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14. ABSTRACT The objective of this research was to develop and pilot a computer-based self-management (SM) program (the Next Steps Program) for reducing secondary conditions and improving function following major lower limb trauma. The intervention builds on widely accepted SM programs developed for persons with arthritis as well as components of a face-to-face SM program for civilians with long-standing limb loss. It was necessary, however, to tailor the content and delivery of these programs to better accommodate the needs of a young, acutely-injured population. The program consists of three overall components: 12 narrated, interactive Flash lessons; telephone and web-based support services (including weekly facilitated on-line chats; and access to online resources. A website (www.nextstepsonline.org) provides access to the lessons, support services and online resources. Results of the pilot study (n=30 civilian trauma patients) indicate high satisfaction with the program and participants report having benefitted from Next Steps. Preliminary data suggest that outcomes are positively impacted by the program. Computer-based self-management programs for the acutely-injured will provide a much-needed adjunct to the orthopaedic care now available and contribute to a comprehensive trauma would provide injured soldiers with an ongoing mechanism of support as they transition from inpatient rehabilitation to the ma management program to improve long-term outcomes and quality of life. A military version of the Next Steps program community – whether that be in the military or civilian sectors.					
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1. INTRODUCTION

The objective of this research was to develop and pilot a computer-based self-management program (heretofore referred to as the NextSteps Program) for reducing secondary conditions and improving function following major lower limb trauma. The intervention builds on widely accepted self-management programs developed for persons with arthritis as well as components of a face-to-face self-management (SM) program for civilians with long-standing limb loss. It was necessary, however, to tailor the content and delivery of these programs to better accommodate the needs of a young, acutely-injured population. Specific needs not typically addressed in the existing programs include the management of acute anxiety and posttraumatic stress disorder (PTSD) and the maintenance or acquisition of employment or return to active duty. Specific aims of the project were:

- 1 To pilot the face-to-face self-management program for persons sustaining major limb trauma and refine the intervention based on feedback;
- 2 To develop an online version of the self-management program for persons sustaining major limb trauma (heretofore referred to as NextSteps);
- 3 To evaluate the feasibility and acceptability of the NextSteps program in 12-15 civilians treated at a large, Level I trauma center; and
- 4 To engage military colleagues and service members as advisors to assist us in developing a strategy for modifying the content of the NextSteps Program for service members and veterans.

If shown to be efficacious, computer-based self-management programs for the acutely-injured will provide a much-needed adjunct to the orthopedic care now available and contribute to a comprehensive trauma management program to improve long-term outcomes and quality of life (QoL). A military version of the SM program would provide injured soldiers with an ongoing mechanism of support as they transition from inpatient rehabilitation to the community – whether that be in the military or civilian sectors.

2 BODY

Despite the substantial improvements made over the last two decades in orthopedic trauma care, severe leg injuries often result in poor functional outcomes for otherwise young healthy individuals with many years of productive life yet to live. The Lower Extremity Assessment Project or *LEAP* found that for many individuals undergoing reconstruction or amputation following limb-threatening leg injuries, disability remains high at two years following the injury (52% had Sickness Impact Profile (SIP)¹ Scores >10), and rates of return to work were low (50%).¹

¹ The SIP is a multidimensional measure of self-reported health status, consisting of 136 statements about limitations in 12 categories of function. SIP scores range from 0 -100. A SIP greater \geq 10 represents severe disability, and differences of 2 to 3 points reflect meaningful differences in function. SIP scores range between 2 -3 points for the general population.

The *LEAP* study further demonstrated that outcomes were more affected by the patient's economic, social and personal resources than by the initial treatment of the injury, specifically amputation versus reconstruction and level of amputation. In particular, it was found that patients who at baseline reported low self-efficacy, weak social support, and high levels of depression, anxiety, and pain were significantly more likely to have poor long-term outcomes. Other investigators have reported similar findings.²⁻¹³ These results strongly suggest that major improvements in functional outcome require interventions in the early post-acute phase of recovery that directly address patients' psychosocial needs and assist them in self-managing the multi-factorial consequences of their injury.

A significant body of research has shown that Self-management (SM) interventions based on cognitive-behavioral theory are particularly effective in increasing self-efficacy, reducing secondary conditions such as pain, anxiety and depression, and improving overall function and QoL.^{14, 15} Self-management incorporates the principles of cognitive-behavioral theory (CBT), which helps patients to (1) appreciate the relationship between their thoughts, feelings and behaviors and (2) to identify self-defeating patterns of thought and replace them with adaptive thoughts and behaviors to achieve better outcomes. Using CBT principles to develop alternative cognitive and coping approaches, SM interventions decrease maladaptive coping responses and increase self-efficacy and the individual's ability to self-manage medical and psychological problems.

These programs have gained widespread application with chronic conditions in which pain and disability are common. They have not, however, been broadly applied to younger, acutely-injured individuals. These programs can also be expensive to maintain and may have limited applicability for conditions that are less prevalent than arthritis and diabetes (as is the case with major limb trauma). As part of advances in telehealth, the use of telecommunications presents the opportunity to deliver multi-method, multi-media, interactive SM interventions to reach large numbers of individuals in a cost-effective manner.

Based on this background we sought to develop and pilot a computer-based self-management (SM) program (the NextSteps Program) for reducing secondary conditions and improving function following major lower limb trauma. In the next four sections we describe the results of this work

2.1 PILOTING THE FACE-TO-FACE NEXTSTEPS PROGRAM and IMPLICAITONS FOR ONLINE DELIVERY.

A first step in the development of the on-line program was to pilot the face-to-face NextSteps program and revise the intervention in preparation for transitioning to online delivery.

2.1.1 Piloting the Face-to-face Program. Prior to receiving the current research award, a face-to-face version of the NextSteps program had been developed. It relied heavily on the principles of two existing self-management programs: the PALS program and the JOBS program:

- Working with the Amputee Coalition of America the present investigators developed a SM program for amputees (regardless of underlying cause) called Promoting Amputee

Life Skills (PALS). PALS consists of 8 SM sessions delivered by trained, volunteer leaders. A randomized control trial (RCT) of 50 randomized groups (with 225 participants in each arm) showed those in the PALS self-management arm had significantly higher levels of self-efficacy and were less likely to be depressed or have functional limitations than those in the control support group at six month follow-up.¹⁶ A modification of the PALS program was developed and used at Walter Reed Army Medical Center to assist amputee patients in their recovery. This activity provided input into our recommendations for modifying NextSteps Online for use by military service members (See Section 2.4 of this report).

- Most existing SM programs (including PALS) have not integrated components that emphasize vocational or other pre-injury role function outcomes because individuals with chronic conditions tend to be older with an underlying condition that is expected to deteriorate over time. As persons with major limb trauma tend to be younger and actively engaged in employment or other non-vocational interests pre-injury, return to previous role function is often a high priority goal. In developing the NextSteps program we incorporated some of the principles of the JOBS intervention developed by Vinokur and colleagues.¹⁷ The JOBS program uses active teaching and learning to increase self-efficacy and prevent the negative effects of unemployment on mental health and well being. JOBS focuses on four areas: 1) enhancing self-esteem, 2) developing social skills for networking, 3) developing skills to contact potential employers and developing successful interviewing skills, and 4) inoculating against setbacks. A randomized clinical trial of JOBS showed significantly better employment outcomes in terms of increased monthly salary, increased levels of reemployment, as well as better mental health outcomes as measured by decreased depressive symptoms, decreased risk for major depression, and better role and emotional functioning for participants compared to controls at two year follow up.¹⁷⁻²⁰

Using these two programs as a starting point, we drafted the content and format of the face-to-face NextSteps program. We then used a participatory action research paradigm to conduct focus groups of survivors, their family members and providers to obtain content and logistical input to shape the program for pilot-testing. These patient and family groups consisted of patients and families recruited from University of Maryland Shock Trauma Center, INOVA Fairfax hospital and Vanderbilt University Trauma Center. Based on this input, the initial program consisted of eight, weekly 90-minute sessions with an additional booster session at 10 weeks.

Two pilot classes were then held at INOVA Fairfax hospital to assist in the refinement of the intervention materials and the delivery methods and determine the feasibility and acceptance of the face-to-face program. A total of 16 individuals participated in the two pilot NextSteps classes. The results of these two pilot classes indicated:

- The number of classes for face-to-face was acceptable; however, participants anticipated a shorter program of six weeks would be more attractive to potential participants.
- The length of each face-to-face class was acceptable and appropriate.

- The content was useful and appropriate. The focus on return-to-work or school was appropriate for a significant number of participants; however, consideration should be given to making these portions optional rather than including them in the core sessions.
- These classes should be for survivors only and not include family members. Consideration should be given to development of a parallel program for family members.
- Distance and other logistical barriers could limit participation in the face-to-face classes.

Training manuals for face-to-face NextSteps leaders and participant workbooks were revised based on the pilot and promulgated to ensure the integrity of the face-to-face program. National trainings have been conducted in collaboration with the American Trauma Society (ATS) to disseminate the face-to-face program. The face-to-face NextSteps is now part of the ATS Trauma Survivors Network (TSN) (<http://www.traumasurvivorsnetwork.org/>).



2.1.2 Preparing for Online Nextsteps: In preparing for the development of the online NextSteps program, input was obtained from a consumer advisory committee that consisted of patients, family members and professionals. These individuals are listed in the NextSteps website at <http://www.nextstepsonline.org/pages/credits>. In addition to the listed advisors and contributors, additional input was obtained from members of the ATS TSN Advisory Board and trauma professionals who serve military services members at Military Treatment Facilities (MFT) and civilian trauma centers. The advisory groups were particularly helpful to us in finalizing the topics to be covered in the online version, reacting to the proposed content of the lessons and recommending functionalities and format for the online program.

Recommendations resulting from this process were:

- Development of an online self-management program is the logical next step in an effort to improve access to self-management programs.
- The Online NextSteps program should be designed to treat a cohort or class of patients – i.e., trauma survivors should participate as part of a virtual group who would work through the program together and have the opportunity to interact with other members of the group on a regular basis. Each class should be facilitated by two coaches – a trauma survivor and a health care professional trained for facilitating the online program.
- The length of the program should be shortened from eight to six weeks to facilitate participation and reflect developments in SM research that indicate six-week programs are equally effective to those of longer (8-10 week) duration. The final list of recommended sessions were:
 - Explore where you are on the Road to Recovery, learn more about self-management, and begin to practice self-management tools.

