Protocol

1. Project Title: Spanish Online & Telephone Intervention for Caregivers of Veterans with Stroke

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Funding Source: VA HSR&D

3. Abstract: Family members of stroke survivors experience high rates of depression and burden.[1-4] These conditions have been shown to be major contributors of stroke survivors' functional recovery, resource use, and institutionalization.[5,6] The majority of stroke survivors return to their homes and need assistance from family members to perform activities of daily living.[7] These increased demands coupled with the lack of preparedness for their new roles lead to a high risk for developing depressive symptoms and other negative outcomes among caregivers. Studies suggest that caregiver mental health and care-recipient functioning may have reciprocal causal influence on each other.[8] Other studies indicate that Hispanic caregivers report higher levels of depression compared to other caregivers.[9,10] While previous studies reveal that problem-solving interventions are effective in improving caregiver and Veteran outcomes post-stroke, these interventions have been underused in practice because they require large amounts of staff time to implement and are difficult for caregivers to access due to distance and time. Moreover, none of these interventions have focused on the Hispanic population.

To overcome these barriers, our long-term goal is to partner with VHA Program Offices and stakeholders to implement novel interventions to help reduce cultural disparities for caregivers of Veterans with stroke that are sustainable in routine clinical practice. First, we will use a randomized controlled trial to test a problem-solving intervention for Spanish-speaking stroke caregivers that will be delivered over the telephone and online via the previously developed and nationally available Spanish version of the RESCUE website. We will adapt our previously pilot-tested problem-solving intervention and make it culturally-relevant for Hispanic caregivers. This work builds on the team's extensive experience in stroke caregiver education and disparities research.

4. Background: Stroke is one of the leading causes of death and the main cause of long-term disability in the United States (U.S.).[1] Blacks and Hispanics have higher incidence and prevalence of stroke than Whites in the U.S.[2]. Several factors, including genetic and environmental variables, have been shown to contribute to these disparities.[3] A recent report from the American Heart Association and the American Stroke Association (2011) identified important issues that require the attention of researchers, such as culture and language barriers, accessibility issues, and bias among healthcare providers.[2] The economic burden of stroke on the healthcare system is also significant. The projected total cost of stroke from 2005 to 2050 (in 2005 dollars) for Hispanic individuals is $313 billion.[11] Cardiovascular disease is a leading cause of mortality among Hispanics in the US and Puerto Ricans have the highest hypertension-related death rate among all Hispanics.[12,13] By 2030 there is a projected 20.5% increase in stroke prevalence compared to 2012; the highest increase (29%) projected to be in Hispanic men.[11]

Family caregivers are the major source of support for stroke survivors. Unlike other chronic diseases, strokes occur suddenly causing abrupt, devastating changes in the lives of patients and their family members. Between 25% and 74% of stroke survivors have residual deficits and require some assistance, whereas other survivors are completely dependent on their caregivers to meet their daily living needs.[4] These unexpected changes experienced by family caregivers oftentimes result in high rates of caregiver depression,[5,6] and

burden.[7] Studies on stroke caregivers report rates of depressive symptoms in 11% to 42% of this population.[6]

Following a stroke, the patient's family members often must take on new caregiver roles, in which they are expected to manage the stroke survivor's physical and mental issues while simultaneously dealing with personal stress and uncertainty.[8] Not surprisingly, caregiving burden has been found to be a main reason for institutionalizing stroke survivors.[9] Consequently, national practice guidelines[10,14] recommend that healthcare providers not only educate and support stroke survivors, but also their family caregivers who manage the survivors' care.

The benefits of family caregiver education and support programs have been recognized as important factors that help facilitate the transition home following a stroke. Providing caregivers with information, support, and skills has the potential to reduce negative caregiver outcomes and increase the likelihood that stroke survivors can remain at home. Even though there is variation in the type and amount of information and support that caregivers need,[15] multiple researchers found that individualized, tailored messages and support programs are more likely to improve caregiver outcomes than generic programs.[16-20] For example, helping family caregivers develop tailored strategies that can be implemented at home has shown positive effects on treatment compliance measures.[10] Offering education and support in the caregiver's preferred language is one way to tailor strategies and interventions for stroke caregivers. Further, interventions that include building skills to solve self-identified problems are more beneficial than other interventions.[21,22]

Unfortunately, as noted in systematic review articles, prior studies that used face-to-face individual or group sessions were burdensome to caregivers who had limited time and energy. These sessions were impractical to implement into practice because they were costly and labor intensive. Only two known research teams [23,24] have evaluated the use of problem-solving interventions delivered in a more cost-effective manner over the telephone. Despite small sample sizes in these studies, the interventions were effective. It is uncertain if these interventions would be equally effective with a Hispanic population.

Few studies have explored the addition of an Internet component to interventions on caregiver outcomes. The Internet is increasingly recognized as a cost-effective medium for disseminating up-to-date health information to large numbers of healthcare consumers. Research has shown that over 78% of Americans regularly use the Internet to obtain health information.[25] Adults 55 years and older (typical age range of stroke caregivers) are more likely to seek information on the Internet than adults in other age groups.[26] Over the last several years, the gap in Internet use between Hispanics and other groups has shrunk considerably. With a 10 percentage point increase, Hispanics have had the largest increase in Internet use-(54% to 64%) .[27] The advantage of the Internet is that adults can receive health information at a convenient place and time. Our investigative team and Pierce, et al.[28] are the only known investigators to conduct a web-based, stroke caregiver intervention. To date, only our team's clinical demonstration project (pilot project) tested combined web-based training for caregivers with a problem-solving, telephone intervention.

Another gap in the stroke caregiving literature is that only a handful of studies have evaluated interventions and programs aimed at improving the lives of caregivers of Veterans. This is important because there are differences between Veteran and non-Veteran caregivers.[29,30] While caregivers of Veterans face similar challenges as non-Veteran caregivers, they also must contend with the issues related to combat-related injuries or disability, posttraumatic stress disorder (PTSD), depression, and greater health risks than the general population. Veteran care recipients also have lower incomes, higher rates of chronic disease, more comorbid conditions, and poorer health overall than their non-Veteran counterparts.[29]

There is little known about caregivers from cultural or minority groups, such as Hispanic caregivers of Veterans. Studies show that in the general population, Hispanic caregivers exhibit more depression than white caregivers.[31] Other studies show that Hispanic dementia caregivers, who share similar challenges to stroke caregivers, have also been shown to have higher rates of depression compared to their non-Hispanic counterparts.[32] Given the higher incidence of stroke in Hispanics as compared to Whites[2] and the

importance of culture in affecting family norms and family management,[33] it is critical that we expand our understanding of ways to enhance the important role that informal Hispanic caregivers play in the recovery and use of healthcare services by Veterans post-stroke.

The proposed study addresses an important and understudied area of caregiving research, Hispanic, Spanish-speaking caregivers of Veterans who have suffered a stroke. We will focus on a Hispanic Veteran population that geographically has been shown to have a high rate of strokes, Veterans living in Puerto Rico (PR). This proposed study recognizes the important role that socio-cultural factors play in enhancing the skills of caregivers of stroke patients and addresses the need for culturally-relevant caregiver programs. Although Hispanics are the fastest growing group in the military and the VA, there has been insufficient effort to reduce the health disparities in this population. All Veterans are required to understand English, but many Hispanic family caregivers lack the basic English-language skills and Spanish is their preferred language.

