the consent, an addendum note in CPRS regarding the revocation process should be submitted, and the study termination form (form 24) updated to reflect this process.
- All CRFs must be completed and submitted to PPCSPCC.

XIII. MONITORING AND REPORTING ADVERSE EVENTS

- **Importance of Adverse Event Reporting**

Timely and complete reporting of safety information assists study management in identifying any untoward medical occurrence, thereby allowing: a) protection of safety of study participants, b) a greater understanding of the overall safety profile of the study treatments and therapeutic modalities, c) improvements in study design or procedures, and d) compliance with regulatory requirements.

- **Role of the Site Investigator in Adverse Event Monitoring**

The site investigator will be responsible for the adverse event reporting requirements as outlined below:

- Reviewing the accuracy and completeness of all adverse events (AE) reported.
- Compliance with VA CIRB policies for reporting AEs and/or serious adverse events (SAEs) (see VHA Handbook 1058.01 and CIRB website for details)
- Closely monitoring research participants at each study visit for any new SAEs.

- **Collection of Safety Information**

1. Adverse Events

The International Conference on Harmonization (ICH) defines adverse events (AEs) for Clinical Safety Data Management (ICH-E2A) as "any untoward medical occurrence in a clinical investigation subject that is subjected to one of the study treatments that do not necessarily have to have a causal relationship with the treatments. An AE, therefore, can be any unfavorable or unintended sign (including an abnormal laboratory finding), symptom, or disease temporally associated with the study interventions."

For the purposes of this study, the study interventions are: a) being paired with a Service Dog and b) being paired with an Emotional Support Dog.

In this study, information on AEs related to or possibly related to study intervention for the participant, participant family members, or the study dog, and on all serious adverse events (SAEs) will be collected and recorded. See the section below on "Relatedness". A separate section below describes the collection of safety information for SAEs.

The reporting period for AEs begins when the participant signs the informed consent form and continues until 30 days after: the participant's completion, early termination of study participation, or the end of the study (whichever comes earlier). Each related/possibly related AE will be reported to the Sponsor, the VA Cooperative Studies Program, including any increase in frequency or severity of a condition that was present prior to the start of the study. During the study, adverse events can be spontaneously reported or elicited during open-ended questioning, examination, or evaluation of the participant at study visits.

Related or possibly related adverse events not meeting the criteria for an SAE (see below) must be recorded on the Adverse Event Form. (Those that meet SAE criteria are documented on the SAE Form.) One form should be completed for each AE reported. Adverse events should be reported in sequential order as they occur and submitted with the other case report forms for the participant's visit.

Relatedness involves an assessment of the degree of causality (attributability) between the study intervention and the event. The assessment provided by the site investigator is part of the information used by the sponsor to determine if the adverse event presents a participant safety concern. Pursuant to CSP Global SOP 3.6, an AE is deemed to be associated with the use of a study intervention if "[t]here is a reasonable possibility that the experience may have been caused by the intervention or by participation in the trial." Thus, all adverse events with a reasonable causal relationship to the study intervention should be considered "related". A definite relationship does not need to be established. The following levels of relatedness will be used in this trial:

- Not attributed to a study intervention (study dog)
- Possibly attributed to a study intervention (study dog)
- Attributed to a study intervention (study dog)

Only possibly related or related events must be reported on a study form.

2. Adverse Event Definitions for Animals

The USDA Animal Welfare Act Regulations (AWAR) and Public Health Service Policy on the Care and Use of Animals in Research ("PHS Policy") govern animal research involving dogs. All VA-funded animal research must also comply with the rules and policies utilized by the accrediting body for animal research, which is the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC). VA policy incorporating these federal and accrediting standards is found in ORD Handbook 1200.07, Use of Animals in Research (11/23/2011), and ORO Handbook 1058.01, Research Compliance Reporting Requirements (11/15/2011; primarily paragraph 8).

Cumulative reporting requirements for IACUCs are found in VHA Handbook 1200.07, item 8.i, which lists the following categories of reportable deficiencies applicable to this study. These include (a) serious or continuing non-compliance with PHS Policy (including any serious deviation or continuing non-compliance with the provisions of the Guide, as required by the PHS Policy) or USDA AWAR, and (b) suspensions of protocols previously approved or suspensions of procedures or studies never given approval.

As federal regulations and VA policy apply to this study, each site IACUC will be required to monitor the dogs enrolled at that site. Site IACUC's will ensure that (a) the dogs are used according to the protocol approved by the IACUC, (b) that the dogs receive appropriate veterinary care as needed, (c) not more than the approved number of dogs are used, and (d) that the dogs do not pose a health (e.g., zoonotic parasites) or safety (e.g., biting) risk to people or

other animals that are around them. If the IACUC finds that any of these expectations have not been met, then they must investigate the matter, determine if corrective actions are needed, report the non-compliance if the matter qualifies, and monitor the corrective actions to make sure the issue is resolved and that proper measures are in place to prevent recurrence of the problem.

The term "adverse event" is not defined for animal research issues, but the following shall be considered an AE for the purposes of this study, and deemed reportable:

1. Bites of any level according to the Dunbar dog bite scale (http://www.apdt.com/veterinary/assets/pdf/Ian Dunbar Dog Bite Scale.pdf). The scale ranges from obnoxious or aggressive behavior but no skin contact by the dog's teeth (Level 1) to slight bleeding caused by a tooth laceration without a puncture (Level 2) to increasingly deep tooth punctures of the skin (Levels 3 and 4) to multiple Level 3 or 4 bites (Level 5) to death (Level 6).
2. Any herding or similar aggressive behavior toward children. In experience, such dominance behavior is a precursor to biting incidents.
3. Diagnosis of any zoonotic parasitic or other disease in the participant, participant's family, or in people with regular contact with the dog. This would include intestinal parasites such as hookworms, roundworms, and giardia, as well as bacterial diseases such as salmonellosis or leptospirosis. It would also include fungal infection of the skin such as ringworm.
4. Unprovoked aggression against other dogs or cats.
5. Aggression of any kind toward people who are exposed to the dog under any environment. This does not imply that there are no circumstances in which aggression might be acceptable (e.g., physical attack by a person or dog on a participant or another person would be warranted), but the matter should be reported and investigated.
6. Any indication that a dog is being mistreated in the home environment by any member of the household.
7. Repeated refusal by the participant to go to routine veterinary visits, or decisions not to seek veterinary treatment for dog injuries or significant illnesses.
8. Diagnosis of chronic illness, hip or elbow dysplasia, or a genetic condition refractory to treatment that will likely reduce the working life of a Service Dog or the ability of an Emotional Support Dog to be a potentially positive factor on the participant.

- **Adverse Event Follow-Up**

For each reported AE, site investigators follow up with participants until the event resolves and ensure that appropriate care is provided, but there is no case report form to fill for AE follow-up.

Adverse events must be reported as Serious Adverse Events (SAE) if they meet the SAE reporting requirements described below.

- **Serious Adverse Events**

1. Definition of Serious Adverse Event (SAE)

Serious adverse events are defined by the ICH for Clinical Safety Data Management and CSP Global SOP 3.6.2, as any untoward medical occurrence that:

- Results in death,
- Is life threatening,
- Requires inpatient hospitalization or prolongation of existing hospitalization,
- Results in persistent or significant disability or incapacity,
- Is a congenital anomaly/birth defect, or
- Any other condition that, based upon medical judgment, may jeopardize the subject and require medical, surgical, behavioral, social or other intervention to prevent such an outcome.

Any adverse event that meets the definition of "Serious" will be reported on an SAE Form. All SAEs will be classified as either "related," "possibly related," or "not related" to study intervention. A definite causal relationship does not need to be established.

2. Serious Adverse Event Monitoring

Participants will be monitored for SAEs at each study visit and during any contact with the participant. Each serious adverse event is reported on an SAE Form. Active monitoring for SAEs begins at the time the Informed Consent Form is signed and continues until the earlier of the 30 days after the participant's completion, early termination of study participation, or the end of the study. The final SAE monitoring review can be completed by a chart review. The date study participation ends is entered on the Study Completion/Termination Form. Safety data from the pre-randomization and post-pairing periods will be analyzed separately.

3. Expedited Reporting of Serious Adverse Events

All SAEs require prompt reporting to the CSP Coordinating Center and CSP Clinical Research Pharmacy Coordinating Center (CSPCRPCC) within 72 hours of the site investigator becoming aware of the event. The Adverse Event (AE) Specialist at the CSPCRPCC is responsible for evaluating all SAEs for participant safety concerns and regulatory reporting. The AE Specialist will consult with the Chairman's office during the review process, as necessary.