- Identify problems related to your injury, set goals, and begin to use problem-solving to find solutions
 - Learn about emotional adjustment, including myths and common reactions following a traumatic injury and begin to use tools to improve your mood.
 - Recognize the symptoms of anxiety and develop tools to manage negative thinking, avoidance and arousal.
 - Begin to get the help you need from family and friends by learning the signs of a healthy relationship, getting the most of your support system, and recognizing helpful and unhelpful "help".
 - Learn how to overcome setbacks that may arise in your recovery. Take time to reflect on the future and celebrate the progress you've made in thus far
- The online program should consist of two principal components:
 1. A six-week program to be delivered online at the pace of two 20-25 minute lessons per week. More frequent, shorter lessons would allow for delivery of key material in shorter computer interactions which were deemed to be more accessible to users.
 2. Ongoing support in the form of weekly contacts using either telephone discussions among class participants or online chat session and electronic bulletin board monitored by the group coaches where participants will be able to read comments, questions and answers submitted by participants and leaders.
 - The content was useful and appropriate; however, transition to online delivery requires focus on key concepts, delivery of interactive skills building and individualized activities to replace the extensive group process that occurs during face-to-face interaction.

Based on these recommendations, the study team developed an iterative process to construct the online NextSteps program. Principal study team members were assigned to draft initial story boards outlining the lesson goals, activities to achieve these goals and potential graphic presentations. These concepts were refined with feedback from the entire study team and in consultation with the graphic designer, videographer, and computer animation consultant. Detailed activities, graphics and video segments were prepared along with scripts for voice over narration and these were once again reviewed by the entire team and consultants. Trauma survivors, content experts and actors were recruited and trained in preparation for video production. Mock- ups of the lessons were then created by the graphic designer and computer consultants and these were reviewed to achieve final approved versions prior to production by the graphic designer, videographer, computer animation specialists and voice actors.

2.2. DEVELOPING THE ONLINE PROGRAM and NEXTSTEPS WEBSITE

As described above, the NextSteps online program was developed through extensive collaboration between content experts, clinical consultants, technical programmers, art design, videography, actors and voice professionals, animators, and audio technicians.

The program consists of three overall components:

- Narrated, interactive Flash Lessons (two per week for six weeks)

- Ongoing Support Services
 - ✓ One-on-one telephone orientation to program
 - ✓ Weekly chats among class participants – facilitated by a coach
 - ✓ Electronic Forum monitored by coaches
 - ✓ Mail Center
 - ✓ Computer and telephone based “help” desks
- Access to Online Resources
 - ✓ Toolbox, workbook, private journal

Participants are enrolled into NextSteps as ‘cohorts’ (ideally consisting of 9-12 survivors). Before starting the program, participants are introduced to the class facilitator over the phone. The facilitator provides an overview of the program and answers any questions participants have. Over the next six weeks participants are asked to work through two lessons each week (each lasting about 20-25 minutes each). At the end of the week, they are encouraged to participate in a facilitated online discussion group or “chat”. Each week’s chat has a theme based on the week’s lesson content.

The NextSteps website (www.nextstepsonline.org) provides access to the lessons, support services and online resources.

2.2.1 Developing the Lessons. The following steps were taken to develop each of the 12 online lessons:

- The 12 online lessons (two for each of the six weeks) were divided among the development team for initial concept formation, script-writing, and narrative flow. Regular group meetings were then used to review, edit, and sharpen lesson content. During this phase, ideas about the visual presentation, tone, and message of each lesson were developed.
- Following initial script development, voice audio recordings were made of each ‘section,’ narrated by one of the group members. This rough audio content was then used by the graphic designer to develop the visual aspects of each section.
- Once developed, preliminary story boards of each section, based on rough audio were submitted back to the development group for review, revision of both story boards and script, and eventually, approval.
- Once each lesson’s content was revised and approved, story boards were given to animation professionals to move content from static to dynamic form. Simultaneously, the final script was read by a professional voice actor to serve as the final narration to be used along with the animated visuals. Video recordings of character actors were likewise filmed.
- Once finalized, final narration and video files were then submitted to the animation group to marry visual and audio content. Rough cuts of combined visual and audio content were then submitted to the core development group for review, further revision, and approval.
- Final products were then submitted to a group of beta testers to provide feedback on the functionality of each lesson through multiple combinations of internet connection speeds, hardware and software specifications, and operating platforms. Beta feedback was then

organized and relayed back to the animation group for technical fixes and revisions prior to final approval of the finished product.

Each lesson follows a similar format as described in this figure. The core of the lesson consists of interactive didactic material, the content of which is described below. Before starting the core of the lesson, objectives of the lesson are reviewed and participants are reminded of the weekly chat and its focus for that week. The take home message and the practice activity of the previous lesson are reviewed and participants are asked some questions about how they are doing. At the end of each lesson, the take home message of that lesson is reviewed and participants are asked to complete an activity at home before starting the next lesson. At the very end of each lesson, there is a relaxation/positive imagery exercise.

Format of Lessons is Standardized

- Objectives of the Lesson
- Focus of the Weekly Chat
- Opportunity to Review Last Lesson
- Review Practice Activity from Last Lesson
- Self Check-In with Feedback

LESSON CONTENT

- Take Home Message
- Home Exercise
- Relaxation Exercise

Functionalities Built into Each Lesson. Each lesson is composed of a multimedia Flash presentation encompassing text, video, graphics, custom animation, and tied together by audio narration. The Flash platform was chosen based on its high level of market penetration (greater than 98% in the U.S.A.), ease of integration with audio and video content, the possibility of using low bandwidth / high quality animated vector graphics, compatibility with Ruby (and many other programming languages) and web databases, and the availability of well-developed user support systems. This core content is accessed via an embedded Flash player built into the NextSteps online website. The Flash player provides a number of control, accessibility and most importantly, interactivity features, including:

- *Navigation:* Each lesson includes tool bar ‘buttons’ to move forward or backward through a lesson. This can be accomplished in two ways, via a section-by-section forward and backward advance or by ‘scrubbing’ within each section. Time and section stamps are visible within the lower tool bar showing the user’s real-time progress.
- *Closed Captioning:* Each lesson includes the option to enable or disable closed captioning.
- *Save and Close Lesson:* Each lesson includes a button that saves progress should the user wish to stop before finishing. Upon return, the program then gives the user the option to return to their previous place, or start again from the beginning.
- *Start Lesson/Review Take Home Message:* At the beginning of each lesson (except lesson 1), the user can choose to begin the lesson, or review a list of important points from the previous lesson prior to starting.
- *Text Fields:* Lessons provide text entry boxes in relation to lesson content, where the user is able to input (type) answers into the program that is then saved and reviewed throughout the program.
- *‘Flip Chart’:* Provides a list of pre-populated responses to different questions to help guide, elicit, and motivate the user to input their own unique answers.

Lesson Content. The NextSteps online program is a six-week program. During each week participants work through two lessons. The content of these lessons is described below:

Week 1: *Taking Stock.* Lessons 1 & 2. Includes review of how injury has impacted the survivor's life in both how and what they do, introduction of the concept of 'self-management' and how survivors are an important component in directing their treatment. Week 1 also includes education about types of communication (aggressive, passive, assertive) and introduction of a regular relaxation and visual imagery exercise that accompanies each lesson.

Week 2: *Moving Forward.* Lessons 3 & 4. Focus of this week is identifying problems, changing perspective and seeing problems as 'challenges,' and turning them into goals that can be attained. These goals are saved and monitored throughout the rest of the program and can be modified, revised, or changed. Lastly, users are shown how to keep track and measure progress toward their goals.

Week 3: *Managing Emotions I.* Lessons 5 & 6. Focus includes the emotional consequences related to physical trauma. Didactic education covers the differences between normal adjustment and major depression (including diagnostic screeners of symptoms severity). Week includes strategies to help improve mood.

Week 4: *Managing Emotions II.* Lessons 7 & 8. Focus includes education about the body's natural stress response and relation to anxiety. Diagnostic screening for PTSD is included, with relevant treatment recommendations. Included is review of relaxation training through several modalities including Progressive Muscle Relaxation, Guided Imagery, Deep Breathing, and Brief Relaxation (Countdown).

Week 5: *Family & Friends.* Lessons 9 & 10. Content includes review of the different ways that individual trauma affects significant others, family members, and relationships as a whole. Included is the idea of 'Helpful' and 'Unhelpful Help' and guides survivors in asking for help, showing appreciation, and declining help when necessary. Survivors also review ways that they might be contributing to the stress of others and how to help alleviate Caregiver Stress.

Week 6: *Moving Forward.* Lessons 11 & 12. Survivors reflect on their goals for the future following trauma and what steps they need to take in order to prepare for and manage future setbacks.

Each lesson is facilitated by interactive didactics, self-monitoring with feedback, videos (of survivors and content experts), exercises to reinforce key messages and relaxation exercises. The JPEGS (digital photography files) of all lesson screen shots are online for download at the following link: <http://www.commandcreate.com/nextsteps/images.zip>. The best way to view the lessons, is on the website itself. To access these lessons, follow the following instructions:

1. Go to: www.nextstepsonline.org
2. Click on 'Register for NextSteps' at the top of the screen
3. The pre-registration password is: **t3sts3cr3t**
4. Then you can register and create a class member profile.
5. Once you've registered, you will be asked to go to your personal email account to confirm your registration. Once you've confirmed, an account will be created within NextSteps and you will get an email to let you know you can login. (NOTE__ YOU MAY WANT TO CHECK YOUR JUNK EMAIL FOR THIS MESSAGE).
6. Once you have registered, sign in and then click on "Lessons"

We have reproduced selected screen shots here to illustrate some key components of the lessons.

Self Monitor HOW You are Doing

nextsteps Final numbers on right update in real-time as you interact.