This study includes a Partners/Stakeholders/Advisory Consortium. The importance of collaborating with VHA Central Program Offices, stakeholders and healthcare consumers has become increasingly recognized. These collaborations establish "buy-in" that maximizes the impact and sustainability of the research. These collaborations also facilitate subject recruitment, help circumvent problems in implementation, provide valuable insight concerning interpretation of the findings, and enhance dissemination of the findings. Our national partners are the VA Office of Geriatrics and Extended and the Office of Nursing Service, Polytrauma Field Advisory Group, and the National caregiver Support Program). The members will be particularly involved in the dissemination of findings and providing ideas for future roll-outs and sustainability. The study protocol, manuals/scripts and materials as well as the Spanish-version of the RESCUE website and are already developed and pre-tested. However, we will collaborate with the partners, stakeholders and Advisory Consortium, in adapting the intervention for Hispanic caregivers and will obtain their guidance throughout all phases. Although our partners, stakeholders, and Advisory Consortium will provide valuable insight and guidance throughout the study, they will not be engaged in research for this study (i.e., have contact with study participants or access to study data).

The objectives of this study are: 1) reduce caregiver burden and depression, 2) improve caregivers' problem-solving abilities, self-efficacy, and quality of life, 3) improve Veterans' functional abilities and determine the intervention's impact on Veterans' healthcare utilization, 4) determine budgetary impact, and 5) determine caregivers' perceptions of the intervention. The long-term goal is to partner with leaders to implement a culturally relevant, accessible, and cost-effective intervention for caregivers of Veterans post-stroke throughout the VHA.

5. Specific Aims:

Aim #1: to test the effect of an 8-session telephone and online problem-solving intervention on stroke caregiver's depressive symptoms at 1 and 12 weeks post-intervention.
Aim #2: to test the effect of the intervention on stroke caregivers' burden, self-efficacy, and health-related quality of life (HRQOL) at 1 and 12 weeks post-intervention.
Aim #3: to test the effect of the intervention on Veterans' outcomes: Functional abilities and healthcare utilization (i.e., unintended hospital bed days of care, number of emergency room visits, number of unscheduled clinic visits) at 1 and 12 weeks post-intervention.
Aim #4: to determine the intervention's budgetary impact.
Aim #5: Determine the acceptability of the intervention and the facilitators and barriers that Spanish-speaking stroke caregivers perceive when participating in the study.

We will conduct a two-group randomized controlled trial with repeated measures (baseline, 1 week post-intervention and 12 weeks post-intervention) and use mixed methods to determine caregivers' perceptions of the value, facilitators, and barriers to participating in the intervention. We will enroll 227 caregivers of Veterans with strokes. The caregivers will be recruited from the VACHS in San Juan, Puerto Rico, the James A. Haley Veteran's Hospital in Tampa, FL, and the Orlando VA Medical Center (VAMC) in Orlando, FL. Eligible caregivers

will be interviewed and complete baseline measures and then will be randomized to two groups: 1) intervention or 2) standard care. Caregivers in the intervention group will learn caregiving skills using the Spanish-language RESCUE website and will participate in a problem-solving intervention with the interventionist via telephone. Caregivers will be contacted on the telephone at baseline (1 week) and 12 weeks (post-intervention) by a study team member and asked to answer post-test questions/measures (i.e., caregiver depressive symptoms, burden, self-efficacy, health-related quality of life, and functional abilities of Veterans). Healthcare utilization data will be obtained from the MCAS the Decision Support System National Data Extracts (DSS NDE) and the Non-VA Medical Care fee-basis files. We will determine the budgetary impact for implementing the intervention by examining the cost data in the VA Managerial Cost Accounting System (MCAS) National Data Extracts (NDE) and the Non-VA Medical Care files. Qualitative interviews will be conducted with selected caregivers to obtain in-depth perceptions of the value of the intervention and facilitators and barriers of the intervention.

6. Research Plan:

Research Design and Methods Overview (Aims # 1, 2, 3).
Aim #1: (Primary Aim): to test the effect of an online and telephone support/Internet intervention on Spanish-speaking stroke caregiver's depressive symptoms at 1 and 12 weeks post-intervention.
Aim #2: to test the effect of the intervention on stroke caregivers' burden, self-efficacy, and health-related quality of life (HRQOL) at 1 and 12 weeks post-intervention.
Aim #3: to test the effect of the intervention on Veterans' outcomes: Functional abilities and healthcare utilization (i.e., unintended hospital bed days of care, number of emergency room visits, number of unscheduled clinic visits) at 1 and 12 weeks post-intervention.

Design**:** We will conduct a two-arm (intervention vs standard care), randomized controlled clinical trial (RCT) with three assessment points (baseline,1 week post-intervention and 12 weeks post-intervention).

Study Location: Study participants will be recruited from the VA Caribbean Healthcare System (VACHS) in San Juan, Puerto Rico, James A. Haley Veteran's Hospital in Tampa, FL, and the Orlando VA Medical Center (VAMC) in Orlando, FL, but all study procedures will be conducted over the phone from either the North/Florida South Georgia Veterans Healthcare System (NF/SG VHS) in Gainesville, FL or the VACHS in San Juan. The James A. Haley and Orlando VAMC sites serve only as identification and referral sites.

Sample: The sample will consist of 227 Hispanic caregivers of Veterans with strokes, 21 years old or older who will be randomized to one of two study arms. In addition, we will conduct chart reviews on the 227 corresponding Veterans.

Eligibility Criteria. Inclusion criteria: All Hispanic caregivers of Veterans with a primary diagnosis of stroke are eligible for participation if they meet the following criteria: 1) are the primary caregiver and provide the majority of care for a Veteran who has a diagnosis of stroke (ICD9 codes for stroke: 430-438 or ICD 10 codes 160.0 through 169.998) within the last year and who has at least two activity of daily living (ADL) deficits or a new or worsening neurological problem, 2) have Internet access and ability, (either themselves or via a relative or friend) 3) are reachable by cell or home phone, 4) Spanish is their preferred language, 5) have moderate to severe stress, and 6) self-identify as Hispanic, and 7) agree to random assignment to the intervention or standard care group. We will determine caregiver status.

Previous researchers have found that one individual is typically identified as the primary caregiver and is responsible for the majority of caregiving tasks. [24,56] We will determine time since stroke by reviewing the Veterans' CPRS records. Deficits in activities of daily living [ADL] will be assessed by asking caregivers if the Veteran is unable to complete any of the ADLs on the SIS-16.[59] Caregivers of Veterans who had either embolic or thrombotic strokes are included because there are no previous studies that indicate a differential impact of stroke type on caregiver outcomes. Similar to Grant et al.,[24] we will not limit the study to caregivers of first-time stroke survivors. Studies have found that there is a relatively high incidence of stroke occurrence and that subsequent strokes may be more severe and cause greater stress and depression than first strokes.[30] Stress will be measured by the Perceived Stress Scale. Hispanic/Puerto Rican ethnicity, Internet

access and ability will be determined by caregiver self-report. Exclusion criteria*:* We will exclude caregivers who are managing end-of-life issues (stroke survivors are likely to die within five months following discharge) Life expectancy will be determined by reviewing the CPRS records and conferring with our physician team members.