* Because of the high profile of this study, certain SAEs must be reported to the sponsor within 12 hours of the site investigator being made aware of the event. **These events include any dog deaths, dog bites, or participant deaths.**

CSPCPRCC maintains a database of serious events for evaluation, by using the Medical Dictionary for Regulatory Activities (MedDRA) for coding and trending. Periodic summaries will be provided to the Data Monitoring Committee, the Study Chairman's office and Executive Committee (as necessary). Events that are determined to be serious, unexpected, and related to the study treatments will be reported to the site investigators, Chair's office, and to the VA Cooperative Studies Program Central Office. CIRB policy will likely mirror these reporting requirements so it is important to review and understand these requirements as well. The CIRB website provides a number of resources related to current CIRB policy and SOPs.

SAE Forms will be sent to the Perry Point CSPCC as directed. The CSPCRPCC will also have access to the information on the SAE Forms.

4. SAE Follow-up Reporting

If additional information is require the CSPCC or CSPCRPCC will fax or email a request to the site personnel reporting the SAE. The site should handle requests for SAE follow-up information in the same prompt manner that original SAE reports are handled. Serious adverse events should be followed to resolution, stabilization, or the end of the study, whichever occurs first. If an SAE is still ongoing by the time the SAE Form is submitted to the Perry Point CSPCC, complete an SAE Follow-up Form every 30 days until the SAE is resolved or stabilized. SAE Follow-up Forms will be sent to the Perry Point CSPCC.

- **Reporting Adverse Events and Serious Adverse Events to the VA Central IRB**

It is the responsibility of the site investigator / coordinator at each participating site to know and comply with the AE and SAE reporting requirements of the VA CIRB.

- **Reporting Adverse Events and Serious Adverse Events to the Study DMC and other Oversight Bodies**

The CSPCRPCC is responsible, in conjunction with the CSPCC, for coding study safety data into the MedDRA (Medical Dictionary for Regulatory Affairs) Dictionary and creating event tabulations. The study biostatistician will present a summary of those events to the data monitoring committee (DMC) on a schedule set by the DMC. The DMC will recommend to the CSRD Director whether the study should continue or be stopped for safety reasons. Summary reports from the DMC will be provided to each site for their records.

Unexpected AEs and SAEs will be reported to the Study Chairs' Office. The Study Chairs and the CSPCC Directors will report SAEs that are determined to be both related to the investigative treatment and unexpected to the CSRD Director and site investigators after review.

- **Reporting Adverse Events and Serious Adverse Events to the IACUC**

The site investigators will report all SAEs and Unanticipated Problems involving risks to animals to their individual site IACUC committee and to the Chief Veterinarian Medical Officer.

The AE Specialist at the CSPCRPCC will address questions about managing or reporting of adverse events or serious adverse events.

- **Additional Safety Concerns**

1. Unmasking the study treatment

The study treatment is not blinded, thus unmasking is not applicable in this protocol.

2. Discontinuation of treatment (removal of dog)

A participant may be terminated from the study. If so, the dog will be removed. Medical and scientific judgment should be exercised in deciding whether to terminate a participant from the study. Before any paired participant is terminated, the site investigator must contact the study chair for instructions and approval. A participant may be terminated and the dog removed from a participant if:

a. Participant does not keep scheduled study visits and does not respond to phone calls or attempt to reschedule appointments. See Lost to Follow-Up section for additional details.
b. Participant moves so far away that the study team cannot practically continue to make home visits
c. Participant is deployed
d. Participant withdraws from study and chooses to return dog
e. There is evidence that the dog has been physically or psychologically abused or mistreated
f. There is evidence that the participant is failing to keep the dog healthy
g. Participant has not maintained mental health treatment
h. Participant is no longer able or willing to provide adequate care for dog
i. Participant fails to schedule and honor required initial, 6-month and 17-month parasite checks, or 12-month wellness check, or fails to take a sick dog to a veterinarian for treatment of a serious illness or injury.

For a comprehensive list of reasons that may lead to withdrawal and/or dog removal see the STUDY WITHDRAWAL & TERMINATION section.

- **Risks to subject**

Various risks have been identified in the Informed Consent document regarding risks to subjects.The following lists the procedures which should be followed if any incident occurs.

a. Dog bites: The study team is obtaining dogs from vendors known to provide quality dogs, is providing training on preventing dog bites as a prerequisite for

receiving a dog, and is monitoring participants and dogs with VA Dog Trainers to identify behaviors or situations that can be modified to reduce the chance of bites. For these reasons, the study team feels that the risk of bites is less than what is seen in the general public.

a. In the event of a dog bite, the following individuals should be immediately informed:

Mark.mccranie@va.gov
Michael.fallon@va.gov
Derrick.tillman@va.gov
Eileen.Stock@va.gov
Leslie.Norman@va.gov
Joan.Richerson@va.gov
Amanda.Snodgrass@va.gov

1. Dog death: A dog may die while in the study, but it is expected to be a rare occurrence.
   a. The study team is obtaining dogs from vendors, which have bred their dogs to reduce common diseases and problems.
      - In the event of a dog death, the participant will be contacted by the study team's mental health professional and his/her own mental health provider will be called. Grief counseling for the participant will be provided as needed.
      - The dog will be replaced if the participant so chooses. The participant will receive the same dog type as they previously had. Data collection will continue on the same timeline as prior to the dog's death.
      - If the Veteran does not want another dog, then the participant should be terminated from the study. If the participant is willing data collection should continue on the same timeline as prior to the dog's death. .
      - In the event of a dog death, the following individuals should be immediately informed:

Mark.mccranie@va.gov
Michael.fallon@va.gov
Derrick.tillman@va.gov
Eileen.Stock@va.gov
Leslie.Norman@va.gov
Joan.Richerson@va.gov
Amanda.Snodgrass@va.gov

2. Distress from interviews or questionnaires: Information collected on the questionnaires and interviews may upset the participant. To mitigate this risk, interviewers will allow plenty of time for the participant to answer questions and will offer breaks as necessary. The data collector may recommend that the participant contact his/her mental health provider to help with feelings.
   - In the event that a participant is distressed during questionnaire/interview completion he/she should be given the option to terminate the visit

immediately. If the participant is open to it, the visit may be continued on another occasion. The occurrence of this will be documented through the differing dates on CRFs received by PPCSPCC. The data collector may recommend that the participant contact his/her mental health provider to help with feelings.

- If the LSI and members of the local study team consider continued study participation to be too distressing for a participant they may choose to terminate the participant from the study. Decisions regarding termination from the study will be made by the LSI, and members of the local study team on a case-by-case basis.

3. Financial Risk. Because the well-being and medical/surgical insurance taken out on each dog by VA pays 100 percent of eligible veterinary costs with no co-pay or out-of-pocket expenses to the participants, and because all participants will receive $75 per month for incidental expenses plus a coupon for dog food that should cover food costs, financial risk is considered to be low for participants while in the study. However, once participants complete the study, they will be responsible for all dog care and veterinary costs, which has been disclosed in the ICF.

4. Additional risks include the loss of sensitive information. The study team will do everything possible to prevent this from occurring.

5. Participants will be informed as soon as possible if additional risks are identified as a result of participating in this study.

- **Benefits for study**

Participants will be notified that the study team cannot promise that he/she will receive any benefits from taking part in this research study. The participant will also be told that he/she may gain benefits by interacting with the dog received.

XIV. HEALTHCARE UTILIZATION & EMPLOYMENT/PRODUCTIVITY ANALYSIS

VA administrative data sets will be the source of health care utilization. The hospital discharge data and the outpatient encounters datasets available from the VA Corporate Data Warehouse will be used to characterize health services used by participants. National data extracts of the Decision Support System (DSS) will be used to characterize the cost of care. VA to determine the cost of every hospital stay, patient care encounter, uses this cost system and other service dispensed to patients. Data will come from the DSS discharge, outpatient visit, and outpatient prescription extracts. The DSS data system has been in use at all VA sites for more than 10 years, and the vast majority of encounters are assigned cost estimates that are consistent with private sector costs for similar services (Barnett & Rodgers, 1999). A very small number of DSS cost estimates (much less than 1%) are inconsistent with the expected cost given the characteristics of care. Inconsistent cost estimates will be identified by comparing the DSS data to the encounter level cost estimates in the average cost database created by the Health Economics Resource Center (Barnett, 2003; Phibbs et al, 2003; Wagner et al, 2003). HERC estimates the cost of VA health care counters based on the average cost of similar encounters in the non-VA sector. HERC cost estimates will be substituted for the 1% extremes of DSS data that are inconsistent with expected costs.