How Are You Doing?

On a scale of zero to 10, with zero being poor and ten being excellent, rate your physical health, activity level, emotional well-being, and overall quality of life

Physical Health Poor 0 10 Excellent Year Score **2**

Activity Level Poor 0 10 Excellent Year Score **8**

Emotional Well-Being Poor 0 10 Excellent Year Score **5**

Overall Quality of Life Poor 0 10 Excellent Year Score **7**

[Submit](#)

ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

CLOSED CAPTIONING IS CURRENTLY DISABLED

Feedback

nextsteps

The Road to Recovery: How You Are Doing

Physical Activity Emotional

Quality of Life

[View Tips](#)

ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

CLOSED CAPTIONING IS CURRENTLY DISABLED

Self Screening – e.g. for Depression

nextsteps

Emotional Reactions to Injury

Look at this list of the most common signs and symptoms of depression. Do any of these describe how you feel? Think about the past 2 weeks and enter 0-3 for any symptoms that were present for most of the day and nearly every day.

KEY: 0 = Not at all 1 = Several Days 2 = More than half the days 3 = Nearly every day

1. Little interest or pleasure in doing things

2. Feeling down, depressed, or hopeless

3. Trouble falling or staying asleep, or sleeping too much

4. Feeling tired or having little energy

5. Poor appetite or overeating

6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down

7. Trouble concentrating on things, such as reading the newspaper or watching television

8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

9. Thoughts that you would be better off dead or of hurting yourself in some way

[Submit](#)

ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

CLOSED CAPTIONING IS CURRENTLY DISABLED

Feedback

nextsteps

Screening Results

SCORE	PROVISIONAL DIAGNOSIS	RECOMMENDATIONS
0 - 4		
5 - 9	Minimal Symptoms	Support, educate to call if worse; Return in 1 month
10 - 14	Minor Depression Dysthymia Major Depression (Mild)	Support, watchful waiting Antidepressant or psychotherapy Antidepressant or psychotherapy
15 - 19	Major Depression (Moderately Severe)	Antidepressant or psychotherapy
> 20	Major Depression (Severe)	Antidepressant and psychotherapy (especially if not improved on monotherapy)

ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

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Expert Videos

nextsteps

Emotional Reactions to Injury: What Can Help

- Support
- NextSteps
- Psychotherapy
- Medication

ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

CLOSED CAPTIONING IS CURRENTLY DISABLED

Survivor Stories Illustrating Key Messages

nextsteps

Listen to these survivors talk about how their injuries impacted their lives and what challenges they faced on their road to recovery. (Click "play" for each video to hear their stories.)

First is Sarah, who sustained a head injury as the result of a car crash.

Next is Carlos, who was also involved in a car crash, but whose experience has been quite different.

Last, listen to Steve talk about the injury he suffered while out on vacation.

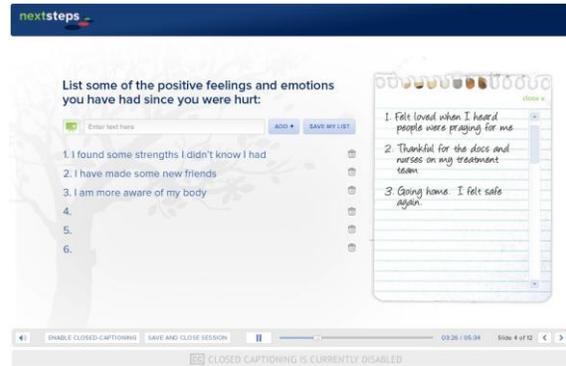
ENABLE CLOSED-CAPTIONS SAVE AND CLOSE SESSION 03:26 / 05:34 Slide 4 of 12

CLOSED CAPTIONING IS CURRENTLY DISABLED

Exercises – Fill In



Flip Chart Option



“Games” . . . Fact or Fiction



Relaxation



2.2.2 Website Development and Functionalities. The website was created using the Ruby (ruby-lang.org) programming language and built on an open source, web application framework called Ruby on Rails (rubyonrails.org). A web application framework is a software package designed to facilitate the development of dynamic websites (a website that requires a high level of user interactivity and has the flexibility to seamlessly present new information to the user). The use of this type of software package allows the designers to significantly reduce programming overhead by standardizing common activities performed in web development, such as common database access procedures, web templates, session management, and numerous common functionalities. The website is comprised of the following content components: Frontpage, Homepage, Lessons, Workbook, Chat, Class, Toolbox, Forum, Journal, and Help. Other components include the Mail Center, Network and personal Profiles, Settings, and Learning Management System. Each is discussed below in detail.

Frontpage: In order to protect and control assets and access to the NextSteps website during pilot-testing, prospective users are initially presented with basic information about the program when visiting www.nextstepsonline.org. This pre-login screen is referred to as the Frontpage and provides access and login resources for study participants that have been given appropriate clearance via passwords to register and continue on to the program. The Frontpage provides basic information about the program to individuals outside of the study and limits hacking by automated programs or those with malicious intent. Sections provide basic information about the purpose of the program (Home) via text and video, details about the content of the program (Participating in NextSteps),

video testimonials of survivors who have used the program (Testimonials), the theory and science behind the program (About Self-Management), and how interested individuals can contact program administrators for more information (Contact).

Homepage: Once the user is logged in, the homepage provides information on the user's progress and quick links to all of the other NextSteps components. Information is provided in a 'dashboard' format with toolbar links and hypertext to navigate the user to each component. Redundancy was built into the system to ensure multiple ways to reach all components.

Lessons: The 'Lessons' tab provides an overview of each week in the program complete with brief descriptions of what content is included in each week. Hyperlinked text allows access to and launching of individual lessons.

Workbook: The NextSteps workbook is a virtual, online notebook that saves all answers inputted by the user while completing each lesson. The responses the user enters are presented in context under different headings depending on the subject matter and are editable to be reviewed or revised as long as the user is active in the program. The workbook is private and is not accessible to other users or site administrators.

Chat: The 'Chat' tab gives users access to the online, virtual class discussions that are held once-per-week to supplement the individual's lesson activity. This area includes the 'Member Lounge', which is an open virtual chat space where all users from any cohort or class can come to interact with other survivors. A separate link gives access to the 'Scheduled Chat' that is used for the weekly, specific content restricted to each individual class or cohort. This chat is led by a trained leader. Other components include the 'Chat Schedule' that shows the dates and times of all scheduled chats and 'Instructions' which provides information on how to use the various chat functionalities. Once a user is logged into a chat room, the user is presented with a chat window and dialogue box in which to type the desired comment. To the right of the main chat window is a vertical roster of others who are attending the chat. Text can be customized in a variety of ways including font type and orientation, color, and various emoticons to supplement the typeface.

Class: The 'Class' tab provides information and organization of all members in a user's particular cohort or "class." Here the user can see biographical information provided by each member as well as upload unique thumbnail pictures or other avatars to accompany their profiles.

Toolbox: The 'Toolbox' tab provides access and organization of all worksheets, video files, questionnaires, and external web-based links that are discussed in the lessons. The NextSteps Toolbox can be searched and organized according to the lesson in which the content is from or by the general category. In total, 30 unique resources are available in the Toolbox.

Forum: The ‘Forum’ tab includes the NextSteps Community Forums where users can interact via pre-populated or user-created threads. Users are able to create their own threads and respond to topics in the “General Discussion” area, as well as share their injury stories in the “Survivor Stories” thread. The Forum is created as an adjunct to the online chat sessions and provides users the ability to interact with those outside of their specific cohorts such as users in other classes or alumni from the program who might lend words of encouragement to current class members.

Journal: The journal is a virtual workspace where individuals can type and save anything they wish to include. Journal entries are accessible only to the individual users and can not be accessed by other members or site administrators.

Help: This section provides information on how to navigate the various components of Nextsteps online. Sections include a ‘welcome’ with information on how to set specific preferences. Other sections include a placeholder for a video tutorial, frequently asked questions (FAQs), privacy information, and general rules when interacting and participating in the community.

Mail Center: The mail center can be found under the link ‘Mail’ on the top right hand of the page. The mail center is an internally-housed email messaging program that allows users to message one another without divulging personal email or contact information. When an email message is created and sent within the Mail Center, an external message is sent to the user’s personal email account letting them know that they have a message waiting. General functionalities include composing and deleting messages, organizing messages, and sending mass messages to entire classes.

Profile: This link allows the user to customize and/or edit biographical information presented in their virtual profile.

Network: Allows users the ability to find other users within their network as well as reach out to others in different cohorts.

Settings: Here users are given the opportunity to set privacy standards including what information they wish to be viewable by others and/or what information should and should not be included to the community.

Learning Management System (LMS): The LMS is used to track users’ progress through the class. The system records completed sessions, directs users to their current lesson, and allows the program administrator to send e-mail reminders when users fall behind on the sessions. The LMS is integrated to the website’s membership management system to facilitate seamless transitions between lessons, online chats, and message boards using a single security system.

Membership Management: The website uses a flexible membership management infrastructure that allows single login access to all components, including content, lessons, the forum, chats, and participant journals. User information is passed seamlessly

across these components, making it possible for participants to have the same user name in the chats and forums, use their website profile pictures as avatars in the forum, and have lesson content posted directly to the forum. The membership management functionality integrates with the learning management system, making it possible for the class leader to monitor participation in all aspects of the program.

2.3 PILOTING NEXTSTEPS ONLINE in a CIVILIAN POPULATION

The NextSteps online program was piloted in four cohorts of nine, seven, six and eight survivors each (total of 30 survivors). In this section we describe the methods used to conduct the pilot, a description of the study population and the results of the pilot.

2.3.1 Methods.

Prior to initiation of the program, all participants consented to a baseline interview which collected information about the participant and included a baseline assessment of key outcome measures. The trauma registries at Carolinas Medical Center and the University of Maryland were accessed to obtain information about the injuries sustained and lengths of stay in the hospital. The assessment of key outcomes was repeated at the conclusion of the six-week program and again at three months after completion of the program. At three months participants were also asked questions about their satisfaction with the program and its components. In addition to interviewing participants we collected information on usage statistics directly from the website.