Recruitment and enrollment procedures: Recruitment and enrollment procedures are guided by procedures that have been used successfully to enroll caregivers in our pilot project and other caregiver studies. Recruitment procedures will be implemented during the second half of Q1, year 01, and continue through the end of year 05.

VACHS recruitment site procedures: We will employ four methods for identifying potential study participants. 1) Every month, we will request a list of stoke patients with ICD9 codes (430.00 - 438.99) and/or ICD10 codes (160.0 - 169.98) from the Health Administration Service (HAS) to develop a list of potential participants by obtaining the names of Veterans in the VA CHS with a diagnosis of stroke based on the above ICD9 and ICD10 codes. We will request a full HIPAA Waiver for patient screening and record review to review patient CPRS records and verify diagnosis and identify next of kin. We will only include in our list of potential participants Veterans who have a documented next of kin. We will mail letters of invitation to potential study participants (caregivers of veterans post-stroke). The letter will explain that they are receiving the letter because they have been identified as a caregiver (next of kin; NOK) of a Veteran who had suffered a stroke and briefly explain the purpose of the study. It will also indicate that a member of the study team will be calling them within 7-10 days from the mailing date to verify the NOK listed on the CPRS record is in fact the Veterans' caregiver, offer more information about the study and find out if they are interested in participating in the study. If the listed NOK is not the Veterans' caregiver, we will not enroll them in the study. We will also let them know that upon receiving our phone call they can decline to receive any further information about the study and end the call promptly. 2) We will also identify potential study participants via clinician referral. During a visit to the clinic, VACHS's clinicians who work with Veterans with a stroke diagnosis ICD9 codes (430.00 - 438.99) and/or ICD10 codes (160.0 - 169.98) will inform potential study participants (caregivers) about our study and obtain verbal permission to have a member of our research team speak with them in person after their visit for recruitment purposes. The clinicians will share with the study coordinator the name of the potential participants who agreed to be contacted about the study. If an in-person recruitment meeting is not possible, the clinician will obtain written authorization to have a team member contact the caregiver/Veteran for recruitment purposes via telephone. 3) Finally, we will also accept referrals from the research staff of a study testing a similar English-language version of our intervention of potential participants who prefer to receive the intervention in Spanish. These potential participants will consent to be contacted by one of our study team members via telephone. A trained, fluent in Spanish-speaking member of our study team (either in Gainesville or PR) will then telephone any caregiver (next of kin) who expresses an interest in participating (i.e., gave permission to VACHS clinician to be contacted by member of the study team). 4) Participants can self-refer after receiving a referral postcard with study team contact information on it by a clinician.

James A. Haley Veteran's Hospital site recruitment procedures (these recruitment procedures were approved by the University of South Florida IRB (IRB#: Pro00039920): We will identify potential study participants via clinician referral. Clinicians in the VA will ask Veterans with stroke (ICD9 codes 430.0 -438.00 or ICD10 codes 160.0 -169.98) who are receiving care on their units or facilities and/or their caregivers if they are interested in talking to a research staff member about the study. The VA clinicians who care for Veterans with a stroke are busy and often rotate shifts, so the nurse recruiter will additionally review the VA's computerized record system (CPRS) to identify in-patient Veterans in order to assist the clinicians in locating potential participants. The nurse recruiter will review the minimum amount of information necessary to determine if the Veteran is admitted for new onset stroke. Once a Veteran is identified as having a new onset stroke, the nurse recruiter will notify a VA clinician involved in that Veteran's care either in person, by phone, or through encrypted e-mail. The clinician will then ask the Veteran and/ or caregiver if they are interested in talking to a research staff member about the study. If either the Veteran or caregiver is interested in the study, the nurse recruiter will contact the caregiver and/or Veteran (using contact information found in CPRS or provided by the clinician) to arrange times to meet or talk with the caregiver and Veteran. The nurse recruiter will explain the main study using a brief script and, if interested, obtain written permission for the main study staff in Gainesville or Puerto

Rico to contact the participant via telephone for recruitment. The written permission form will be shared with the main study staff. Participants can self-refer after receiving a referral postcard with study team contact information on it by a clinician or the nurse recruiter. We will request a HIPPA waiver for screening and recruitment.

Orlando VAMC recruitment procedures (these recruitment procedures were approved by the Orlando VA IRB (Study #1400648-1): CPRS consults at the Orlando VA for skilled nursing care, home health services, geriatric evaluation, and Home-Based Primary Care will be reviewed by Orlando study team members for the diagnosis of recent stroke (within the last year), documentation of a next of kin, a life expectancy of greater than 5 months, and Hispanic ethnicity. We will request a full HIPPA waiver for patient screening and CPRS record review to verify diagnosis and next of kin. Following the pre-screening CPRS review, the names and last 4 of these patients will be sent to the main study site team via encrypted email. The main study team will mail letters of invitation to these potential study participants which explain that they are receiving the letter because they have been identified as a caregiver (next of kin; NOK) of a Veteran who had suffered a stroke and briefly explain the purpose of the study. It will also indicate that a member of the study team will be calling them within 7-10 days from the mailing date to verify the NOK listed on the CPRS record is in fact the Veterans' caregiver, offer more information about the study and find out if they are interested in participating in the study. The letter will also let them know that upon receiving our phone call, they can decline to receive any further information about the study and end the call promptly.

Recruitment calls will be made to potential participants identified from either of the three sites through the procedures described above by trained, Spanish speaking study staff in either Gainesville or PR. In addition to explaining study purpose and procedures, during the recruitment phone calls we will screen potential participants for study eligibility. Since all study procedures (except clinicians who will ask in person to potential participants if they would like to receive a call to obtain more information about our study) will be conducted over the telephone, we will request a Waiver Documentation of Informed Consent for this study. However, we will utilize an Informed Consent written statement to inform interested and eligible participants about the purpose of the study, study procedures including that some sessions may be recorded, risks, volunteer nature of their participation, potential benefits, who to contact in case of questions or concerns, etc. The written statement will also be used to inform and obtain oral permission to record the interventions. Since we will be requesting a Waiver Documentation of Informed Consent, we will also request a Waiver of master List of Consent and Re-consent. We will track the reasons for caregivers who decline to participate; no patient identifiable data will be collected for this purpose. We will recruit participants for 36 months and anticipate enrolling 8 caregivers per month. Even though we have strict eligibility criteria (see above), we expect that at least 10% of the potential caregivers will be willing to participate and meet our eligibility criteria. To collect Veteran healthcare utilization data, we will request a full waiver of consent to conduct the chart reviews.

Randomization: Following baseline assessments, participants will be randomly assigned to one of the two arms. The randomization will be blocked to ensure balanced group membership across time. The block size will be determined by the statistician and will not be shared with the rest of the team. The statistician will develop the randomization scheme and share it with a research staff member. The research staff member will prepare opaque randomization envelopes and provide them to the project coordinator (PC). The interventionist will call the PC when a caregiver is enrolled to obtain the caregiver's group assignment.