Inpatient care will be considered related to mental health if the stay was in a specialized mental health bed section, or if the primary discharge diagnosis was a mental health disorder (an ICD-9 code in the range between 290 and 390). Outpatient care will be considered related to mental health if the visit was to psychiatric clinic stop code or was characterized by any mental health diagnosis code.

Mental health medications will be identified using the VA medication class variable which is used to characterize medications in the DSS pharmacy data. We will classify as mental health medications: anti-depressants (CNS600-CN699), anti-psychotics (CN700-CN799), and other classes of medications used in treatment of PTSD. We will work with site investigators to develop a list of medications being prescribed for sleep disorders at study sites, include off-label use of low-dose anti-depressants.

Participants will be queried regarding their non-VA utilization using the HERC-developed standard questions regarding outpatient and inpatient utilization (including Emergency Department visits). The mean VA DSS unit cost will be used for the same type of utilization for the cohort of PTSD patients as estimates of the cost of these non-VA services.

Participants will be asked for an authorization under HIPAA for use of VA data on the quantity and cost of health services they use during the trial. Participants will be queried regarding their employment and work productivity at baseline and during each follow-up visit, using the Work Productivity and Activity Impairment Questionnaire: General Health Problem V2.0 (Reilly et al, 1993). The questions in this survey will be rephrased to ask about the effect of PTSD on employment and productivity. The WPAI V2.0 queries respondents about their productivity at Work by asking, “During the past seven days, how much did your health problems affect your

productivity while you were working?" Respondents answer the question by choosing an integer ranging from 0 to 10. The WPAI V2.0 also queries respondents about ability to engage in regular daily activities. Respondents are asked, "During the past seven days, how much did your health problems affect your ability to do your regular daily activities, other than work at a job?"

- **Activities of Economic Team**

The economic team will be responsible for data evaluation and analysis in different phases of the study, as described below.

1. Activities prior to start-up

The economic team will create study forms pertaining to economic data. The team will review the HIPAA waiver and research consent forms to be sure that they include economic data and describe the participation of the economic team. An application to use cost and utilization data, and to work with the social security numbers of study participants, will be submitted to National Data Systems. A "study binder" will be created with regulatory documents, protocol, and other documents.

2. Activities after study enrollment begins

Under the direction of the study economist, the economic statistical analyst will conduct the following activities: The analyst will evaluate economic data submitted on case report forms. Data from initial patients will be evaluated for consistency and interpretability, and feedback provided to study staff via the coordinating center. Periodic reviews of case report forms will continue throughout the study. The research associate will submit continuing review for IRB.

A cohort file, including enrollee social security numbers (SSN's) from coordinating center, will be obtained. This file will be transmitted securely to the VA Corporate Data Warehouse (CDW). The SSNs of study participants will be used to identify patients in the patient file in CDW, and the associated CDW identifiers for that patient. SSN's that cannot be found will be flagged for follow-up. Previous trials have demonstrated that transcription errors will be made in about 2-5% of the SSN's of study enrollees. The economic team will confirm there was VA utilization around time of enrollment. The true social security number will be excluded from subsequent analytical steps. Data on health care cost and utilization of study subjects is extracted from VA administrative files based on the encrypted social security number. The resulting dataset contains the actual date each service was provided.

The analyst will develop and update programs to determine baseline demographics, utilization, and cost, and to determine utilization and cost during trial follow-up period. Cost and utilization data gathered for the economic study can only be accessed by members of the HERC economic study team. Access is restricted to the individuals working on the study: the economist, programmer, and research assistant

3. Activities after study follow-up is complete

The analyst and economist will create a data set of trial participant from case report forms, and VA cost and utilization data. These data will have quarterly observations of health care utilization and cost from study enrollment until the end of follow-up. A repeated measures dataset of employment data will also be created. The economic team will prepare analytic tables and a one or more papers with the economic findings of the trial.

XV. QUALITY CONTROL PROCEDURES

- **Standardization/Validation of Measurements**

Prior to the start of the study, each site investigator and local study coordinator will attend a training meeting to ensure that they understand the technical aspects of the protocol. This will ensure uniformity in the completion of data forms and in the conduct of study procedures.

Specific training to be provided:

- Informed consent and study procedures training
- Study specific informed consent procedures and Service Dog issues.
- Randomization and assessment schedules.
- General processes for completion of all forms for data collection
- Recruitment and screening procedures
- Training on use and administration of all study measures (WHO-DAS 2.0, CAPS, PCL-5, PHQ-9, VR-12, WPAI, GPH V2.0, HERC- survey of non-VA health care utilization, Suitability to Have a Dog Checklist, Dog Related Questions for Service Dogs and Emotional Support Dogs, Service Dog/Emotional Support Dog Post Evaluation questions).

Perry Point Coordinating Center Staff will work with any individual unable to attend the training meeting to ensure that they receive the training above.

All study chairs, site personnel and primary CSP study team members will be required to complete the following training courses.

1. CITI
   a. Good Clinical Practices
   b. Working with the IACUC
   c. Working with Dogs
2. Mandatory VA research classes per local site
3. C-SSRS training

- **Protocol Violations**

Any protocol violation will be reported immediately to the Chairman's office and the Perry Point CSPCC. Each of these groups then reserves the right to forward notification, as required by local policy and regulation. Protocol violations will be forwarded to the VA cIRB based upon guidelines provided. There are no approved protocol deviations. Any deviation from the protocol will be considered a protocol violation.

- **Probation/Termination of Participating Centers**

Each participating site is expected to consent approximately 100 participants during the 18-month recruitment period in order to reach approximately 74 pairings per site. This is approximately five participants per month. Sites are permitted to recruit more participants per

month if it is feasible. If by month three a site has enrolled no participants, that site can be placed on immediate probation. This decision will be made by study leadership.

If a site is placed on probation, it will have six months to have probation removed before being terminated as a CSP site. At the start of the Probation Period, a conference call will be held to determine the reasons for failure to recruit. If the failure to recruit is a function of specific eligibility criteria, e.g. no participants willing to travel for the study, the Chairs will address it with the Executive Committee and potentially other sites. If the failure to recruit is a function of study personnel, help will be provided to correct the situation. The site will be expected to over recruit in the following months to enable sufficient subjects recruited during the enrollment phase. During the probation period, weekly calls will occur between the site investigator and the national study coordinator to determine whether there are improvements in recruitment efforts.

- **Plan to be implemented if enrollment goals are not met**

If enrollment falls short of anticipated goals, the following will be considered to improve participant recruitment:

- Eligibility criteria will be reassessed to determine if there are any alterations in inclusion/exclusion criteria that could be made to increase recruitment. A conference call/meeting of the Executive Committee with site PIs will occur to discuss any change in eligibility criteria.
- Additional sites will be considered, if needed.

XVI. DATA MANAGEMENT

- **Data Security at the VA**

CSP has a commitment to maintain data security and participant privacy. Standard CSP practices and policies for the conduct of clinical research studies have been implemented and reviewed periodically. CSP Center Directors are responsible for ensuring that all CSP Data Security Policies are enforced within their Centers. CSP employees are responsible for following all CSP Data Security Policies when conducting study work. All study data collected will be handled, maintained and stored at CSPCC and participating sites according to the CSP standard practices and policies. These include:

- Protected Health Information (PHI) as defined by the HIPAA will not be used for any purpose that is not related to the activities of this study.
- CSP study data are maintained in secure files and records are identified only by a participant identification number.
  - Participant identification numbers are not derived from or related to information about an individual.
  - All electronic PHI are stored on secure servers and may not be moved to a PC or other external device.
  - Paper CRFs are stored in locked file cabinets and rooms.
- Highly confidential protected health information (HCPHI: names, SSN, physical and electronic addresses and phone numbers) collected by the study are defined in the informed consent or privacy authorization document, and are stored separately from other study data.
  - Electronic HCPHI is encrypted and password protected and paper CRFs containing HCPHI are stored in locked filing cabinets and rooms.
- When necessary, PHI (exclusive of HCPHI) may be transported between secure servers. PHI must be encrypted and password protected while being transferred using a FIPS 140-2 certified program. Any removable storage device used to transfer PHI (e.g., hard-copy printouts, data tapes, CD's, USB drivers, etc.) should either be destroyed after transfer is complete or given to the Data Security Administrator to be stored in a secure, fireproof safe. A trackable mail system must be used for the physical data transfers.
- No PHI may be sent via MS Outlook or Exchange unless the message is secured utilizing encryption and VA authorized security protocol.
- Documents sent for medical evaluation purposes (e.g., endpoint adjudication) are sent via trackable express mail. Personal information is redacted by the VAMC or CSPCC if not determined to be necessary for completing the evaluation.
- Only VA-owned equipment or equipment configured to VA security standards is permitted to connect to the CSP networks in accordance with VA Directive 6504.
- Training, reminders, and signed data security statements are used to ensure CSP and participating site personnel understand VA policies.