Identifying and Consenting Participants. We recruited participants into the pilot from two institutions: Carolinas Medical Center and the University of Maryland. Since the procedures for recruiting from these two institutions varied, each is described separately below.

Carolinas Medical Center. We recruited potential participants from Carolinas Medical Center by identifying all potentially eligible patients who were scheduled for an outpatient visit at the orthopedic clinic. Patients had to meet the following inclusion criteria: (1) treated for their injury in the previous six months; (2) English-speaking; (3) Ages 18-54; (4) sustained one or more of the following injuries: grade III tibia fractures, pelvic and acetabular fractures, open distal (supracondylar) femur fractures; bicondylar tibia plateau fractures, severe foot, calcaneus and pilon fractures, dysvascular injuries below the distal femur excluding foot; major soft tissue injuries below the distal femur; and traumatic amputations (excluding toes). Excluded were: (1) patients with significant brain injury (i.e. Glasgow Coma Scale (GCS) Score less than 15 at discharge from the hospital) or spinal cord deficit; and (2) patients who did not have access to and use a computer and internet access.

Recruitment took place entirely in the outpatient setting. A study coordinator who is a care provider at the Carolinas Medical Center, Department of Orthopedics reviewed cases scheduled to be seen each day and flagged potentially eligible patients. When the patients visited the clinic, their physician or nurse provided them with a study brochure and asked if they were interested in learning more about the study. The coordinator obtained informed consent for each participant. Upon providing written informed consent and signing the Health Insurance Portability and

Accountability Act (HIPAA) authorization, the research subjects completed a baseline interview with the study coordinator. The coordinating center at Johns Hopkins contacted these patients via both email and letter (if email is not responded to) and directed them to the NextSteps website. Subjects who did not log in and register with NextSteps were contacted weekly by email/telephone to determine interest in participation. Once a class of 5-10 subjects had been enrolled, the course began.

Given that participants were being asked to complete a six-week program, we were approved to compensate them \$60 for completion of the program (\$10 for each week completed), in addition to \$25 for completion of each of the 2 follow up interviews, for a potential total of \$110.

University of Maryland. Participants at the University of Maryland were recruited as part of a separate, Centers for Disease Control (CDC) funded project to study the effectiveness of a hospital-based program called the Trauma Survivors Network (TSN). Participants in the TSN evaluation study were also trauma patients, but had slightly different inclusion and exclusion criteria. These were: (1) GCS = 15 at admission; (2) Discharged alive; (3) Ages 18-69; (4) No serious or severe brain injury - i.e. include only those patients with an Abbreviated Injury Score (AIS) head injury of severity ≤ 3 ; (5) English-speaking and not in jail or homeless at the time of the injury; (6) Must have sustained either one or more lower/upper extremity injuries of AIS severity >3 or polytrauma as defined by having an Injury Severity Score (ISS) > 17 ; and (7) Access to a computer at home, work or school and computer literate (operationally defined as having used the computer in the past year to email someone or to order something over the internet). The TSN evaluation study followed patients for 12 months following initial hospital discharge. IRB approval at both the Johns Hopkins Bloomberg School of Public Health and University of Maryland was obtained to conduct a sub-study, enrolling TSN study patients into the NextSteps online program. Recruitment took place entirely over the phone, mail, and email. Approached were those TSN evaluation study participants who, during the course of the study follow-up interviews, expressed interested in online SM programs. They were contacted via phone by a coordinator at Johns Hopkins Bloomberg School of Public Health to obtain consent and complete the baseline interview. Once consented, respondents went through the same study procedures as participants enrolled at Carolinas Medical Center.

Data Collection. As indicated above, all survivors who consented to join the study completed a baseline interview. Those who actually enrolled and participated in the NextSteps program were interviewed at the end of the course and at three months following completion. All interviews were conducted by research staff at Johns Hopkins by telephone. The baseline and follow-up interviews are included as attachments to this report. In addition to collecting data on age, gender, race/ethnicity, education, major role activity before the injury, and time since injury, the following assessments were made at baseline and follow-up to evaluate the effectiveness of the NextSteps program.

- **Self Efficacy** was measured using a modified version of the coping with symptoms domain of the Arthritis Self-Efficacy scale.²¹ This scale is a 22-item questionnaire designed to measure patients' perceived self-efficacy to cope with the consequences of a chronic condition with three subscales: self-efficacy for pain management, self-efficacy for coping with symptoms, and self-efficacy for physical function. We only used the self-

efficacy for coping with symptoms domain in this study. Each item is presented as a question. The respondent rates each belief on 10-point Likert scale anchored on the ends by 'very uncertain' to 'very certain'. Psychometric properties of these scales have been well-validated.

- **Social Support** was measured with the Multidimensional Perceived Social Support (MPSS), a 12-item self-report measure of subjectively assessed social support from three specific sources: family, friends, and significant other.²² Participants were asked to rate their degree of agreement on a seven-point Likert scale. Items primarily reflect perceived availability of emotional, informational, companionship and affection support.
- **Positive Affect** was measured using the Positive and Negative Affect Schedule (PANAS).²³ The PANAS consists of 20 adjectives rated from one (very slightly/not at all) to five (extremely) that measure positive feelings such as joy, pleasure and negative feelings such as anxiety or sadness. Data indicate high internal consistency and test-retest reliability over a two-month period. While most studies focus on the reduction of negative affect, the NextSteps program is designed specifically to increase positive affective states. Only the 10 positive affect items were used in this study.
- **Anxiety** was measured using the anxiety scale of the Brief Symptom Inventory (BSI). The BSI is a 53-item, abbreviated version of the SCL-90-R (Symptom Checklist 90 Revised).²⁴ The BSI was designed to assess the psychological symptom status of psychiatric and medical patients as well as individuals from the general population. The BSI consists of nine primary symptom scales (i.e. Somatization, Obsessive Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism). The anxiety subscale of the BSI consists of six items, and has been shown to have good to excellent reliability and validity.
- **Depressive symptoms** were measured using the nine-item depression scale of the Patient Health Questionnaire (PHQ-9).² The PHQ-9 is a well-validated tool for assisting clinicians in diagnosing depression. There are two components of the PHQ-9: (1) assessing symptoms and functional impairment to make a tentative diagnosis of depression, and (2) deriving a severity score. The PHQ-9 is based directly on the diagnostic criteria for major depressive disorder in the Diagnostic and Statistical Manual Fourth Edition Text Revision (DSM-IV-TR).
- **Function and Health Related Quality of Life** were assessed using the Short Form Health Survey (SF-12 V1). The SF-12²⁶⁻²⁷ is included is a generic health status measure from which an SF-6D can be computed for the purpose of a cost-utility analysis. The SF-12 is a multipurpose short-form (SF) generic measure of health status. It was developed to be a much shorter, yet valid, alternative to the SF-36[®] for use in large surveys of general and specific populations. The 12 items in the SF-12 are a subset of those in the SF-36 and includes 1-2 items from each of eight health concepts: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality (energy/fatigue), social functioning, role limitations due to emotional problems and mental health (psychological distress and psychological well being). We also included a

one-item question asking respondents to rate the overall quality of their life on a scale from zero to 10 with zero being the lowest and 10 being the highest.

Satisfaction with the NextSteps program was evaluated using questions that were previously developed for the evaluation of the PALS program (modified for NextSteps). They include questions about satisfaction with the overall program, as well as individual components of the program. They are also asked to indicate self-perceived benefits of the program. Finally we asked some open ended questions, including: “What did you like best (and least) about the program?”; “What would you change about the program?”; and “What is the most important thing you learned or change you made because of your participation in the program?”

The Study Population. Table 1 provides the number consented (and completed the baseline interview) and the number who did and did not enroll in the program. Enrollment was defined as registering for NextSteps via the website and accessing at least one lesson. Of those who enrolled, we indicate the number who were successfully interviewed at six-weeks (immediate post-intervention) and at three-months. We attempted to follow-up those who consented but did not enroll in NextSteps, but we could only successfully find three people at six-weeks and two people at three-months. However, all 56 people who consented were interviewed at baseline.

Table 1: Numbers Consented, Enrolled and Followed (and % Followed of those who Enrolled)

	All Cohorts	Cohort A	Cohort B	Cohort C	Cohort D
Consented	56	10	18	10	18
Never Enrolled/Participated	26	1	11	4	10
Enrolled in Class	30	9	7	6	8
Interviewed at 6 wks	26 (87%)	7	6	5	8
Interviewed at 3 mos	27 (90%)	9	7	6	5

Of the 56 individuals who consented to be in the study and completed a baseline interview, 30 (54%) actually enrolled in a NextSteps class. Of the 30 who participated in the pilot, 11 were patients from University of Maryland and 19 from Carolinas Medical Centers. Follow-up was high – 87% at six weeks (immediately following the end of the program) and 90% at three months.

Use of the website is summarized below in Table 2. Use clearly varied by cohort.

Table 2: Website Access Statistics

	All Cohorts	Cohort A	Cohort B	Cohort C	Cohort D
Class Size	N=30	N = 9	N = 7	N = 6	N = 8
Mean chats attended	2.91	3.78	4.4	0.89	2.90
Mean chats attended (of those who attended at least 1 chat)	4.17	4.25	4.4	2.67	4.14
Mean lessons accessed	7.61	9.78	11.2	3.22	7.70
Mean lessons accessed (of those who accessed at least 1 lesson)	8.96	9.78	11.2	4.83	9.23
Fraction who participated in forum (more than 0 posts)	77%	60%	33%	50%	54%
Number of posts per cohort (total)	97	53	12	16	16
Mean number of posts per member (divided by total members)	2.94	5.89	2.40	1.78	1.60
Mean number of posts per member (of those with at least one post)	5.39	7.57	4.00	5.33	3.20
Fraction who developed a website profile	67%	80%	33%	70%	61%

Tables 3A, 3B and 3C present baseline data for those who participated in NextSteps and those who consented to the study, but did not participate in the program. On average, compared to non-participants, participants were more likely to be older (mean age 41.6 vs. 37.1) ($p < 0.05$), female (57% vs. 35%) ($p < 0.05$), and better educated (percent with some college was 62% vs. 44%) ($p < 0.05$). The percent of Caucasian/whites among participants versus non participants was similar (77% vs. 81%). Overall, 33% of participants were working at the time of the baseline interview, compared to only 12% among those who chose not to participate ($p < 0.01$). Similar percentages were on disability (27%).