Data collection procedures: Study personnel will follow a detailed, procedure manual, translated and adapted into Spanish from our previous pilot project, to collect the data. A data collector who is fluent in Spanish and has strong communication skills either in Gainesville or PR will be trained to conduct the assessments. Following enrollment and after going over the written statement script with eligible and interested study participants the data collector will contact caregivers at an agreed upon time to obtain demographic data and administer baseline survey questionnaires (see measures). To facilitate the collection of the baseline assessment, we will mail the demographic data form and questionnaires in advance for caregivers to read while the data collector asks questions and documents the caregivers' responses. We will also review the Veterans CPRS records and document the Veterans' age, gender, race/ethnicity, date/location/type of stroke, number of previous strokes, and resource use and any information related to the Veterans' care (treatments, medicines, patient and family education, case management, etc.). All caregivers who meet the study eligibility

criteria and who are still willing to participate after completing the baseline assessment will be randomized to the intervention group or standard care group. All participants will complete two post-tests; post 1 will occur at approximately 9-10 weeks after enrollment (or 1-2 weeks after completion of the intervention for participants in the intervention group), and post 2 will occur approximately 12-13 weeks after post-test 1. The post-test assessments will include the same tools used in the baseline data collection. In addition, at both post-tests we will ask caregivers to disclose any resources they may have used during the duration of the study. At the 12 week post-test assessment the data collector will also ask questions on the Bakas "Enactment" tool to obtain data concerning the caregivers' perceptions of the intervention. The data collector, who will be blinded to the group assignment of the caregivers, will telephone the caregivers to obtain the post-test assessments. We will obtain data on healthcare utilization since baseline assessment from the MCAS the Decision Support System National Data Extracts (DSS NDE) and the Non-VA Medical Carefee-basis files. Team members abstracting data from CPRS will be trained and inter-rater reliability testing will be conducted for all data collectors. We will conduct the assessments and intervention sessions at times that are convenient to the caregivers. All caregivers will receive reimbursement for their participation in the study.

Intervention

Participants in the intervention group will participate in 8 weekly telephone sessions with an interventionist. The telephone-based intervention consists of a problem-solving telephone support educational intervention led by a trained interventionist. The intervention's main objective is to reduce caregiver burden and depressive symptoms by teaching caregivers a creative and optimistic approach to solving caregiving related problems. The intervention will utilize the problem solving module and refer to additional information/tools on the Spanish RESCUE website (http://www.cidrr8.research.va.gov/rescue-espanol/). The information included in the intervention consists of: 1. Introduction, 2. Illustrative Example, 3. Individualized Practice Exercise, and 4. Summary.

The intervention is adapted from the intervention used in our previous pilot project and based on the work of Bakas et al.,[23] who conducted a successful 8-week telephone intervention which used support approach and a task skill-building kit (TASK). In this proposed project we will tailor our pilot intervention to be culturally relevant for a Puerto Rican population. The intervention was developed to reflect specific characteristics of the target population such as language, cultural values and norms, and degree of acculturation. To enhance the cultural relevance of the intervention, we will use findings from our previous projects and guidelines from authoritative sources [55] that recommend: 1) involving persons from the target population in all phases of the project (e.g., Advisory Consortium), 2) emphasizing themes that are valued by the PR culture (e.g., family, religion, self-reliance), 3) assuring that the language and wording of on-line information is low-literate and appropriate by enlisting services of certified translators and Spanish-speaking experts, and 4) conducting the intervention and assessments by hiring research staff members (i.e., interventionist, data collector) who are Hispanic, fluent in Spanish, and knowledgeable about the PR culture. Research consistently shows that matching interventions to the individual needs of participants is more effective in engaging adults and modifying behaviors than prescriptive approaches,.[16] Other studies underscore the benefits of interventions and programs that are tailored to a specific race/ethnic populations.[55]

The intervention is described in detail in the table below. Based on prior studies, we anticipate that the calls will last between 45-60 minutes. However, the length of the calls will vary depending on the needs of the caregivers. We will document the length of the calls and adjust for this dose-response effect in the analysis. 10% of participants will have an intervention session recorded for quality assurance and training purpose. No session will be recorded without first informing the participant and obtaining their oral consent for the recording (see fidelity considerations below).

Telephone/Internet Intervention: Topical Content

Topic 1: <u>Introduction</u> Tour of the Spanish RESCUE Website and Orientation to the Problem-Solving Method (Session 1)	<u>Step one:</u> The interventionists will establish rapport with an "ice breaker" by asking the caregivers to talk about their families and what they enjoy doing at home. <u>Step two:</u> The interventionists will review the content in the RESCUE workbook that the caregivers will have received in the mail. On the front of the workbook will be RESCUE stroke caregiver website logo, the URL, and the telephone # of the VA National Caregiver Support Line. Inside, the workbook will be the following: 1) directions for using the unique URL to access various materials on the RESCUE website, 2) details of the study with the name/phone numbers of the PI and PC, 3) calendar with the mutually-agreed dates and times for the intervention sessions and for the post-test assessment , 4) problem-solving diary, 5) copy of the written statement , 6) summary of the steps of the problem-solving approach for easy reference when the caregivers are away from their computers, and 7) a brief note thanking them for their participation accompanied by a motivational message to keep updating their plans. The interventionists will emphasize that the caregivers should only access the RESCUE website using their unique URLs, so we can track usage and gather study statistics. <u>Step three:</u> The interventionists will tell the caregivers to log-onto the RESUCE website following directions in the workbook. The interventionists will give a tour of the various features on the RESCUE website as the caregivers simultaneously navigate and explore the website. <u>Step four:</u> The interventionists will direct the caregiver to click on and open the problem-solving module (available on RESCUE website). Similar to how teachers use power-point presentations for classroom instruction, the interventionists will use the module to teach the problem-solving method. <u>Step five:</u> The interventionists will discuss the basic premises of the problem-solving approach. Problems are successfully handled by developing a **<u>C</u>reative** and **<u>O</u>ptimistic** way of thinking. The **<u>P</u>roblem-solving** approach is effective and involves the following steps: 1) identifying & defining problems; 2) prioritizing problems; 3) selecting the highest priority problem; 4) gathering **<u>E</u>xpert information**; 5) setting realistic goals; 6) listing all possible solutions; 7) choosing the best solution; and 8) evaluating the plan. <u>Step six</u>: Prior to moving to the next part of the module, the interventionists will ask scripted questions to determine the caregivers' understanding and will clarify information as needed.
Topic 2: <u>Illustrative Example</u> How to use the problem-solving approach and the RESCUE website to address a common caregiver problem – STRESS & DEPRESSION (Session 2)	<u>Step one:</u> The interventionists will next illustrate how to apply the problem-solving method. To accomplish this, the interventionists will ask the caregivers to open the factsheet, titled "Caregiver Stress and Depression" on the website and read along as they discusses the key points. We chose "Caregiver Stress and Depression" as an illustrative topic because our previous research has shown that over 45% of caregivers of Veterans with strokes scored above the clinical cut-off for depressive symptoms.[55] All RESCUE website factsheets are organized in the COPE framework and include: 1) common signs/symptoms that caregivers should look for, 2) information that there are effective treatments, 3) helpful tips, and 4) information on when and where to seek emergency help or when to call their healthcare provider. In addition, there is a brief set of questions that caregivers can answer to assess their own level of stress. <u>Step two:</u> The interventionists will next illustrate how caregivers can use the RESCUE website and problem-solving approach to handle stress and depression. For example, the interventionists will use the module and discuss the following: 1) potential causes of stress (e.g., no time for self, disruptive behavior of survivor), 2) setting realistic goals (e.g., allowing one hour each day to do something fun), 3) where to find information on all possible solutions to reach the goal (e.g., RESCUE factsheets "Getting Help" "Taking a Break from Caregiving," and "Additional Resources"), 4) choosing the best solution, 5) evaluating the plan <u>Step three:</u> Throughout the instruction, the interventionists will emphasize the importance of having a positive attitude, state that most caregivers experience depression/stress and that there are effective strategies or treatments available. At designated intervals, the interventionists will ask scripted questions to assess the caregivers' understanding and allow time for questions and explanations.
Topic 3: <u>Individualized Practice Exercise Session</u> Developing a Personalized Problem-Solving Plan	The interventionists will assist the caregivers in developing their own personalized plans. <u>Step one:</u> The interventionists and the caregivers together will identify all potential problems. To accomplish this step, the interventionists will use motivational interviewing[56] and encourage the caregivers to talk about their uncertainties and what problems they expect to face when their survivors go home. The interventionists will use information learned from the Veterans' health record to help caregivers identify problems. As needed, the interventionists will review the list of 45 topics/factsheets that are on the RESCUE website to trigger identification of problems. <u>Step two:</u> Caregivers will use the "RESCUE workbook" that includes a "problem-solving diary." The caregivers with guidance from the interventionists will use the diary to write down all their problems, prioritize problems, and identify the most troublesome problem. This problem-solving diary can be accessed and printed from the RESCUE website.