Sharing of CSP study data outside of CSP requires the approval of the Director, CSRD and data use agreements. In addition, sharing of data outside of VA requires local ISO, PO and ACOS-R approvals.

CSP and local study personnel who are no longer part of the research team will not have access to any research study data.

- **Data Security for Vendors:**

Information will be shared to the vendor in order to allow for pairing. In order to allow for data sharing, all contractors will have to follow VHA requirements for data security:

- complete the data security training (on Talent Management System (TMS))
- complete background checks
- a data use agreement may be needed
- CSP Coordinating Center will help with the vendors receiving training and obtaining background checks.

Appendix A of the contract to the vendors will be reviewed by the VA Central Office ISO as well as by the Perry Point ISO to allow for appropriate approvals. Vendors will receive the participant information from CSP Coordinating Center by a secure fax or telephone.

a. Information will be stored in locked file cabinets, in a locked room in which only those employees of the vendor that have undergone training and background check will have access.

Vendors who choose to have computer systems that meet the compliance level of the VA will be able to store information electronically.

- **Data from pilot study on Service Dogs**

Data currently exists from the ongoing pilot study on Service Dogs for Veterans with PTSD. A data use agreement will be developed between James A Haley Veterans Hospital and Perry Point CSP Coordinating Center to allow data from preliminary study to be shared and used in future analysis.

- **Data Collection and Data Entry**

Data management will be performed by the VA CSPCC Perry Point, MD using DataFax, a type of data management software. The CSPCC will have overall responsibility for the data at the end of the study.

Data will be collected at the study sites on source documents, which will be entered at the site into paper CRFs (unless the CRF is the source document). The blank CRFs will be supplied by the VA CSPCC Perry Point, MD. CRFs are to be completed on an ongoing basis during the study. The medical chart and the source documents are the source of verification of data. CRFs should be completed according to the instructions in the study operations manual. The site investigator is responsible for maintaining accurate, complete and up-to-date records for each

subject. The site investigator is also responsible for maintaining any source documentation related to the study.

Completed CRFs will be sent by center personnel on a regular basis to the DataFax system at the VA CSPCC Perry Point, MD. DataFax allows the clinical centers to retain the original CRF and source documents while providing an image to the VA CSPCC. Data within the image are then checked for accuracy/completeness and entered into the study's database using DataFax software. Data received at the VA Perry Point CSPCC will be reviewed, verified and edited before being entered into the main study database. If incomplete or inaccurate data are found, a data clarification request will be forwarded to the clinical site for a response. Sites will resolve data inconsistencies and errors before resending the corrected CRFs to the VA CSPCC. All corrections and changes to the data will be reviewed before being entered into the main study database. The participating sites will receive reports at least monthly regarding the quality and quantity of data submitted to the VA Perry Point CSPCC.

Site investigators agree to routine data audits by the staff of the VA CSP monitoring unit, as well as by the CSPCC staff. The VA CSP monitors will routinely visit each site to assure that data submitted on the appropriate forms are in agreement with source documents at the sites. They will also verify that subject informed consent for study participation has been obtained and documented in the subject's progress notes, all essential documents required by GCP regulations are on file, and sites are conducting the study according to the research protocol. Any inconsistencies will be resolved, and any changes to the data forms will be made using established VA CSPCC Perry Point procedures.

When the study is completed and all data have been entered into the database and the database has been checked for quality and is locked, the CSPCC statisticians will perform statistical analyses of the data in accordance with the Statistical Analysis Plan (SAP). Periodically, during the study, CSPCC will prepare various summary reports of the data so that progress of the study can be monitored. These reports will be prepared for the Data Monitoring Committee (DMC) and other committees, as appropriate.

- **Study Documentation and Records Retention**

Study documentation includes all paper CRFs, data clarification forms, source documents, monitoring logs and appointment schedules, investigator correspondence and regulatory documents (e.g., signed protocol and amendments, IRB correspondence and approved consent form and signed informed consent forms, Statement of Investigator form, etc.).

Source documents include all recordings of observations or notations of clinical activities and all reports and records necessary for the evaluation and reconstruction of the study. Thus, source documents include, but are not limited to clinical reports, participant completed assessments, progress notes, hospital charts or pharmacy records and any other reports or records of any procedure performed in accordance with the protocol.

Whenever possible, the original recording of an observation should be retained as the source document; however, a photocopy is acceptable provided that it is a clear, legible, and exact duplication of the original document.

Research records for all study participants are to be maintained by the site investigator in accordance with the VA record control schedule until notified by CSPCC. These records are to be maintained in compliance with IRB, State and Federal requirements, whichever is longest. It is the site investigator's responsibility to retain copies of the completed CRFs until notified in writing by CSPCC that they can be destroyed. In all instances, the site must get permission from CSPCC prior to disposition of any study documentation and materials.

XVII. GOOD CLINICAL PRACTICES

- **Good Clinical Practices (GCP)**

This trial will be conducted in compliance with Good Clinical Practices (GCP) regulations. The intent of these regulations is to safeguard participants' welfare and assure the validity of data resulting from the clinical research. The VA Cooperative Studies Program will assist site investigators in complying with GCP requirements through its Site Monitoring, Auditing and Resource Team (SMART) based in Albuquerque, NM. SMART serves as the Quality Assurance arm of CSP for GCP compliance. SMART will provide training, manuals and materials to assist study personnel in organizing study files and will be available throughout the trial to advise and assist LSIs regarding GCP issues.

Monitoring of sites participating in the trial will be executed according to Cooperative Studies Program (CSP) guidelines. SMART will conduct initiation visits at each site soon after study start-up. Additional monitoring visits may be conducted as deemed necessary by study leadership or SMART. For-cause audits will be conducted as requested by study leadership or CSP Central Office. These audits may be scheduled or unannounced.

The purpose of these site visits is to encourage and assess compliance with Good Clinical Practice requirements. Monitors/Auditors will examine participant study files including source documents in both the clinic files and the participants' official VA medical records and will also review regulatory/essential documents such as correspondence with the VA's Central IRB and Sponsor (CSP). Areas of particular concern will be participant informed consent issues, protocol adherence, safety monitoring, VA's Central IRB reviews and approvals, regulatory documents, participant records, drug accountability and site investigator supervision and involvement in the trial. Reports will be prepared following the visit and sent to the LSI.. In addition, the CSPCC in collaboration with SMART will monitor study sites remotely through weekly reports, data queries and SC/LSI conference calls.

- **GCP Training**

All study team members will be required to complete the animal trainings online at CITI (Collaborative Institutional Training Initiative) (https://www.citiprogram.org/) at the interval required by the Office for Research and Development for animal research personnel for the duration of the study and the on-line CITI training or ORD equivalent prior to assuming their role on the study and then every two years thereafter for the duration of the study. If additional sites are added or there is turnover in personnel, any new team members must satisfy the same requirements as delineated above for the primary SI or primary SC. Written verification of GCP/HSP training of study site personnel will be submitted to the CSPCC prior to the start of patient enrollment at each site.

- **Animal Training**

All team members at each site, including the site PIs and the study chairperson will be required to complete the animal trainings online at CITI (Collaborative Institutional Training Initiative) (https://www.citiprogram.org/) every year for the duration of the study. They will also be

required to complete the Veteran-oriented Dog Care Modules (also offered online at CITI) so they will be familiar with what education participants have received. Courses will include 'working with the IACUC' and 'Introduction to Dogs'. If additional sites are added or there is turnover in personnel, any new primary SI or primary SC will be required to take the on-line CITI training or ORD equivalent prior to assuming their role on the study. Written verification of GCP/HSP training of study site personnel will be submitted to the CSPCC prior to the start of participant enrollment at each site.

- **Summary of Monitoring and Auditing Plans**

    a. Monitoring Visits
        (1) Initiation visits at each site soon after study start-up
        (2) Additional monitoring visits may be conducted as deemed necessary by study leadership or SMART.

    b. Audits
        (1) Routine audits – independent site visits to one or more sites as determined by SMART.
        (2) For-Cause audits –independent audit of a site as requested by study leadership or CSP Central Office.
        (3) Audits may be scheduled or unannounced.