Participants were on average further out from their injury (mean of 190 days) compared to non-participants (mean of 102 days) ($p < 0.05$). (See Table 3B) They also had longer lengths of stay in the hospital (12.96 days compared to 10.67 days) ($p < 0.05$). The longer length of stay suggests their injuries were more severe although the same percentage of participants and non-participants had ISS scores indicative of major trauma (> 17) (25%).

When baseline measures of outcomes are compared for those who did and did not participate, we find there are no statistically significant differences between the two groups (see Table 3C).

Satisfaction with NextSteps. Table 4 summarizes the satisfaction of the participants in Next Steps. Overall, participants were very satisfied with the program:

- 96% said they would recommend NextSteps to a friend;
- Over 90% of the participants rated the program as easy to use (giving a score of 8-10 on a scale of 0-10);
- Over one-half (54%) indicated the benefits from participation *far* or *somewhat* outweighed the effort involved (97% said the benefits at least equaled the effort);

- 82% said that NextSteps was as or more important than other services they received to help with their recovery (39% said it was more important);
- 82% said their overall status was much better or very much better based on their participation in NextSteps;
- 64% said their positive mood increased a meaningful amount; 54% said their confidence in solving problems increased a meaningful amount; but only 28% said their pain decreased a meaningful amount.
- 52% rated NextSteps as very helpful in their recovery (giving a score of 8-10 on a scale of 0-10);

In judging the importance of the various components of NextSteps, the lessons and online chats were rated most important (70% and 79%, respectively, rated the importance of the lessons and chats as 8-10 on a scale of 0-10). The percentage providing a rating of 8-10 for the Journal was 61%; for the Forums it was 59% and the Workbook it was 35%. Nearly everyone (95%) rated the importance of working through the lessons and chats with the same people as high (8-10 on a scale of 0-10).

Impact on Outcomes. Tables 5A, 5B and 5C summarize outcomes at baseline and at six weeks and three months following the intervention. Changes in means from (i) baseline to six-weeks and (ii) baseline to three-months were separately tested using paired t-tests. Changes in dichotomous outcomes (e.g. screened positive for moderate to severe depression) from (i) baseline to six-weeks and (ii) baseline to three-months were separately tested using McNemar's test. Significant differences are noted on the table (+ p-value is < 0.10; * p-value is < 0.05; ** p-value is < 0.01).

Although the sample size was small for this pilot study, a few significant differences are worth noting. Both the physical health subscore (PCS) and mental health subscore (MCS) of the SF-12 were significantly higher at three months compared to baseline (as are differences in the overall SF6D score) ($p < 0.05$). The size of the improvement in these scores is modest. In addition, BSI anxiety scores significantly improved over baseline (at both six weeks and three months) ($p < 0.05$). Higher scores on the BSI denote fewer symptoms of general anxiety. At baseline, 70% of participants had low (poor) BSI scores (< 4.5) compared to 39% at six weeks and 28% at three months. Self-efficacy scores also improved but the difference was only significant at three months ($p < 0.05$); 65% had scores above eight at three months compared to 50% at baseline. While these differences are difficult to interpret without a control group, they are suggestive of a positive impact of the intervention.

Qualitative Data. A review of the responses to the open-ended questions in the interview provide some further insight into the success of the program and what could be done to improve it. The responses to these questions are summarized below.

What did you like most? Several ($n=8$) people commented on how useful the chats were. Others ($n=8$) said they liked connecting with other survivors the most. Sample responses include: Connecting w/others w/trauma, being part of something; Meeting other trauma victims; Can talk to people who went thru same things; Talk to others going thru same thing. Normalized what they were going through; Sharing their story w/other people; People I met are really good

friends now; Feelings I thought were abnormal were shared by other patients; Talk to other participants

Other things 1-2 people liked best: Sample responses include: Workbook - forced reflection; Lessons spot on. Topics appropriate; Very informative; Built more confidence; Problem-solving; Knowing I'd be benefiting soldiers returning home; Like something I can do on my own; Gave me new things to think about; Easy, helpful, convenient.

What did you like the least? Several people (n=6) said “nothing.” Others pointed to the following:

- Four users thought program required too much time commitment: Sample responses included: “Slightly more time commitment than anticipated; Lessons took a bit longer than expected; Very busy- Actual time 5-7 min longer for each lesson.”
- Four users had difficulty with the online chat format: Sample responses include: “Hard to chat/type fast enough; Chat online-prefer face to face; Chat too short; Time on chat goes by too quickly”
- Three users had technical difficulties: “difficult to get into chat room”
- Two users did not like the early lessons: “No tip toe into program; go right to lesson 3”
- Two users did not like the videos: “Video online-slowed things down; Video online unnecessary.”
- Two users had scheduling problems with the chat: “Set time for scheduled chat was a problem; Make different time schedules r available. They gave me a time and I couldn't do it.”

What would you change? Some (n=4) users said “nothing.” Others pointed to the following:

- Five users wished it was easier to stay in touch with classmates: Samples include: “Accessing ppl to contact; Continued contact w/people; Make easy to connect to link; Confidentiality-would like to have more contact; Keep in contact w/people for continued support.”
- Five users wanted the program earlier in their recovery: Samples include: “Better to do sooner after accident (huge difference); Better for people who come out of trauma-a few months after trauma; Participated so late after injury; Start program soon after injury. Great program. Gives tools to deal with injury; Should be right after injury-not 1 year later, but I did not have a lot of time would be even better right after injuries not 1 year later”
- Three users wanted the program to be longer: “Longer; More opportunity to chats; More lessons-anything else”
- Three users wanted classes to be larger or more participation in the chats: “More people to share experience with group too small; More participants... ; Forums b/c no one participated! ; Wish more people in the chat room.”
- Three users wanted face-to-face classes: “Face-to-face classroom; Group sessions. Physically one location; wanted face-to-face time; Learned it was difficult to participate b/c online discussion-impersonal-Would be better in person.”

Most important thing participants learned or took away from participating in NextSteps ?

- Normalizing (n=9): Samples include: “Feelings I am having are not abnormal-fear of return to work; Not only one. Not alone; I’m not the only one; Realize not alone ; Not alone. Normal; Validation did everything right; Other people messed up too. Not only one suffering. Common problems; Always someone out there worse off than me; Helped me see that there were other people who went through this”
- Problem-solving and setting goals (n=11): “Focus on goals as opposed to problems; Talking through problems. Sharing information; Set small goals as opposed to big goals; Pretty much able to do anything I set as a goal; Now can tackle problems; Learn to deal w/pain w/out meds; How to deal w/ongoing pain know will not be the same; Learn how to deal better and think about things differently-can get through it; Clearer direction of...and where to go, dug deep; Bucket list-too long but worth it; Last lesson - 100 things you want to do really helped.”
- Making Emotional Connections (n=8): “Emotional connection w/ppl; Open up more. Not be afraid to voice worries; Give chance to interact w/people who understand; Learned other people experience same struggles; Helpful to see more injured person; Don't feel alone. Class clicked; Stay in touch w/people w/same injuries”
- Positive Thinking (n=7): “More positive thought. Perspective, seeing others' experiences; Attitude how I look at things; Stay positive. Realize it will take time; Learned to think about things in a different way. Different outlook; Your outlook on life/injury is important; More positive; How to motivate myself-stay positive”
- Self-Discovery/Self-Efficacy (n=4): “Learn more about self; Look at self + learn 2 deal w/issues; How to deal w/my emotions; I can take control of whatever situation I am in. Not rely on others”
- Gaining a New Perspective (n=3): “Realize how lucky I am; Not see injury as problem... ; Being in group made me realize how lucky I was.”
- Communication skills (n=2): “demo of assertiveness or how to approach; Be assertive communicator”
- Built resilience (n=2): “Don't give up; Learned to build mental strength”

2.4 RELEVANCE OF NEXTSTEPS ONLINE for the MILITARY

We recognize that while the principles of SM should apply equally well to those injured in the military versus civilian environments, the actual content of the individual lessons and the mode of delivery will need to be modified to address the special needs of the military. Many of the risk factors for poor outcomes identified in civilian injury populations do not exist, or are minimized, in the military population. Soldiers are employed, have guaranteed health care and have better pre-injury physical conditioning. They also are likely to have higher levels of self efficacy and, at least initially, have a psychosocial support network provided by their military units. It should be noted, however, that there is concern that the extent of social support and self-efficacy may not remain as high after discharge from active duty. In addition, the rate of PTSD will likely be higher in the military versus civilian populations.

To address these issues, our fourth specific aim was to make recommendations regarding adaptation of the civilian online NextSteps program for use with military service members. To achieve this aim we used several approaches: 1) consulted with health professionals who serve military service members; 2) reviewed the literature on meeting the needs of returning military service members; and 3) obtained informal input from individuals with recent active duty service. Below we discuss the recommendations based on these consultations regarding program impact, adapting the online NexSteps program for the military and access and dissemination.

2.4.1 Impact: A review of the literature and discussion with our colleagues in the military confirmed for us the relevance of the NexSteps online program for service members and veterans. First, severe extremity injuries are common and costly among OIF and OEF service members. Recent epidemiologic studies concluded that orthopedic injuries sustained in combat “require the greatest utilization of resources for inpatient treatment in the initial post-injury period, cause the greatest number of disabled soldiers, and have the greatest projected disability benefit costs”.²⁸ Data from the Military Extremity Trauma and Amputation/Limb Salvage (METALS) Study showed that 34 % of service members who were 2-4 years post-severe extremity injury from OIF/OEF were not either on active duty, working, or going to school. They reported high levels of physical disability (average SMFA scores 24.6 compared to population norms of 12.7), high levels of depressive symptoms (38%), and moderately high incidence of positive screenings for PTSD (18%). Of those who screened positive for PTSD, 47% indicated the need for mental health services.²⁹

As these conflicts and devastating injuries continue, U.S. soldiers, sailors and airmen will require complex limb reconstruction surgeries or amputations. Following separation from military service and reintegration into society, disability from injuries will impact these individuals for the remainder of their lives.