(Sessions 3 - 7)	Step three: The caregivers will read and discuss the factsheet (s) on the RESCUE caregiver website related to their most troublesome problem. With guidance from the interventionists, the caregiver will use the problem-solving diary to list realistic goal(s), possible solutions, best solution, and evaluation plans.
Topic 4: Summary of the Problem-Solving Method (Session 8)	The interventionists will summarize the content from the previous sessions and answer questions for clarification. The interventionists will encourage the caregivers to use the problem-solving approach and diary to address future problems. The interventionists will review log-on procedures (see details under "workbook" section) and how to navigate and find information and tools on the RESCUE website.

RESCUE Problem-Solving Diary Form: As noted in the table, the interventionists will collaborate with the caregivers in writing their personalized plans on a problem-solving diary. The form provides spaces for the caregivers to list and prioritize their problems and spaces for their goals, solutions, and evaluations. Caregivers will be instructed to go to the RESCUE website and print the blank diary forms as needed. We will mail workbooks to caregivers in the intervention group.

Standard Care Group: Will consist of caregivers who receive the care that is normally provided to stroke caregivers of Veterans. No changes will be made in the care that these caregivers normally receive. We will carefully document all follow up care (after Veterans' discharge) by reviewing the Veterans' record and asking caregivers to discuss any care they or their Veteran received. According to clinicians who provide services in the VACHS to Veterans with stroke and their caregivers, once the Veteran is discharged to the home, caregivers do not normally receive any follow-up telephone or transitional care unless they are enrolled in the Telehealth or home-based primary care programs (study exclusionary criteria). Stroke caregivers may only receive contact information for stroke clinicians and some may receive informational brochures or an invitation to participate in an open support group led by the psychologist in the rehabilitation clinic. At the end of the study, we will ask caregivers in the standard care group about resources used throughout the study.

Fidelity Considerations: We will make special effort to enhance, maintain and track treatment fidelity. We will use recommendations of Borelli, et al.,[63] and Burgio et al.[64] as our guide. We will adapt the standardized manuals and protocols that were used in our pilot project. This manual will provide step-by-step guidelines on recruiting/enrolling participants, implementing the informed consent process, in conducting the intervention and implementing the data collection procedures. We will provide extensive training to all of our team members. Dr. Freytes will periodically observe the interventionists conducting the telephone intervention. We will have monthly meetings with the interventionists to discuss implementation of the intervention and discuss protocol issues. To monitor the delivery of the intervention we will audio-tape (digitally record) 10% of the telephone sessions throughout the duration of the project with oral consent from the study participants (Consent will be obtained orally because we are requesting a HIPAA Waiver and Waiver of Documentation for Informed Consent). We will also record the number of minutes spent with each participant and to keep detailed notes of any deviations from our study protocol. The PI and data collector will review these audiotapes and evaluate adherence to study protocols, noting all deviations on a form. Feedback will be provided as needed.

Similar to Bakas, et al.,[23] we will evaluate "enactment" by asking caregivers (in intervention group) after completion of the study (at 12 week post-intervention time-point) to rate the amount of information and contact they received during the 8-sesssion intervention, how much they used the skill-building strategies and the RESCUE website, how helpful the intervention was and whether their problems were resolved.

Measures: We carefully chose measures that had been translated into Spanish, used in previous research studies, had good psychometric properties, were easy to administer, and were relatively short in length to reduce participant burden. Most of the measures selected were tools that our team members had used previously in other studies. In the table below, we describe the measures we will use for screening caregivers to determine their study eligibility as well as the measures related to testing hypotheses 1-3. Our other measures are described in later sections. See proposed instruments below.

Instruments/Measures		
Concept – Instrument/Measure	**Description of Instrument/Measure**	**Mean Time**