XVIII. BIOSTATISTICAL CONSIDERATIONS

- **Study Design and Outcome Measures**

This is a longitudinal randomized trial, with two randomized arms which will follow participants with PTSD for 18 months post-pairing to examine how the provision of a Service Dog or Emotional Support Dog impacts their function by assessing longitudinal change in functioning over time. The treatment arms consist of participants with PTSD partnered with Service Dogs (SERV) and participants with PTSD partnered with Emotional Support Dogs (EMOT).

Following initial screening for inclusion criteria, randomization, and baseline assessment collection, participants will be enrolled in the observation phase of the study. The participant will remain in the observational phase for at least three months. After a participant has completed the observational phase and a dog is available, they will have the clearing visits where eligibility will be reconfirmed and assessment data will be collected. The participants will be assessed for functioning, mental health, psychosocial well-being, and socioeconomic and healthcare utilization characteristics. The minimum time for the observation phase is 3 months; however, this phase could be considerable longer depending upon the wait time for a Service or Emotional Support Dog to be ready for the randomized participant. During this time, all participants will be attending a dog care class and must pass a dog care test on dog care.

Following clearing, data will be collected at one and two weeks, one and two months and at 3, 6, 9, 12, 15 and 18 months post pairing. Participants will be assessed on activity limitations, quality of life, psychosocial well-being, dog-related information, socioeconomic and healthcare utilization characteristics over time. For this study, activity limitations will be assessed at specific time points during screening, clearing and follow-up will be assessed by the WHO-DAS 2.0 and the Medical Outcomes Study 12-Item Short Form that has been adapted for use in military participants (VR-12). Additional outcomes in mental health, healthcare utilization, health care costs, and employment/productivity will also be included.

The primary objective of this study is to determine how the provision of a Service Dog or an Emotional Support Dog impacts activity and quality of life for participants with PTSD. Primarily, the objective is to compare activity limitations and quality of life change, relative to baseline, over the 18-month intervention period between the two groups of participants with PTSD, i.e., those who receive Service Dogs and those who receive Emotional Support Dogs. There are two primary outcomes in this study: 1) improvement in activity as assessed by the total WHO-DAS 2.0 score and 2) improvement in quality of life as assessed by the Physical Component Scale (PCS) and Mental Component Scale (MCS) of the VR-12. The outcome measure for the first primary objective will be the change in the WHO-DAS 2.0 score over the 18 month of intervention phase adjusted by baseline scores. The outcome measures for the other primary objectives will be the relative change in the PCS and MCS scores over the 18 month of intervention phase adjusted by the baseline scores.

The secondary and tertiary outcomes in this study are: 1) a reduction in PTSD symptoms as measured by the PTSD Civilian Checklist (PCL-5) 2) improvement in depression as measured by PHQ-9, 3) improvement in sleep as measured by the Pittsburgh Sleep Quality Index (PSQI),

4) decreased thoughts of suicide as measured by the Columbia-Suicide Severity Rating Scale (C-SSRS), 5) to characterize and compare how healthcare costs and utilization are impacted, 6) improvement in employment and productivity.

Sample Size

The three primary outcome measures for the proposed randomized trial are the:

1. WHODAS 2.0 score,
2. Physical Component Score (PCS) calculated from the VR12, and
3. Mental Component Score (MCS) calculated from the VR-12

Currently there are no randomized studies, which have been conducted on the provision of Service Dogs and Emotional Support Dogs for the treatment of Veterans with PTSD. Therefore, this would be the largest study and first multi-center trial to date. When reviewing the parameters for determining sample size for this study, the planning committee discussed the treatment group differences that would need to be found in the WHODAS 2.0, MCS and PCS primary outcome measures that would be meaningful from both a clinical standpoint and from the view of the participant.

The overall goal of this proposed study is to compare the two treatment groups: Emotional Support Dogs (EMOT) and Service Dogs (SERV) with respect to two specific outcomes – activity limitations and quality of life over 18 months of follow-up. While both treatment groups are expected to show improvement just by virtue of participating in this treatment trial, the committee decided that a 10-point difference in the WHO-DAS 2.0 score would need to be found between treatment groups to be clinically significant. The committee also determined that individual changes of 1 standard deviation (SD) on the PCS and 1 SD on the MCS (Kearney, et al., 2012) would constitute an improvement in both of these measures.

By examining current data, the committee determined that using a 10-point difference between groups in the WHO-DAS 2.0 total score and a change of 15% in PCS and MCS would be conservative estimates of the sample size needed. To calculate sample size, data from two on-going CSP studies were used as an estimate of WHO-DAS 2.0 mean scores and SD. Data from a study used to assess outcomes in participants who participated in a mindfulness-based stress reduction program were used as the PCS and MCS mean and SD (Kearney, 2012).

TABLE 6: Sample Size Estimates (α=0.05) per Treatment Group*
Outcome by Power (1-β)
(Control Group Mean and Standard Deviation)

Power (1-β)		WHO DAS 2.0	MCS	PCS

	EMOT Group Mean (S.D.)	SD=13 & Mean difference between groups	33.2 (10.6)**	39.8 (10.8)**
		Change from EMOT Group Mean:		
		5 point	**10%**	**10%**
0.80 0.85 0.90		108 123 144	161 185 216	117 134 156
		7 point	**15%**	**15%**
0.80 0.85 0.90		56 63 74	72 82 96	53 60 70
		10 point	**20%**	**20%**
0.80 0.85 0.90		28 32 37	41 47 55	30 35 40

* SD from CSP 579

** Kearney et. al, 2012

In order to detect a 10-point difference in treatment group mean scores for the WHO-DAS 2.0 over the 18 months of follow-up, at a statistical significance level of 0.05 (two-tailed test) and a power of 0.85, 32 participants per group will be needed (see Table 6). In order to detect a 15% difference in mean scores for MCS over the 18-months of follow-up, at a statistical significance level of 0.05 (two tailed test) and a power of 0.85, 82 participants per group will be needed (see Table 6). In order to detect a 15% difference in mean scores for the PCS over the 18-months of follow-up, at a statistical significance level of 0.05 (two tailed test) and a power of 0.85, 60 participants per group will be needed (see Table 6). The sample size estimates were obtained using the PC-software SAS 9.2.

Assuming the largest of the three sample sizes, 82 participants per group, and a maximum of 25% participant loss or dropout rate a sample size of 110 participants per treatment will be required for this study. To obtain the necessary sample size of 220 participants, at least three VA medical centers will be recruited. Once a participant has been determined to be eligible for the study at the participating VA medical center, randomization to one of the two groups will be accomplished by a telephone call to the Perry Point Coordinating Center. All sites will be encouraged to recruit and enroll participants faster than the stated requirements.

- **Statistical Methods**

The intent-to-treat population (ITT) is defined as the population of participants who will be randomized in either the Service Dog (SERV) or Emotional Support Dog (EMOT) treatment groups. The participants will be categorized based on their initial randomized group assignment and will be included in analyses irrespective of their status – completer or drop out of the study before completion. A per protocol population (PP) is defined as the population of participants who are paired with a dog. Analyses of all outcome measures – primary and secondary – will use both the ITT and PP population.

All statistical tests will be 2-sided and at 5% level of significance. SAS 9.2 or higher will be used to conduct all statistical analyses. Initial analysis of all hypotheses will involve the examination of simple descriptive statistics. Frequencies and proportions will be reported for all categorical variables. Continuous variables will be described with either means and standard deviations or medians and other percentiles depending on whether or not the variables are approximately normally distributed. In some instances, simple descriptive statistics will be the primary statistics of interest. In most cases, these will be preliminary to the analyses described below.

- **Primary Outcome Measures**

Activity Limitations: The WHODAS-2.0 was developed to assess disability related to physical and psychiatric disorders experienced within the past 30 days and provides a profile of functioning across six activity domains: understanding and communicating, mobility, self-care, getting along with others, life activities, and participation in society, as well as an overall summary score. WHO-DAS 2.0 summary scores can range from 0 (no disability) to 100 (full disability). The level of activity will be based upon the WHO-DAS 2.0 Summary Score measured at baseline, clearing, and 3, 6, 9, 12, 15 and 18 months post-pairing. To begin the analyses, the mean and standard deviation of the activity level will be calculated separately, at each time point, for participants assigned to the Service Dog group and the Emotional Support Dog group. We hypothesize that participants who receive Service Dogs will have decreased activity limitations over time, as compared to participants who receive an Emotional Support Dog.