A military version of the online NextSteps program can assist in assuring that these soldiers achieve the highest level of function and QoL. Development of an online application, in particular, will be cost-effective and provide an ongoing mechanism to provide support for injured soldiers as they transition from inpatient rehabilitation to the community – whether that be in the military or civilian sectors.

2.4.2 Adapting the Online NextSteps Program for the Military: Relevance and acceptability of intervention material to service member users is critical if it is to be useful, thus the content, look and delivery must communicate “this is for people who have been there, been hurt and are getting better”. To achieve this goal the following recommendations are made:

- Establish an advisory committee to guide the adaptation of the civilian program for military service members. This advisory group needs to include: medical and psychological care providers at two MTFs, a Medical Director and psychologist from the Veterans Affairs Polytrauma Program (VA), several military service members who were injured in OEF and OIF who are 12 months post-injury, and are nominated by MTF personnel. These individuals should be selected based on their ability to provide diverse perspectives on the needs of injured service members. The advisory committee and the

focus groups should identify what aspects of the structure, content and delivery of the civilian version require adaptation and what those adaptations need to be.

- Program content adaptations for military service members and veterans:
 - Provide additional activities on managing Trauma Related PTSD and provide access to evidence based interventions used to treat PTSD
 - Two additional lessons need to be developed- Getting the Most From Military and VA Health Care Systems and Returning Home – Reconnecting (accessing and utilizing support systems)
 - Given the prevalence of co-morbid conditions, specifically mild traumatic brain injury, lesson content needs to be accessible to those with mild TBI.

- Program tone and presentation for military service members and veterans :
 - The tone , graphics, voice over scripts and design need to reflect the comments that were made during our consultations- some examples are “need to respect what sacrifice we have made”, the graphics “need to let us see ourselves in these pages”, and the language was not “strong enough” and “needs to let us know how tough we are.”
 - These comments indicate a need to 1) revise the video examples using military service members both officers and enlisted service personnel; 2) revise the script to use language and tone similar to other military training programs; 3) use of voice over that communicates respect and firm direction. It was recommended we seek out a public figure who the military service members would relate to provide the voice over.

2.4.3 Access and Dissemination. The United States Military has two decades of history in using tele-medicine strategies to meet the medical needs of service members in remote and isolated areas. Development of a military version of the online NextSteps program continues this tradition. This development is in-line with recent telehealth applications that are being used to meet the needs of service members returning from combat. For example, in response to the large number of service members returning with TBI, the U.S. Army Medical Command established a Tele-TBI network with the goal of providing greater access to specialty care and rehabilitation services to its geographically dispersed military population. The Department of Defense (DoD), in collaboration with Defense and Veteran’s Brain Injury Center (DVBIC), now utilizes this telehealth network to deliver specialized neuropsychological care to service members with TBI in small and/or remote areas. This program has been successful in providing remote neuropsychological assessment to patients with cognitive and emotional difficulties following TBI. Overall, telehealth applications are a growing part of the military health system seeking to increase access to specialized care, reducing patient travel, and improving utilization of services while maintaining high levels of patient satisfaction. NextSteps online for military service members and veterans has these same advantages. It will allow for improved follow-up of deactivating, separating and retiring service members who are transitioning to VA health services and empower service members to engage in their own psychological health and overall wellness.

Several reports indicate that in spite of the availability of effective treatments many individuals with psychological and social burden following injury do not access care.¹²⁴⁻¹²⁵ In light of these data, an important set of recommendations on adapting NextSteps for military service members focuses on the need to connect potential users to the NextSteps resource. Our consultations resulted in the following recommendations:

- Develop a communication plan and marketing and outreach programs to ensure that service members and their families learn about these services.
 - Develop customized communication materials such as patient and provider brochures, posters, magnets, newsletters, fliers, e-mail communication, Command letters, targeted webinars by region, audience, topics, conference presentations, American Forces Radio & Television Network PSAs and articles in DoD publications.
 - Work with each Service Branch to identify the points of contact for disseminating communication materials both electronically and in print. Develop briefings at installations, National Guard and Reserve units, family days, deployment/return events, conferences, trainings, and other military events for wounded warriors.
 - Develop information to be included in the Veterans Health Benefits 101 free Webcasts.
- Develop ties to existing resources serving military service members:
 - Develop ties and links to existing Social media partnerships with Mental Health Services, Defense Centers of Excellence (DCoE), VA, Wounded Warriors, and Yellow Ribbon
 - Establish listing and link with Military OneSource that provides information 24-hours a day nationwide.
 - Establish connection and link with Military HOMEFRONT. The Military HOMEFRONT Web portal is the central source for service members and their families to obtain information about all DoD Quality of Life programs and services. The site is a service of the Office of the Under Secretary of Defense for Personnel and Readiness.
 - Establish connection and link with Military Severely Injured Joint Support Operations Center (MSIJSOC) The Military Severely Injured Joint Support Operations Center is an initiative for service members and veterans severely injured in Iraq and Afghanistan to help them and their families through difficult times. The Severely Injured Center is a call center with care managers standing by. It serves as a back-stop to every other government program intended to help military members and veterans who suffer severe physical or mental wounds from war. The goal is to prevent them from falling through the cracks of more well-publicized programs from the services, the Department of Veteran Affairs or any other Federal agency.
 - Establish connection and link with the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury. The DCoE leads a collaborative effort toward optimizing psychological health and traumatic brain injury treatment for the DoD. A “Center of Centers”, the DCoE component centers include the DVBIC, DoD Deployment Health Clinical Center (DHCC), Center for Deployment Psychology (CDP), Center for the Study of Traumatic

Stress (CSTS), Telehealth and Technology Center (T2), and the National Intrepid Center of Excellence (NICoE).

- Explore inclusion in the Post-Deployment Health Clinical Practice Guideline (PDH-CPG). The Veterans Health Administration is developing multi-disciplinary CPG for post-deployment health evaluation and management.

3 KEY RESEARCH ACCOMPLISHMENTS

- A Training Manual and Participant Workbook for the face-to-face administration of NextSteps were developed; these materials are copyrighted and are available from the investigators or accessible through the American Trauma Society's Trauma Survivors Network (<http://www.traumasurvivorsnetwork.org/pages/nextsteps>).
- 12 Flash lessons were developed that form the foundation of the NextSteps program; the program is copyrighted and can be accessed through a website built specifically for NextSteps as part of this project (www.nextstepsonline.org)
- Preliminary evidence from our pilot study indicates that outcomes are positively impacted by the NextSteps Program.

4 REPORTABLE OUTCOMES

- Presentations: Several presentations have been made in which the development and piloting of the NextSteps Program have been described:
 - *Self Managing the Consequences of Trauma: the NextSteps Program*. Military Research Forum, 2006 and 2009.
 - *Factors Predicting Poor Outcome in Amputation and Salvage: Opportunities for Intervention*. The 5th National Extremity War Injury Symposium. January, 2010.
 - *Social and Economic Determinants of Outcomes Following Injury: Opportunities for Intervention*: 15th National Health Sciences Research Symposium Aga Khan University, October, 2011.
 - *The End Results of Trauma Care: What Makes the Difference?* National Study Center for Trauma and EMS, May, 2012.
 - *Psychosocial Aspects of Recovery Following Trauma: Opportunities for Intervention*. AAOS Symposium on Improving Outcomes Post-Trauma, February, 2012.
- Publications: We are currently in the process of writing a paper describing the NextSteps Program and the results of the pilot study.
- Grants Funded: Based in part on the work accomplished under this grant, we were successful in securing a grant from the DOD CDMRP (part of W8XWH-10-2-0090) to evaluate the Trauma Collaborative Care Intervention (TCCI) which incorporates the NextSteps Program as a centerpiece. Results from the NextSteps pilot indicated that while the NextSteps Program is perceived as valuable by patients who participated, overall rates of participation were low. The TCCI intervention is a multi-modal intervention components that includes training of providers to promote patient use of

NextSteps and the use of a ‘Recovery Coach’ to increase patient use of NextSteps and other effective psychosocial, pharmacological and rehabilitative therapies. The Recovery Coach will also help facilitate improved communication between providers and patients. We believe this more proactive approach is needed to facilitate uptake of patient activation interventions, including NextSteps .

- Career Progress: Nathan Parmer, PsyD was a post-doctoral fellow supported by the grant. Dr. Parmer is currently a Clinical Neuropsychologist at St. Vincent Indianapolis Hospital and Adjunct Faculty at University of Indianapolis. He continues his work on self management interventions.

5 CONCLUSION

The NextSteps program, developed as part of this research, is a promising new program that will provide a critical complement to civilian orthopedic care now available in trauma centers throughout the country. Traditionally, we have focused on medical interventions to manage the secondary conditions of anxiety, depression and pain following major trauma. There is growing evidence to suggest these interventions may not be sufficient and that Cognitive Behavioral Theory (CBT) based interventions are critical in sustaining long-term, quality outcomes. The NextSteps Program uses education, self-monitoring, problem-solving and skill acquisition to address multiple dimensions of the post trauma experience. Cultivation of self-efficacy, adaptive behavior, coping skills and relapse management strategies enable participants to employ learned skills to successfully address the multiple medical and psychosocial problems they encounter post-injury.

Overall, the results of the pilot study are very promising. Although sample sizes were small and there was no control group to compare some of the positive changes we saw in outcome, satisfaction was high and self-perceived benefit of the program was evident. It is particularly encouraging that nearly everyone who participated indicated they would very likely recommend the program to a friend and 82% said their overall status was much better or very much better based on their participation in NextSteps. A significant decrease in anxiety symptoms immediately following the conclusion of the program (and sustained at three months) coupled with many of the positive qualitative responses to our open-ended questions suggests the program was successful in sending the message that survivors are not alone and that they *can* do something to successfully manage their lives after injury.