Screening Instruments		
Veterans' Activity of Daily Living – Stroke Impact Scale	This tool consists of 16 items that measure patients' abilities to perform self-care tasks (e.g., feeding, bathing, personal toileting, dressing, chair/bed transfers, ambulation). The tool has been used extensively in studies of outcomes of care in rehabilitation settings. We will screen caregivers by asking them if their stroke survivor needs assistance performing the tasks.[53]	**<4 minutes**
Perceived Stress Scale – PSS4 (Spanish)[60]	This is a 4-item 5-point Likert scale ranging from never (0) to very often (5) used to evaluate level of perceived stress. It is ideal to be used as a screening tool for caregiver stress prior to study enrollment and the shortened 4 item version has good psychometric properties.	**<2 minutes**
Caregiver Measures		
Demographic and Health Characteristics	Age, sex, marital status, educational level, race/ethnicity, relationship to stroke survivor will be collected by self-report.	**<5 minutes**
Depressive Symptoms - Center for Epidemiologic Studies Depression (CES-D 20, Spanish Version) [61]	CES-D is a 20-item, 4-point Likert scale ranging from never (0) to most of the time (3). It is assesses depressive symptoms and is not a clinical measure of depression.[61] Scores range from 0-60 with higher scores indicating greater depressive symptoms. It has been used in numerous studies with caregivers and has good reliability and validity. [62]	**<8 minutes**
Problem-Solving Abilities - Social Problem-Solving Inventory - Short Form (SPSI-SF)[113]	*The SPSI-SF is a 25-item tool consisting of five subscales (positive problem-solving orientation, rational problem-solving orientation, negative problem-solving orientation, impulsivity or carelessness style problem solving, avoidance style problem solving). A total score or separate scores can be obtained. Scores range from 0-20 for subscales. The internal consistency of the tool is good.87 We chose this tool because it has been used in previous, stroke caregiver studies, it has good psychometric problems, and it is briefer than the original 52-item tool.[114]*	**<12 minutes**
Self-Efficacy – Caregiver Self-Efficacy(Spanish)[63]	This is a 15-item measure of caregivers' judgments regarding their ability to perform effectively in specific, caregiving settings. The measure is composed of two sub-scales: Caregiver Self-Care Efficacy and Caregiver Problem-Solving Self Efficacy. Respondents rate their level of confidence for each item on a scale from 0 to 100. The tool has established reliability and validity.[64] We selected this self-efficacy tool because it was developed specifically for caregivers and has two subscales that are related to our problem-solving framework.	**<5 minutes**
Caregiver Burden –Zarit Burden Interview (S-ZBI, Spanish Version) [65]	This is 22-item instrument that has been reduced from the original, full 29-item instrument.[65] The 22-item version was correlated with the full version with correlation coefficients ranging from 0.92 to 0.97. The ZBI measures the degree of burden felt by caregivers. Items fall into five categories (health, well-being, finances, social life, relationship with impaired person). The instrument was originally developed to measure burden of caregivers of patients with dementia. However, the S-ZBI has been used in stroke caregiver studies. We selected this tool above other burden instruments because it is brief, easy-to-answer, measures both subjective and objective burden, and is a widely-used.[65, 66]	**<12 minutes**
Quality of Life – VR-12 RAND 12-Item Health Survey v2 (Spanish Version)[67]	The VR-12 is a multi-use, self-administered health survey comprised of 12 items. The instrument is primarily used to measure health related quality of life, to estimate disease burden and to evaluate disease-specific benchmarks with other populations. It uses of five-point response choices for the questions that comprise two scales: "Physical Health Summary Measure" and "Mental Health Summary" Measure". The VR-12 has good psychometric properties.[66]	**<10 minutes**
Problem Checklist	This instrument was created for the study. The instrument asks caregivers to indicate what problems they or their Veterans are dealing with.	**<5 minutes**
Veteran Measures		
Demographic and Health-related variables	Age, gender, race/ethnicity, facility from which Veteran received stroke related services (i.e., hospital, community living center, rehabilitation), length of rehabilitation, date/location/type of the stroke, and number of previous strokes will be obtained from CPRS review.	**N/A**
Functional Abilities – Stroke Impact Scale[68] (Translated)	The Stroke Impact Scale is comprised of 16 short questions and is used assess physical function of patients with stroke.	**<2 minutes**

Healthcare Utilization – Unintended hospital bed days of care, number of emergency room visits, number of unscheduled clinic visits	Data on healthcare utilization will be obtained from the CPRS records. We decided to measure healthcare utilization in CPRS rather than obtaining similar data that could be found in the Patient Treatment File (PTF) after communicating with staff in the VA Office of Quality Improvement (OQI). The data collector will record the number, dates, and the reasons for all healthcare visits (hospitalizations, ER, clinic visits). Drs. Martinez-Diaz *and Jimenez-Davila* will review the RA's notes and through consensus decide on which visits were unintended and unscheduled.	**N/A**
Cost Data – See Aim #3	We will obtain the standard cost data from the VA Managerial Cost Accounting System (MCAS) (formerly DSS) National Data Extracts (NDE) (total, nursing, pharmacy, laboratory, etc.) by fixed and variable categories and the VA-fee basis files.	**N/A**
	Measures to check fidelity (see section on Fidelity)/internal consistency	
Enactment (Translated)	We will use Bakas, et al.,[20, 70] survey and ask caregivers in the intervention to rate the amount and value of the information they received (see section on fidelity).	**<5 minutes**
Used Resources Survey	*We will ask caregivers to disclose any resources they used to help them during the duration of the study.*	**<3 minutes**

Data Analysis: Sample Size and Power Analysis: The sample will consist of 227 caregivers. Our pilot data showed 3.1 points reduction in CESD with a within group standard deviation of 8.9. Assuming such an intervention effect size on depression, 145 subjects per group would achieve 80% power to detect the difference at a 5% significance level. The sample size of 145 per group (intervention vs. standard care) was selected to account for the occurrence of a (10%) dropout rate. The 10% drop-out rate is a conservative estimate of attrition and is based on our pilot study led by our Collaborator Dr. Uphold. The assumed effect size and variability were deemed reasonable based on a number of other sources. Radloff [66] described large changes pre and post treatment in a clinical setting, with depression from time of admission to 4 weeks post decreasing 20 points for "recovered" patients and 12 points for "still ill" patients. Grant et al.,[24] in a study of a telephone intervention to family caregivers of stroke caregivers, found an estimated 1 month treatment effect of 3.1.

Aim #1 - Hypothesis #1 (primary): Stroke caregivers who receive the intervention will have less depressive symptoms at 1 and 12 weeks post-intervention compared to stroke caregivers in the standard care group. Our primary endpoint is the caregiver depressive score. The focus of the primary analysis will be to examine the effect of the intervention based on "intention to treat." Data from all the participants will be part of the primary analyses regardless of actual number of completed sessions. As an exploratory study element, we will assess compliance and attempt to determine its effect on study results. For the primary analysis, the general linear mixed model for repeated measures will be used to model the follow-up depression times (1 and 12 weeks post-intervention), adjusted for baseline scores as fixed effects. Let yij be the depression score for person i at time j, then basic fixed effects model will be:

$$E(yij) = \beta0 + \beta1Baselinei + \beta2Timeij + \beta3Groupi + \beta4Groupi*Timeij$$

with covariates for baseline depression (Baseline), time (Time=0 for 1 week, 1 for 12 weeks post-intervention), and group (0 if active control, 1 if intervention). In order to control for possible chance sample imbalances resulting from randomization, the model will include covariates for baseline prognostic factors (e.g., discharge from hospital, community living center, or rehabilitation facility; caregivers' relationship to Veteran; number of previous strokes among Veterans, etc.), deemed to have significant relationships with response and groupwise imbalances. Thus, analyses will be able to compare the groups on the measure of interest while controlling for these factors. The primary outcome of interest will be the immediate post-intervention effect at 1-week post-intervention with the 12-week post-intervention as a secondary outcome. This will be tested based on linear contrast $\beta3+\beta4$ at two-sided 0.05 level. All tests will be performed at the $\alpha=0.05$ significance level. The correlation among observations from the same person will be accounted for through the inclusion of a random person effect into the mixed model analysis.

Aim #2 - Hypotheses #2 (secondary): Stroke caregivers who receive the intervention will have superior outcomes (i.e., less burden, better problem solving skills, greater self-efficacy, and better HRQOL,) at 1 and 12 weeks post-intervention than caregivers in the standard care group. The analysis plan for Hypothesis 2 will closely follow the plan outlined above for Hypothesis 1 for each secondary outcome of interest.