For this hypothesis, a linear repeated measures mixed model will be used to determine changes over time between groups. Thus the level-1 units consist of the repeated measures, WHODAS 2.0 score, for each subject, and the level-2 unit is the individual or subject. In addition to estimating overall parameter estimates, multilevel modeling for repeated measures allows regression equations at the level of the individual (Curran, 2010). WHODAS 2.0 summary scores will be considered as the dependent variable. Other variables found to be potential confounders will also be included in the model as covariates. The use of mixed models allows for control of covariance data expected in clustered and repeatedly sampled data, and missing data.

An additional analysis for this hypothesis will use the linear repeated mixed models, with random intercepts. When random coefficients are specified, each subject has its own regression equation, making it possible to evaluate whether subjects differ in their means and/or response

patterns over time. The WHODAS 2.0 summary scores will be regressed on time and the group x time interaction with random intercepts added for participants that will account for the correlation among repeated measures.

Quality of Life: The outcome measure for hypothesis 1-1b will be a summary measure of mental health status as measured by the Mental Component Summary (MCS) from the Veterans RAND 12-Item Health Survey (VR-12) instrument and a summary measure of physical health status as measures by the Physical Component Summary (PCS) from the VR-12. The VR-12 is a brief, generic, multi-use, self-administered health survey comprised of 12 items. The VR-12 was developed using extensive research from the VR-36 in the Veterans Health Administration (VHA). The scoring of the PCS and MCS for the VR-12 is based on weights derived from the VR-36 instrument administered to 1.4 million Veteran enrollees with 877,775 respondents in the 1999 Large Health Survey of Veteran Enrollees (Veterans Health Study) (Iqbal, 2009) Higher PCS and MCS scores reflect greater quality of life. To begin the analyses, the mean and standard deviation of the PCS and MCS will be calculated separately, at each time point, for participants who were assigned to the Service Dog group and the Emotional Support Dog group. We hypothesize that participants who receive Service Dogs will have improved quality of live over time, as compared to participants who receive and emotions support dog.

As described above, a linear repeated measures mixed model will be used to determine changes over time for the PCS and MCS between groups. There will be two separate models, one where the PCS will be considered as the dependent variable and a separate model where the MCS summary score will be considered as the dependent variable. Other variables found to be potential confounders will also be included in the model as covariates. Additionally, a linear repeated mixed models, with random intercepts will be computed.

- **Secondary and Tertiary Outcome Measures**

Secondary continuous variable analyses will include linear repeated mixed model analysis on PTSD Symptom Severity using PCL-5, depression, sleep and thoughts of suicide. Additionally all outcome measures will be examined separately for the observation phase and post-pairing phases of the study. The basis for this analysis is to understand the characteristics of the population in the measures we have selected in their current level of care.

Open-ended questions are asked in the Dog Related Questionnaire. The purpose of these questions is to obtain information about the human-animal bond that occurs for participants that have PTSD and are paired with a SERV or EMOT. The questions will be entered as text based fields into the database. Two assessors will independently review and categorize the data. The assessors will then meet to review their categories. Discrepancies will be discussed with a third assessor to result in consensus of the responses. The categorized responses to these questions will help guide future planning needs, if a program is implemented. Additionally, qualitative measures of symptom status may be developed that are specific to the population of participants that are paired with a Service Dog or Emotional Support Dog. These qualitative measures may be developed as the study progresses by use of focus group or questionnaires.

A complete discussion of the study's statistical monitoring and data analysis is contained in the Statistical Analysis Plan.

- **Economic Outcome Measures**

To characterize and compare how health care utilization and costs are affected by the provision of a Service Dog or Emotional Support Dog, cost and utilization will be assigned to each 3 month period following study enrollment.

Multivariate regressions will be used to evaluate the effect of assignment to intended treatment and quarter after enrollment to cost and utilization. Generalized Linear Model (GLM) regressions will be used as these avoid the inappropriate assumption of normal distribution and homoscedastic errors (Manning et al., 2001). A Box-Cox regression will be used to identify the appropriate link function (Box & Cox, 1964). A modified Park test will be used to identify the appropriate distributional family. It is likely that these will identify negative binomial regression for the utilization, and a gamma regression to analyze quarterly costs. Standard errors will be corrected for the correlation of multiple observations from the same trial participant over time.

For the employment and work productivity hypotheses, the Work Productivity and Activity Impairment Questionnaire: General Health Problem V2.0 (Reilly et al, 1993). will be utilized. Work productivity will be characterized as Overall Work Productivity (OWP), which is a continuous variable bounded at 0 and 1. OWP is calculated as (Reilly et al, 1993):

OWP = % of Work time spent Working * % Productivity at Work

The % of Work time spent Working is calculated as the number of hours worked divided by the sum of the number of hours worked and the number of hours missed work due to health problems. These components are specifically queried by the Work Productivity and Activity Impairment Questionnaire V2.0 (WPAI V2.0).

The WPAI V2.0 queries respondents about their productivity at Work by asking, “During the past seven days, how much did your health problems affect your productivity <u>while you were working</u>?” Respondents answer the question by choosing an integer ranging from 0 to 10. The % Productivity at Work will be calculated as:

% Productivity at Work = (Respondent’s answer/10) *100

The WPAI V2.0 also queries respondents about ability to engage in regular daily activities. Respondents are asked, “During the past seven days, how much did your health problems affect your ability to do your regular daily activities, other than work at a job?” Respondents who are not formally employed will have their % Productivity for Activities of Daily Living (ADL) calculated as the following:

% Productivity for ADL = (Respondent’s answer/10) *100

Multivariate regressions will be used to evaluate the effect of assignment to intended treatment and quarter after enrollment on employment and on overall work productivity. Generalized Linear Model (GLM) regressions will be used, with Box-Cox regression used to identify the appropriate link function. A modified Park test will be used to identify the appropriate distributional family. Standard errors will be corrected for the correlation of multiple observations from the same trial participant over time. Two sets of analyses will be run for productivity. The first set of analyses will focus on work productivity and assign a value of 0% productivity to any individual who is not employed. The second set of analyses will focus on overall productivity and will use % Productivity at Work as a data point if the respondent was formally employed and % Productivity for ADL as a data point if the respondent was not formally employed.

- **Missing Data**

For this study we will collect data by in-person interviews and home visits, therefore we expect minimal missing data. When missing data are encountered in the analyses, a detailed sensitivity analysis can be conducted of the effects of various assumptions about the missing data. When needed, missing data will be imputed using standard multiple imputation techniques.

- **Interim Monitoring**

An independent oversight committee, a Data Monitoring Committee (DMC) will be monitoring study progress at predetermined time points over the entire duration of the study. The committee will receive analyses of the primary and the secondary outcome measures on a routine basis. Additionally, the committee will receive data on the participants enrolled, description of the reasons for participant exclusion, adverse events and each centers performance with regard to participant intake and follow-up. In general, this committee meets at six to nine months after the start of participant recruitment and at least annually (sometimes semiannually) thereafter. The committee will receive reports about three weeks prior to the meetings. Since the primary outcome measures are at 18 months, sufficient data for DMC's first review will not be available until the study has been ongoing for at least two years.

- **Criteria for Study Termination**

The DMC determined at their initial meeting that they would not utilize an interim analysis of the primary outcome to determine stopping rules. Instead they will analyze the safety data from the study, including AEs and SAEs, to determine if the study should terminate. This will continue throughout the study.