It was disappointing, however, that only 54% of those who consented into the study (and completed a baseline interview) actually registered for NextSteps online and accessed at least one of the lessons. Although participants were demographically different from non-participants (older, larger proportion female and better educated), we did have a sizeable proportion of participants who were male (33%), young (40% younger than 35 years) and less well-educated (38% with only a high school education). Only 33% of the participants were working at the time they enrolled in the program (27% indicated they were on disability).

Although these modest participation rates are consistent with other studies, we concluded that more attention is needed to better motivate persons to use NextSteps. Indeed, a number of participants told us at the conclusion of the program, “If I had known what this would be like, I

would have been more enthusiastic about joining in the first place.” In response to these comments and the overall low participation rates, we modified the introduction to the program to better explain what participants can expect. We have also videotaped testimonials from three of our participants and have included their comments on the website and in the Introduction to the NextSteps program. Longer term, we need to develop strategies to better communicate the benefits of NextSteps and motivate survivors to join the program.

Although several participants indicated they would have liked to have gone through the program earlier on in their recovery, there is a growing body of evidence that there are variations in individuals’ readiness to participate in, and benefit from SM interventions. The transtheoretical model of behavior change theorizes that individuals vary in their readiness to change or engage in specific behaviors. Based on this model, five stages of change (SOC) have been identified and measured (pre-contemplation, contemplation, preparation, action, maintenance). Further research is needed to develop tools for measuring these stages and identify individual readiness to engage in NextSteps.

It is clear that the chats (as a way to connect with others experiencing similar challenges) were an important part of the NextSteps program, even though several participants chose not to participate or had difficulty with the online chat format. Exploring ways to improve the chats will be given high priority in moving forward. Larger classes would be beneficial to ensure at least six or more participants are in the chat room at any one time. Offering chats at multiple times would also improve access, although most people thought it was beneficial to be in the chats with the same people from one week to another.

Although almost every participant (97%) said the benefits of the program equaled or outweighed the effort required (54% indicated the benefits outweighed the effort), we did receive some comments that some of the lessons were long and that lessons 1 and 2 were particularly ‘slow.’ Based on further review and the comments we received, we recommend that Lessons 1 and 2 be combined into a shorter and more engaging lesson. Other lessons will be reviewed as well to see if they can be shortened to reduce the overall burden of the program.

Finally, several participants wanted a way to stay in touch with their classmates. Although we encouraged participants to continue chats within the Forum provided as part of NextSteps website, it is clear that we could be more proactive in facilitating ongoing connectedness after the formal program concludes.

In summary, we found that satisfaction with the program was very high and users perceived benefits from their participation. Although we did not have a control group for comparison, preliminary data suggest that outcomes are positively impacted by the NextSteps program. A larger randomized study with an appropriate control group is needed to document the true efficacy of the program. Furthermore, given the discrepancy between those who consented (n=56) and those who actually participated in the program (n=30), additional work is needed to promote utilization of this type of program.

This project has direct relevance for the military. Hundreds of young Americans have sustained severe limb injuries in OIF and OEF conflicts. Following separation from military service and

reintegration into society, disability from injuries will impact these individuals for the remainder of their lives. A military version of the NextSteps program will assist in assuring that these soldiers achieve the highest level of function and QoL. Development of an online application, in particular, will be cost-effective and provide an ongoing mechanism to provide support for injured soldiers as they transition from inpatient rehabilitation to the community – whether that be in the military or civilian sectors. However, in adapting NextSteps for the military, attention to relevance and acceptability of the lesson material (and its presentation) to service member users is critical.

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Table 3A: Demographics of Those Consented by Participation and Treatment Hospital

	Total Consented		UMD		Carolinas	
	Participated	Did Not Participate	Participated	Did Not Participate	Participated	Did Not Participate
Number Consented	30	26	11	3	19	23
Age						
18-24	3 (10%)	5 (20%)	0	0	3	5
25-34	9 (30%)	7 (28%)	1	0	8	7
35 and over	18 (60%)	13 (52%)	10	3	8	10
Mean Age	41.6	37.1	45.6	56.3	39.4	34.5
Gender						
Male	13 (33%)	17 (65%)	6	2	7	15
Female	17 (57%)	9 (35%)	5	1	12	8
Race/Ethnicity						
Caucasian/White	23 (77%)	21 (81%)	9	3	14	18
African American	4 (13%)	4 (15%)	0	0	4	4
Other	3 (10%)	1 (4%)	2	0	1	1
Education						
8 th to 12 th grade; No diploma	3 (10%)	3 (12%)	0	0	3	3
GED or High School Graduate	8 (28%)	11(44%)	1	2	7	9
Some college	18 (62%)	11 (44%)	9	1	9	10

	Total Consented		UMD		Carolinas	
	Participated	Did Not Participate	Participated	Did Not Participate	Participated	Did Not Participate
Working Full Time	24 (80%)	19 (73%)	11	2	13	17
Working Part Time	3 (10%)	2 (8%)	0	0	3	2
Other	3 (10%)	5 (19%)	0	1	3	4
Current Activity						
Working Full Time	8 (27%)	2 (8%)	6	1	2	1
Working Part Time	2 (6%)	1(4%)	0	0	2	1
Looking for Work	7 (23%)	6 (24%)	2	1	5	5
On disability	8 (27%)	7 (28%)	2	1	6	6
Other	5 (17%)	9 (36%)	1	0	4	9

Table 3B: Injury Characteristics of Those Consented by Participation and Treatment Hospital

	Total Consented		UMD		Carolinas	
	Participated	Did Not Participate	Participated	Did Not Participate	Participated	Did Not Participate
Number Consented	30	26	11	3	19	23
Time Since Injury						
< 6 months	19 (68%)	21(84%)	1	0	18	21
>= 6 months	9 (32%)	4 (16%)	8	2	1	2
Mean (in days)	190	102	443	345	70	81
Mechanism of Injury						
Fall	4 (16%)	5 (20%)	2	1	2	4
MVC	20 (80%)	17 (68%)	4	1	16	16
Other	1(4%)	3 (12%)	0	0	1	3
Injury Severity						
≤17	18 (75%)	18 (75%)	3	1	15	17
>17	6 (25%)	6 (25%)	3	1	3	5
Any Head Trauma	(n=27)	(n=25)				
Yes	3 (11%)	4 (16%)	2	1	1	3
No	24 (88%)	21 (84%)	7	1	17	20
LOS in hospital	(n=28)	(n=25)				
<1 week	13 (46%)	14(56%)	6	1	7	13
1-3 weeks	11 (39%)	9 (36%)	2	1	9	8
More than 3 weeks	4 (14%)	2 (8%)	1	0	3	2
Mean LOS	12.96	10.67	9.88	6.35	14.42	11.04

Table 3C: Baseline Psychosocial Profile of Those Consented by Participation and Treatment Hospital

	Total Consented		U Md		Carolinas	
	Participated	Did Not Participate	Participated	Did Not Participate	Participated	Did Not Participate
Mean Scores						
Number Consented	30	26	11	3	19	23
Social Support						
-Family	26.02	24.88	25.36	14.67	26.39	26.22
-Friends	24.82	23.92	23.82	19.33	25.39	24.52
-Significant other	26.97	25.94	26.09	21.33	27.47	26.54
General Self Efficacy	7.98	7.88	7.66	6.44	8.16	8.06
SF-12 (Means)						
-Physical Health Summary Score (PCS)	33.40	30.11	40.45	39.81	29.09	28.79
-Mental Health Summary Score (MCS)	46.56	45.33	46.12	43.52	46.82	45.58
- Summary Score (SF6D)	0.59	0.53	0.68	0.60	0.53	0.52
Overall Qol (VAS)	7.65	7.12	7.41	5.00	7.79	7.41
Depression (PHQ)	6.88	8.14	5.64	9.33	7.80	7.98
Positive Affect (PANAS)	24.58	25.79	27.55	26.67	22.87	25.67
BSI Anxiety (BSI)	3.93	4.03	4.36	3.94	3.68	4.04

Table 4: Satisfaction with NextSteps by Treatment Hospital

	All Participants (n= 30)	UMd (n=11)	Carolinas (n=19)
Would you recommend Next Steps to a friend?	96%	100%	100%
On a scale of 0-10, how easy was NextSteps to use?			
0-5	4%	0%	0%
6-7	4%	11%	0%
8-10	92%	89%	100%
On a scale from 0-10, how helpful was NextSteps in your recovery?			
0-5	22%	36%	13%
6-7	26%	18%	13%
8-10	52%	46%	74%
Rate overall benefit of NextSteps (as compared to the effort it took)			
Benefits <i>far</i> outweighed the effort	43%	55%	38%
Benefits <i>somewhat</i> outweighed the effort	11%	9%	12%
Benefits <i>equaled</i> the effort	43%	36%	50%
Effort outweighed the benefits	3%	0%	0%
Rate your current overall status based on NS			
Very much better	11%	9%	44%
Much better	71%	55%	38%
Minimally better	11%	27 %	12%
No change	7%	9 %	6%
How would you rate the importance of changes in positive mood?			
Increased a meaningful amount	64%	55%	62%
Some increase, but not meaningful	18%	27%	13%
No change	18%	18%	25%
How would you rate the importance of changes in your pain?			
Decreased a meaningful amount	28%	18%	25%
Some decrease, but not meaningful	18%	0%	25%
No change	50%	73%	44%
Some increase, but not meaningful	4%	9%	6%
How would you rate your confidence in solving problems related to you injury			
Increased a meaningful amount	54%	46%	62%
Some increase, but not meaningful	29%	18%	13%
No change	17%	36%	25%

Compared to other services you received for your injury, how important was NextSteps in your overall recovery?			
Much more important	28%	18%	56%
Somewhat more important	11%	27%	19%
As important	43%	37%	19%
Somewhat less important	14%	18%	6%
Much less important	4%	0%	0%