Aim #3 - Hypotheses #3 (secondary): Veterans whose caregivers receive the intervention will have better functional abilities at 1 and 12 weeks post-intervention and less healthcare utilization at 12 weeks post-intervention measures compared to Veterans whose caregivers are in the standard care group. Since the score for the Stroke Impact Scale can be treated as a continuous, the analysis plan follows exactly as above in Hypothesis 1. Since the Veteran healthcare utilization measures are count data, the models will be a somewhat different. There will be no baseline covariates added to the model, as they are not applicable to the count measures. Analyses will be conducted for the period following baseline to 12 weeks post-intervention assessments. Generalized linear models for count data (such as Poisson or negative binomial regression models, depending on the presence or absence of over-dispersion) will be employed to determine the group effects on healthcare utilization. Log link functions will be employed on the count data to create the correct distributional data forms. As before, in order to control for possible sample imbalances resulting from randomization, all models will include covariates for prognostic factors deemed to have significant relationships with response and significant groupwise imbalances. Thus, analyses will be able to compare the groups on the measures of interest while controlling for these factors.

Handling of Missing Data*:* In our pilot study we had little missing data with a missingness rate between 0 and 10% depending on measure. Our data collectors will receive extensive training on interviewing and how to politely encourage participants to answer all questions on research instruments. Moreover, the measures quality of life have methods for imputing missing scores on individual items. In the event of drop-outs, the missingness mechanism will be explored. If the assumption of Missing Completely at Random (MCAR) or the common assumption of Missing at Random (MAR) are plausible, then little change to the analysis plan is necessary. The mixed models analysis using direct-likelihood approaches will be unbiased and appropriate. Mixed effects modeling requires large samples, but does not require full data on each subject.[78,79] Study efficiency (power) will of course be affected by the smaller amount of available information, thus we have inflated the planned recruitment sample size. If the missingness assumptions are not plausible, then Missing Not at Random (MNAR) techniques will be employed [80,81] and analysis results will be interpreted with caution.

Research Design and Methods Overview (Aims # 4)

Aim #4: to determine the intervention's budgetary impact. Research Question: **What are the budgetary impact costs associated with the intervention and how do these costs compare to the costs of standard care?** Data collection & measures: We will obtain cost data in the VA Managerial Cost Accounting System (MCAS) (formerly DSS) National Data Extracts (NDE) (total, nursing, pharmacy, laboratory, etc.) by fixed and variable categories and the Non-VA Medical Care (formerly fee-basis) files, supplemented by the direct measures (i.e., microcosting) of the intervention as necessary. The budgetary impact of this intervention will consist of two parts: (1) the incremental cost of the intervention itself over and above usual care, and (2) the impact of the intervention on healthcare utilization. To determine the incremental costs of the intervention, we will use micro-costing techniques (viz., direct measurement and pseudo-billing)[82] combined with average costing [83] to determine the average staff time, wage, space, and equipment costs associated with the intervention. We will pay particular attention to capturing the full operational costs of the intervention to include items such as the costs and amortization of equipment, network devices, all associated maintenance costs. Simultaneously, we will take care to exclude any costs associated exclusively with our research (e.g., resources expended solely for purposes of research data collection) so that our results will reflect accurately those costs likely to be incurred in a purely clinical, non-research setting. The micro-cost estimate for the intervention will use the average elapsed time of the sessions along with an estimate of the average national wage [84] of the type of clinician most likely to deliver
the intervention in the field.

To determine the intervention's impact on the costs of healthcare utilization, we will rely on ISPOR's 2014 budgetary impact analysis guidelines.[85] Data on VA utilization costs will be obtained from MCAS the Decision Support System National Data Extracts (DSS NDE) [86] and the Non-VA Medical Carefee-basis files.[87] We will tabulate all costs from these sources for study enrollees over the period of the study, calculate the difference between intervention and standard care average costs and test for the statistical significance of this difference using the Z-score method proposed by Zhou.[88] The final step in determining the budgetary

impact of the intervention will combine parts 1 and 2 to determine the complete impact of the intervention on the VA budget. While the incremental cost of the intervention (part 1) will be positive, the impact of the intervention on the costs of VA utilization will likely vary directly with the impact of the intervention on VA utilization.

Research Design and Methods Overview (Aims # 5)

Aim #5: to determine the acceptability of the intervention and the facilitators and barriers that Spanish-speaking stroke caregivers perceive when participating in the study.

Research question #1: **What are the caregivers' perceptions of the value, strengths/weaknesses of the intervention and what facilitators/barriers did they identify with the intervention?**

We will conduct in-depth, qualitative interviews with caregivers from the intervention group. Sample (size, recruitment, enrollment): Our sample will be 8-12 stroke caregivers. Sample size considerations in qualitative studies include the purpose/goal of the study and the depth of data needed to reach theoretical saturation and adequately answer the study question.[89,90] Typically, 8-12 participants are needed to reach theoretical sample.[91] We will select a purposive subsample of 8-12 caregivers who participated in the intervention arm of the project. To get a diversity of caregiver perceptions, we will use a maximum variation sampling technique[91] to select caregivers with high, medium, and low scores on the CES-D depression scale. We will sequentially enroll the caregivers following their completion of the intervention until we have the desired sample size. Data collection: The Spanish-speaking data collector will conduct the interviews over the telephone using an interview script. The data collector will ask caregivers' their perceptions of the value, strengths/weaknesses of the intervention, and about the barriers and facilitators in participating in the intervention. All qualitative interviews will be digitally recorded, transcribed verbatim, and validated by another Spanish-speaking member of the research team. Data analysis: We will employ a mixed methods, explanatory sequential design (i.e., collecting and analyzing quantitative and qualitative data in two consecutive phases). Quantitative and qualitative methods complement each other and when used in combination, they provide a more comprehensive explanation of the research question.[91] In the qualitative interviews, we will obtain information on the caregivers' perceptions of the intervention. The quantitative data obtained from the Enactment Tool (Bakas) in which the caregiver rates aspects of the intervention, combined with qualitative data, will help us understand which aspects of the website and intervention were most beneficial and how the perceptions about the strengths and weaknesses of the various parts of the intervention varied between caregivers with different depression levels. To assure rigor of our methods, we will adhere to recommendations of Lincoln and Egon[92]: 1) use multiple sources of data, 2) ask team members to independently analyze the data, 3) meet regularly to discuss coding and interpretation of the data, 4) maintain an audit trail of decisions made during the analysis, and 5) review field notes of the interviewer to identify factors that may influence data quality. Team members will begin by reading the first two caregiver transcripts to identify initial concepts and codes. Then, they will enter data labels and codes into NVivo, a software program that our team has purchased and used in previous projects. NVivo compiles data related to a code, groups related data, and provides a print out of all data for each code to assist further analysis. The team members involved in the qualitative analysis will regularly interact with other members of the research team to discuss and ultimately arrive at consensus about coding schemes. A final coding framework and codebook will be created. As the interviews are completed, we will continue coding and use an iterative, inductive process to generate categories and themes based on repetitive patterns in the data. Throughout the analysis, we will write memos in NVIVO about data analysis decisions. Common themes with selected, supportive quotations will be presented. We will triangulate the findings from the quantitative and qualitative data to interpret the findings. This analysis will answer our research question, help us disentangle which aspects of the intervention did or did not support our hypotheses, and provide data to refine methods for future testing and roll-outs.