XIX. STUDY ORGANIZATION AND ADMINISTRATION

- **Requirements for Participating Medical Centers**

All participating medical centers must be willing and able to adhere to the study protocol. Minimum requirements for participating medical centers will include:

1. Site Investigator. The site investigator will be an individual with a clinical degree (e.g. psychologist, psychiatrist, nurse) who agrees to support the study enthusiastically and devote sufficient time and energy to ensure that recruitment goals are achieved and that study participants are followed appropriately. The Site Investigator will have at least a 5/8 VA appointment.
2. Local Study Coordinator. The site investigator will recruit a local study coordinator to assist in all aspects of study conduct including recruitment, participant monitoring, and assistance with all study procedures. Experience in the conduct of clinical investigation is highly desirable. The local study coordinator is expected to work diligently with the site investigator to meet the goals of the study. In addition, the local study coordinator will be expected to work collaboratively with the staff at the Chairman's office and the CSPCC.
3. Administrative Support. Each site must provide a letter from the Director and/or the Chief of Staff ensuring that the Site Investigator will receive full administrative support during the conduct of this study.
4. Local Approvals and Reporting Requirements. Sites will be required to agree to allow the VA Central IRB to be the primary IRB for the study and agree to use the VA Central IRB's informed consent template updated only for site specific items in the template (e.g., names of the Site Investigator). Site Investigators will be responsible for coordinating the medical center's interactions with the VA Central IRB. All sites will require Research and Development Committee approval of the study, and some sites may still require local IRB approval. The Site Investigator will be responsible for obtaining initial approval for the protocol and the informed consent form from his/her VA medical center's Research and Development Committee and from the Human Studies Subcommittee/IRB. Copies of the minutes for the meeting documenting approval by these committees or a letter from the Chair of the appropriate Committee stating when the Committee met, what their concerns were, and their final recommendation, will be submitted to the CSPCC before any participants are enrolled at the local center. It will be the responsibility of the Site Investigator to maintain continuing approval of the protocol at the local site. Documentation of this continuing approval will be submitted to the CSPCC.
5. Institutional Animal Care and Use Committee (IACUC). All site investigators will be responsible for obtaining approval of their local IACUC. All site investigators will be provided a copy of the Animal Component of Research Protocol (ACORP) for submission. The approved ACORP will be submitted to the site PI's R&D office for approval. Site Investigators must provide approval letters to CSP once obtained.
6. Global Monitoring and Reporting Responsibilities Delegated. By agreeing to participate in the study, centers delegate responsibility for global monitoring of the ongoing study to the VA Central IRB, DMC, HRC, CSSEC, CSPCC, and the CSPCRCPCC. In addition,

the local Research and Development Committee and the local Human Studies Subcommittee/IRB will require the Site Investigator to submit annual reports concerning the status of the study for local monitoring purposes.

- **Number of Participating Medical Centers**

There will be an 18-month period during which to recruit 220 total study participants. There are numerous exclusion criteria that will limit participant eligibility, along with the availability of service and companion dogs. Furthermore, the numerous study procedures that will be required are labor intensive and will be time consuming for the site investigators and local study coordinators. This limits the number of participants that reasonably can be followed at any one medical center. We feel that a three-site study in which each site is expected to consent approximately 100 participants in order to obtain the overall goal of 220 pairings is realistic and highly feasible. We should easily be able to meet recruitment and follow-up goals with three participating medical centers.

- **Available Participants at each of the three proposed sites**

Three sites have been selected. Each site has provided an estimate of the potential participant population that could potentially be recruited. It was not possible to determine how much of the population at each site met all inclusion/exclusion criteria.

1. VA Portland Health Care System
   3710 SW US Veterans Hospital Road
   Portland, OR 97207

   Between June 1, 2012 and May 31, 2013 the VA Portland Health Care System (VAPHCS) PTSD Treatment Team (PCT) recorded 10,712 encounters with 1549 unique Veterans, for an average of 129.1 unique Veterans diagnosed with PTSD per month receiving treatment services from the VAPHCS PCT over that time interval.

2. Atlanta VA Medical Center
   1670 Clairmont Road
   Decatur, GA 30033

   In Atlanta, there are approximately 40 consults per week seen (160 consults per month). Using FY13 data to this date (Oct 2012-June 2013), staff provide services to: 816 unique Veterans per month in the 540 (individual) stop code and 250 unique Veterans per month in the 561 (group treatment) stop code. There is probably some, but not total, overlap between these two, so it is reasonable to estimate 1000 unique Veterans per month are seen by the by the Atlanta VAMC PTSD Treatment Team.

3. Iowa City Veterans Affairs Health Care System
   601 Highway #6 West
   Iowa City, IA 52246

Iowa City Veterans Affairs Health Care System fields 3800 unique Veterans with PTSD per year of which 10% are referred to PTSD orientation. During FY13 (10/1/12-9/30/13) there were 3792 unique visits for patients coded with 309.81 POSTTRAUMATIC STRESS DIS.

- **Study Management**

CSPCC. The Perry Point Cooperative Studies Program Coordinating Center (CSPCC), located in Perry Point, Maryland, will provide administrative, data processing, and statistical support for the study. All data forms will be submitted to the CSPCC for processing. The CSPCC will edit the data and create the study database. CSPCC staff will provide guidance on completion of forms. All reports during the ongoing phase of the study and the final statistical analyses will be the responsibility of the CSPCC. CSPCC staff will also monitor study progress to ensure that the study is proceeding as scheduled. A CSPCC study team dedicated to this study has already been established. This team will be headed by the study biostatistician and will include a CSPCC project manager, a statistical programmer, a database programmer, and two computer assistants.

Office of the Chairman. The chair will provide leadership for the study. All questions and concerns of a technical nature will be addressed by the Chair's office. The Chair will be in routine contact with the participating centers to ensure that the study is performed in accordance with the protocol and to encourage the local study team to keep enrollment and follow-up activities on schedule. The Study Chairmen will preside over all meetings of study participants and will represent the study, along with the study biostatistician, at all meetings of outside review committees. The Chairman's Office will be funded with a full-time national study coordinator (1.0 FTE). The chair, in collaboration with the CSPCC and CSPCRPCC, will be responsible for all study executive decisions and will serve as the Chairman of the Executive Committee.

National Study Coordinator. The national study coordinator is responsible for maintaining enthusiasm for the study at all sites, discussing problems of mutual interest related to the study, and identifying any procedural/definitional modifications that might be required. The national study coordinator will be responsible to oversee all study activities in the Chairman's Office on a day-to-day operational basis. Specifically, the national study coordinator will:

1. Assist the Study Chairperson in coordinating and administering all aspects of the study;
2. Assist the Study Chairperson in monitoring the progress of the study;
3. Maintain close contact with the participating research teams and assist them in any procedural details of the study:
4. Maintain close contact with the study's supervisory committees; and
5. Work collaboratively with the Perry Point CSP Coordinating Center team to organize and plan periodic meetings of participating study teams for the purposes of reporting progress of the study.

National Dog Trainer and Local Dog Trainers: The national dog trainer will be responsible for overseeing the site dog trainers and will be 'proofing' all of the dogs that will be accepted by the

VA as part of this study. The national dog trainer will also assist in the development of the Dog Care Course and Exam. The local dog trainers will be responsible for the local activities including teaching and remediating students in the dog care class, performing home visits, and ensuring that the SERV and EMOT dogs are maintained during the randomization phase of the study. The local dog trainers will also be responsible for teaching the local obedience classes for the EMOT pairings.

Site Data Manager: The Site Data Managers will be responsible for assisting the Site Coordinators with data tracking activities. The Site Data Managers will assist with data collection as well as tracking Veteran's appointments and payments, conducting home visits and verifying that all data are collected at the appropriate time.

CSPCRPCC. The Cooperative Studies Program Clinical Research Pharmacy Coordinating Center, located in Albuquerque, New Mexico, will be responsible for monitoring adverse events and serious adverse events.

HERC. The Health Economics Resource Center, located in Menlo Park, CA will be responsible for conducting the healthcare utilization, cost, employment, and work productivity analyses.

Study Sites. The site investigator at each of the participating medical centers will be responsible for all aspects of the study at his/her site. This includes participant recruitment and follow-up, obtaining initial and yearly local R&D Committee and IRB approvals, ensuring adequate coverage for the study in his/her absence or the absence of other study participating staff, and ensuring the integrity of the study protocol and data from his/her site. A local study coordinator will be funded for each site and the site investigator will be responsible for hiring and supervising this person. In no case should any local study coordinator be assigned duties not related to this study. The primary goal for this position is successful recruitment, explaining informed consent, gathering data, and coordination of follow-up assessments. Funding for this position may be terminated or reduced if insufficient participants are recruited and/or data collection and follow-up are deemed to be unsatisfactory. Each local study coordinator will work with the national study coordinator to develop and to implement a recruitment plan. The local study coordinator at each site will participate in periodic conference calls with the other local study coordinators and other study staff.

- **Monitoring of the Study**

1. Monitoring bodies

The groups charged with monitoring the various aspects of the study will be the Executive Committee, the Data Monitoring Committee (DMC), the VA's Central IRB, and the Perry Point Human Rights Committee. These committees will meet at regular intervals according to the current Cooperative Studies Program guidelines: prior to the beginning of participant intake and at least every twelve months thereafter. In addition, the CSP Site Monitoring, Auditing and Resource Team (SMART), located at the CSP Clinical Research Pharmacy Coordinating Center (CSPCRPCC), will monitor the trial for GCP compliance.