Compensation: Participants will be compensated for their time and effort. Participants in both intervention and standard care group will receive $15 for their time and effort for every data collection they complete for a total of $45 if they complete all three. Twelve participants from the intervention group will receive an additional $15 each for completing an individual interview. Compensation will be process either at the completion of the study or when a participant withdraws form the study.

The US Treasury requires that all participants in this study receive their study related compensation as an electronic transfer of money directly to their bank accounts. If caregivers are already set up to receive VA benefit

payments electronically, then there is nothing that they need to do. If they are not already set up to receive VA benefit payments directly to their bank accounts then they will need to set up an account to receive an electronic funds transfer from the VA. Study staff will provide information on this process, if needed.

Caregivers' compensation for participation in this research study will come from the VA Finance Office, who will issue payment to them by direct deposit to their bank account.

The participants may be responsible for paying income taxes on any payments provided by the study. Any payment made to caregivers on a VA-funded study, regardless of amount, has to be reported to the Internal Revenue Service (IRS) because the payment system cannot distinguish payment from reimbursement for expenses.

Data Privacy, Confidentiality, and Safety: The research team will protect the privacy of all study participants enrolled. These safeguards include conducting all the telephone interviews and data collection calls in a private and secure area. To safeguard the identity of study participants, immediately after enrolling in the study each participant will be assigned a subject code, starting with 001, that will be used instead of the participant's name. However, the names will be linked to the subjects' code. All data files in paper format will be kept in a secured location to be determined by the ACOR of R&D under double locks- a locked filing cabinet in a locked office and stored in password-protected computer files on a secure VA server only accessible to authorized members of the research team. All study related documents containing PHI will de de-identified by using the subjects' assigned code. No subjects will be identified by name in any reports. Only aggregated data will be submitted. Subjects will not be identified by their names on study documents, only by their subject code. A log for accounting disclosures will be kept as per Privacy guidelines. Electronic Data will be identified using subject's code and will be stored in an electronic folder in a restricted password protected folder under the link\\\Vhasajsvr6\group Folders\Research Active Studies\Freytes, Ivette Magaly\Freytes, Spanish Online & Telephone Intervention for Caregivers of Veterans with Stroke in a VA network drive that undergoes regular backups. No data will be stored in the PC hard drive. The data collection, data flow and management will be as outlined in the proposal. A mobile device, a PHILLIPS-LFH 9600 digital pocket memo w/speech pro recorder will be used in this study to record the interviews. Digital files will be deleted from the recorded immediately after downloading them to the protected folder in the VA network (see above). These recorders are VA encrypted voice recorders. This recorder will be kept in a cabinet double locked in the PI office. A track of all sessions recorded will be maintained. The storage and disposition these recordings will be as per Record Control Schedule guidelines.

This study involves non-veterans subjects who will be enrolled in the study. Because we will not be providing any medical care as part of this educational study, we will document study participants' (i.e, Veterans' caregivers) participation on this study on their corresponding Veterans electronic chart. The Notice of Privacy Practice will be provided to the non-veterans subjects via mail and they must return the VA form 10-0483 signed to the PI or delegate.

This study does not involve use of any software that is not already in use within the VACHS. A web application (VA RESCUE website) will only be used to download educational information). All data will be treated confidentially and will be kept in locked files in a double locked offices at the office assigned for this study by the Research Service].

Data will not be removed from the VA protected environment. Only electronic data will be shared among members of the research team in Gainesville and PR. All paper study documents will be scanned into electronic format and shared between members of the research team via the study shared folder or encrypted VA email message. The study will share the electronic data via the assigned electronic study folder in a VA protected shared drive behind the VA firewall. Original documents and data derived from this research will be kept in an office to be assigned by the ACOS of R&D to securely sore study documents behind double locks. Once the study is completed and regulatory audits have been completed, all data/documents will be returned to the

Research Administrative Office for disposition. The destruction of identifiers and records will be in accordance with VA Record Control Schedule.

If any of the study staff discontinues his/her participation in the study, the IRB will be notified by completing a "Change in Research Staff" document and his/her access to the study data will be removed. Any incident regarding information security and/or privacy will be reported in accordance with VA policy and procedures in place for reporting incidents as described in VACHS IRB SOP and ISO SOP.

7. Possible Discomforts and Risks:

Study risks are minimal. The participants may become tired during the telephone intervention sessions. Breaks will be provided if needed. Also, some caregivers may feel uncomfortable or become stressed while discussing stroke-related issues that are affecting them. The interventionist(s) conducting the telephone interviews will receive extensive training and will have experience in assessing and caring for adults who have stress.
To further protect study participants from any risks, our intervention will be conducted by trained interventionist(s) with experience in conducting mental health assessments and counseling. We will hire an interventionist knowledgeable about caring for individuals and family members who are in stressful situations, such as involved in caregiving. Training of the interventionist(s) will include independent readings, didactic instruction, and role-playing. Throughout the project, the investigators will observe/listen to the interventionist(s) conducting the interventions and evaluate his or her fidelity to the protocol, decision-making skills, and how they handle the caregivers' problems and stress. If needed, select intervention sessions will be audio-recorded to facilitate fidelity checks if the participant agrees. Feedback and additional training, if needed, will be provided. The interventionists will make every effort to minimize the potential risks by maintaining a professional, pleasant manner and allowing caregivers to ask questions and discuss feelings. In the intervention arm, the interventionist(s) will assist the caregivers in solving their problems using the problem-solving approach. The interventionist(s) will not provide advice, but rather will advise caregivers to access information on the Caregiver Family Alliance website (www.caregiver.org) for managing problems. In the event that the interventionist(s) assess that caregivers in any arm of the study are experiencing unmanageable, but not severe stress or depression, they will advise the caregivers to call their assigned VA social workers and primary care clinicians (MD, ARNP, PA). The interventionist(s) will also give the caregivers the phone number of the VA Caregiver Support Line. If the interventionist(s) assess that the caregivers are in severe stress, depression or crisis, or have serious changes in their health, the interventionist(s) will call either one of the study physician Co-investigators or the caregivers' VA primary care social workers and VA primary care healthcare providers (MD, ARNP, PA) immediately or 911 depending on the circumstances. If any abuse or neglect is suspected, study personnel will follow established procedures by oversight agencies including VHA as directed in the VA Handbook 1050.01 to contact the Office of Inspector General, Office of Investigation, as well as the IRB and the state of Abuse Hotline. We will train all study personnel to protect against all foreseeable risks. Team members also will be trained in monitoring and reporting adverse events.

8. Possible Benefits:

There are no direct benefits from this study. Participants may benefit from learning problem-solving techniques if assigned to the study intervention. These problem-solving techniques may help them adjust to their roles as caregivers. Also, participants may benefit from using the information, tools, and resource lists on the RESCUE stroke caregiver website. Possible future benefits are identification of best practices for improving transitional care for informal caregivers of Veterans post-stroke.

9. Conflict of Interest:

There is no conflict of interest relating to the Investigators and this protocol beyond the professional benefit from academic publication or presentation of results.

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