The Executive Committee is the management and decision-making body for the operational aspects of the study and will monitor the performance of participating medical centers and the quality of data collected. The Executive Committee will formulate publication plans and will oversee the publication and presentation of all data from the study. The Committee must grant permission before any study data may be used for presentation or publication.

The Data Monitoring Committee (DMC) will review the progress of the study and will monitor participant intake, outcomes, adverse events, and other issues related to participant safety. The DMC makes recommendations to the Director of the Clinical Science Research and Development (CSRD) Service about whether the study should continue or be stopped. The DMC will consist of experts in the fields of PTSD, Service Dogs, clinical trials, biostatistics, and ethics. These experts will not be participants in the trial and will not have participated in the planning of the protocol. The DMC will consider safety or other circumstances as grounds for early termination, including either compelling internal or external evidence of treatment differences or the unfeasibility of addressing the study hypothesis (e.g., poor participant intake, poor adherence to the protocol).

At each of its meetings during the study period, the DMC will review the randomization rates and assess the difference between the actual and the projected rates, as well as the impact of these assessments on overall trial size. If the study enrollment is inadequate, the reasons for exclusion may be scrutinized and actions may be suggested. An assessment of whether the trial should be continued will be made followed by recommendations, as appropriate. All serious adverse events will be reported on a regular basis to the DMC for their review. Unexpected serious adverse events will be reported to the DMC as soon as they become known based upon the consensus of the Study Chair, the Study Biostatistician, the Director, Perry Point CSPCC, and the Study Pharmacist. The Study Biostatistician will provide the appropriate data to the DMC at specified intervals for this purpose. Conditional power estimates will be provided to the DMC to assist them in making their decisions and recommendations.

The VA's Central IRB will be the study's primary IRB and the IRB of record for the study. It will be responsible for the initial and continuing IRB reviews of the study. The VA Central IRB must review and approve amendments (changes to inclusion/exclusion criteria, protocols, informed consents, etc.), deviations, and review reports about adverse events and problems, complaints, terminations, etc. and that the investigation must provide the VA Central IRB all supporting documentation. The CSPCC will be responsible for providing the VA Central IRB with all materials that are required for each review and to respond to the VA Central IRB's queries and requests for additional materials. The VA Central IRB approves the original informed consent template and any requested changes to the informed consent forms.

The Human Rights Committee (HRC) at the Coordinating Center may be asked to convene if there is any serious adverse event requiring its attention.

Site Monitoring Auditing & Resource Team (SMART) will conduct an initial site visit at each site soon after study start-up. Additional monitoring visits may be conducted as deemed

necessary by study leadership or SMART. Monitoring of sites participating in the trial will be executed according to Cooperative Studies Program (CSP) guidelines. Independent routine audits will be conducted as determined by SMART. For-cause audits will be conducted as requested by study leadership or CSP Central Office. These audits may be scheduled or unannounced. The Study Group, which consists of all site investigators and local study coordinators, will meet annually to discuss the progress of the study and any problems encountered during the conduct of the trial.

- **Monitoring participant intake and probation or termination of participating sites**

The Study Chairs and the Study Biostatistician will monitor the intake rate and operational aspects of the study. Participating medical centers will continue in the study only if adequate participant intake is maintained. The Executive Committee may take action leading to the discontinuation of participant enrollment at a center with the concurrence of the CSPCC Director. If recruitment is not proceeding at an appropriate rate, the Study Chair and Study Biostatistician will scrutinize the reasons for participant exclusions. Based on this information, the Executive Committee may choose to drop centers or add additional centers, or to make minor modifications to the inclusion/exclusion criteria. The DMC and Director of CSRD will be notified regarding the dropping or adding of centers. The Executive Committee will only take actions leading to discontinuation of a center with the concurrence of the CSPCC Director. If a center is terminated from the trial, resources will be reallocated to other centers or used to start up a backup site.

- **Monitoring data quality and protocol adherence**

Each participating site will be monitored for data quality, completeness of follow-up and adherence to the protocol. Regularly scheduled conference calls (at least monthly) with the sites, CSPCC and Chairman's office will be held to address data collection, protocol procedures and other issues. Strict adherence to the protocol will be expected of every participating center and will be monitored by the DMC, the Executive Committee, and the CSPCC. Documentation of protocol breaches will be required and any medical center with repeated protocol violations will be recommended to the Executive Committee for termination. If a participating site investigator feels that adherence to the protocol will in any way be detrimental to a particular participants' health or well-being, the interest of the participant must take precedence. In addition, CSPCC, the Executive Committee and the DMC will monitor protocol adherence centrally. The Executive Committee will consider recommending a for-cause GCP audit be conducted by SMART for any site with repeated protocol violations and will consider terminating the site from the trial.

Data quality and the completeness of data retrieval will be closely monitored on an ongoing basis by the Coordinating Center. The study biostatisticians will present interim monitoring reports to the Executive Committee and the DMC that will include the following types of information:

- Participant intake
- Randomization errors
- Breaches of protocol
- Adherence and compliance with original treatment assignment

- Missed study visits
- Completeness of follow-up
- Data quality: data query and error rates
- Audit and site visit results.

If a site is identified as an outlier in terms of data quality, a site conference call or site visit will be initiated to assess the reasons why problems are occurring and how they can be corrected. If the problems continue, the site may be placed on probation or terminated from the study.

- **Monitoring of safety, efficacy and futility**

As previously noted, the DMC will review the accumulating data and be responsible for determining whether or not to recommend that the trial be stopped for efficacy, futility or safety. Data summaries will be prepared for the DMC for these purposes. Frequent summaries of adverse events will be prepared for the DMC for the monitoring of safety, e.g., annually or semi-annually. To aid the DMC in their deliberations, other relevant information inside (e.g., secondary analyses) and outside (e.g., other studies) will be made available. Complete details of the interim monitoring plans for the study are given in Section XVIII: Biostatistical Considerations**.**

XX. PUBLICATIONS

- **Publication of Research Results**

It is the policy of the Cooperative Studies Program not to reveal outcome data to site investigators until the data collection phase of the study is complete. This policy is meant to prevent possible biases that might affect data collection. Members of the DMC and the CSPCC Human Rights Committee will be reviewing outcome results to ensure that the study will be terminated early if a treatment is identified as prohibitively dangerous or if a definitive answer is reached prior to the scheduled study termination date.

All presentations and publications resulting from this study will follow CSP policy as specified by the CSP guidelines. The presentation or publication of any or all data collected by site investigators on participants entered into a Department of Veterans Affairs Cooperative Study is under the direct control of the study's Executive Committee. No individual site investigator has the right to use this study's data to perform analyses or interpretations, or to make public presentations or seek publication of any or all of the data without the specific approval of the Executive Committee.

The Executive Committee has the authority to establish any number of publication committees, which usually will comprise subgroups of site investigators and some members of the Executive Committee, for the purpose of producing manuscripts for presentation and publication. Any presentation or publication related to this study should be circulated to site investigators for review, comments and suggestions at least four weeks prior to submission of the manuscript to the presenting or publishing body.

All publications must give proper recognition to the funding source and should list all study participants (not necessarily as authors of the manuscript). If a site investigator's major salary support and/or commitment is from the VA, it is obligatory that the site investigator lists the VA as his/her primary institutional affiliation. Submission of manuscripts or abstracts must follow the usual VA policy; ideally, a subtitle states, "A Department of Veterans Affairs Cooperative Study." The CSP also requires that every manuscript be reviewed and approved by the CSPCC Director prior to submission as a final quality control step. Mechanisms for appeal by a dissatisfied site investigator will follow procedures defined by the VA Office of Research and Development.

Participation in Department of Veterans Affairs Cooperative Studies is voluntary. Any site investigator who cannot accept these operation guidelines regarding publication policy should not volunteer to participate in the study.

- **Planned Publications**

Upon completion of the study, manuscripts will be prepared that focuses on the following objectives:

- The challenges of doing research on animals and humans: lessons learned. This paper will summarize the challenges faced by the research team over the course of the study.

- Does having a Service Dog improve community participation, reduce PTSD symptoms and quality of life over an Emotional Support Dog; This paper would examine differences between group (SERV vs EMOT to the primary outcomes of WHODAS, Quality of life (physical) and PCL)
- Dogs preventing suicide intent: this paper would examine the findings between groups with the outcome of suicide scale and perhaps the other mental component summary. The cost benefit of Service Dogs compared to Emotional Support Dogs – this would compare the two groups to the healthcare utilization, medication use, etc.
- A paper that focuses on the expectation of receiving a dog and how scores of the various measures change.

XXI. REFERENCES

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