Table 5a: Change in Outcomes — All Patients

	At Baseline	6 Weeks Post- Intervention	3 Months Post- Intervention
Social Support			
Mean Family Score	26.0	25.7	25.1
Mean Friends Score	24.8	23.5	24.4
Mean Significant Other Score	27.0	27.0	26.6
Mean Composite Score	77.8	76.2	75.9
General Self Efficacy			
Percent ≤8	50%	45%	35%
Percent >8	50%	54%	65%*
Mean Score	8.0	7.8	8.1
SF-12			
Mean PCS	33.4	35.7	38.6*
Mean MCS	46.6	50.6+	51.4**
Mean SF6D	0.60	0.66+	0.71**
Overall QoL			
Percent ≤8	73%	70%	64%
Percent >8	27%	30%	36%
Mean Score	7.65	7.15	7.68
PHQ-Depression			
Percent None-Mild	73%	61%	81%
Percent Moderate-Severe	27%	39%	19%
Percent Mean Score	6.88	7.77	5.83
Mean PANAS- Positive Affect Score	24.58	26.96	23.92
BSI Anxiety			
Percent 0-4.5	70%	39%	28%
Percent >4.5	30%	61%*	72%**
Mean Score	3.93	4.30*	4.41+

+ P < 0.10

* P < 0.05

**P < 0.01

Table 5b: Change in Outcomes - UMD Patients

	At Baseline	6 Weeks Post- Intervention	3 Months Post- Intervention
Social Support			
Mean Family Score	25.36	26.89	24.18
Mean Friends Score	23.82	25.78	24.60
Mean Significant Other Score	26.09	27.11	26.55
Mean Composite Score	75.27	79.78	74.80
General Self Efficacy			
Percent ≤ 8	73%	55%	45%
Percent > 8	27%	45%	45% +
Mean Score	7.66	8.06	8.20*
SF-12			
Mean PCS	40.45	41.97	42.86
Mean MCS	46.12	52.36*	50.28*
Mean SF6D	0.67	0.71	0.74*
Overall VAS QoL			
Percent ≤ 8	73%	78%	54%
Percent > 8	27%	22%	46%
Mean Score	7.41	7.78	8.27**
PHQ-Depression			
Percent None-Mild	73%	88%	82%
Percent Moderate-Severe	27%	22%	18%
Mean Score	5.64	5.38	4.64
Mean PANAS- Positive Affect Score	27.55	26.11	24.18+
BSI Anxiety			
Percent 0-4.5	45%	33%	18%
Percent > 4.5	55%	67%	82%+
Mean Score	4.36	4.57	4.5

+ P < 0.10

* P < 0.05

**P < 0.01

Table 5c: Change in Outcomes - Carolinas Patients

	At Baseline	6 Weeks Post- Intervention	3 Months Post- Intervention
Social Support			
Mean Family Score	26.39	24.93	25.79
Mean Friends Score	25.39	22.07	24.21
Mean Significant Other Score	27.47	26.93	26.71
Mean Composite Score	79.26	73.93+	76.71
General Self Efficacy			
Percent ≤ 8	37%	38%	25%
Percent > 8	63%	62%	75%+
Mean Score	8.16	7.66	7.97
SF-12			
Mean PCS	29.09	31.67	35.18+
Mean MCS	46.82	49.51	52.25*
Mean SF6D	0.54	0.62	0.69
Overall VAS QoL			
Percent ≤ 8	74%	64%	71%
Percent > 8	26%	36%	29%
Mean Score	7.79	6.75	7.21
PHQ-Depression			
Percent None-Mild	73%	40%	80%
Percent Moderate-Severe	27%	60%	20%
Mean Score	7.80	9.14	6.85
Mean PANAS- Positive Affect Score	22.87	27.50	23.69
BSI Anxiety			
Percent 0-4.5	84%	43%	36%
Percent > 4.5	16%	57%	64%*
Mean Score	3.68	4.12	4.34

+ P < 0.10

* P < 0.05

**P < 0.01

7 APPENDICES: Three Appendices are attached:

Appendix 1: Baseline Interview

Appendix 2: 6-Week Interview

Appendix 3: 3-Month Interview

Appendix 1

NextSteps Evaluation

Baseline Questionnaire

Date

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Study #

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Interviewer

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Consent:

[Go over consent form.]

Do you have any questions about the study? **[Answer questions]**

Section A:

As part of your participation in this study, you are being asked to complete a **15** minute interview now.

1. Every effort will be made to keep your information confidential. Your name will not appear on any forms and your answers to questions will be stored in a computer using a study number. After we have completed the interview, all identifying information will be destroyed. The research staff will keep a list of all study participants and their study numbers in a locked cabinet.
2. If you agree to complete this interview, your answers will be used for study purposes only and will not be released to anyone outside the study. The information collected will not go in your medical record or be accessible to your doctor, employer or insurance company. If you decide not to participate in the study, it will not affect any care or services that you may wish to obtain in the future.
3. If there are questions that you do not want to answer during the interview, let me know and we will skip the question. If you have any questions regarding the study, please let me know.

Do you have any questions about the study? **[Answer questions]**

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
M1	[Demographics] Let's start with some basic information about you and your family.			
1.1	What is your current age?	_____ age in years [GO TO 1.3] Refused-997 Don't Know-999	AGE	
1.2	Could you please tell me to which of the following age ranges you would belong?	18-54 years of age 1 55-64 years of age 2 65+ years of age 3 Refused-997 Don't Know-999	AGEGRP	
1.3	What is the highest grade or year in school that you have completed? DO NOT READ RESPONSES	Less than 8 th grade..... 0 8 th to 12 th grade; no diploma. 1 GED or High School graduate 2 Some college, no degree 3 Associate Degree 4 Bachelors/College Degree ... 5 Graduate Degree..... 6 Post-graduate Degree 7 Refused -997 Don't Know-999	EDUC	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
1.4	Are you of Hispanic descent? [Interviewer: If asked why we ask this, state: "It's important for us to identify subgroups of a population by both ethnicity and race. 'Hispanic' is not a covered under race, it's an ethnic group. Hispanics have been noted in previous studies to be a unique ethnic population."]	No..... 0 Yes 1 Refused-997 Don't Know-999	HISP	
1.5	What is your race? [Interviewer: read responses]	Caucasian/White 1 African American/Black2 Native American3 Asian4 Other (Go to Q1.6)5 Refused-997 Don't Know-999	RACE	
1.6	Specify "other" race	_____ [text response] Refused-997 Don't Know-999	RACE2	
M2	<p>[Major Usual Activity]</p> <p>Now I have a few questions about what you were doing most of the time <u>before your injury and what you are doing now.</u></p>			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
2.1	<p>What best describes how you spent most of your time during a typical week in the four weeks before you were injured?</p> <p>[Interviewer: read options]</p>	<p>Working full time (go to Q2.5) 1</p> <p>Working part time (go to Q2.5) 2</p> <p>Unemployed (go to Q2.5) 3</p> <p>Looking for work (go to Q2.5) 4</p> <p>Student (go to Q2.5) 5</p> <p>Homemaker (go to Q2.5) 6</p> <p>On disability (go to Q2.5) 7</p> <p>Retired (go to Q2.3) 8</p> <p>Other (go to Q2.2) 9</p> <p>Refused (go to Q2.5) -997</p> <p>Don't Know (go to Q2.5) .-999</p>	ACTIVE	
2.2	Please specify "other"	<hr/> <p>[text response]</p> <p>Refused-997</p> <p>Don't Know-999</p> <p>Go To Q2.5</p>	ACTI_OTH	
2.3	Did you retire because of your health or for some other reason?	<p>Health 1</p> <p>Other 2</p> <p>Refused-997</p> <p>Don't know.....-999</p> <p>Go To Q2.5</p> <hr/>	RETIRE	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
2.4	Please specify other reason	<hr/> [text response] Refused-997 Don't Know-999 Go to M7 <hr/>	RETIRE2	
2.5	What best describes how you are spending most of your time during a typical week NOW ? [Interviewer: read options]	Working full time (go to M3). 1 Working part time (go to M3)2 Unemployed (go to M3) 3 Looking for work (go to M3). 4 Student (go to M3) 5 Homemaker (go to M3) 6 On disability (go to M3) 7 Retired (go to Q2.7) 8 Other (go to Q2.6) 9 Refused (go to M3)-997 Don't Know (go to M3)-999 <hr/>	ACTIVE	
2.6	Please specify "other" Probe for recovering from the injury at home	<hr/> [text response] Refused-997 Don't Know-999 Go to M3 <hr/>	ACTI_OTH	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
2.7	Did you retire because of your health or for some other reason?	Health..... 1 Other2 Refused-/997 Don't know.....-999 <u>Go to M3</u>	RETIRE	
2.8	Please specify other reason	<u>[text response]</u> Refused-997 Don't Know-999 <u>Go to M7</u>	RETIRE2	
M3	[Multidimensional Scale of Perceived Support] Now I am going to read some statements that describe a person's relationships with family and friends. As I read each statement, please tell me if you strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, or strongly agree with the statement.			
3.1	There is a special person who is around when I am in need. Do you...[Read Options]	Strongly Disagree 1 Disagree2 Slightly Disagree3 Neither Agree nor Disagree..4 Slightly Agree5 Agree.....6 Strongly Agree.....7	MSPS1	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.2	There is a special person with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS2	
3.3	My family really tries to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS3	
3.4	I get the emotional help and support I need from my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS4	
3.5	I have a special person who is a real source of comfort to me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS5	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.6	My friends really try to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS6	
3.7	I can count on my friends when things go wrong.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS7	
3.8	I can talk about my problems with my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS8	
3.9	I have friends with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS9	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.10	There is a special person in my life who cares about my feelings.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS10	
3.11	My family is willing to help me make decisions.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS11	
3.12	I can talk about my problems with my friends.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS12	
M4	[General Self-Efficacy Questions] For the following questions, please tell me how certain are you that you can now do each of these tasks. Use a scale of 0 to 10, where 0 means you are very uncertain, 5 means you are neither certain nor uncertain you can do the task, and 10 means you are very certain.			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.1	On a scale of 0 to 10, how certain are you that you can deal with problems that come up with family and friends?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN1	
4.2	[On a scale of 0 to 10, how certain are you] ...that you can maintain a positive mood or keep yourself feeling good?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN2	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.3	<p>[On a scale of 0 to 10, how certain are you]</p> <p>... that you can do something to help yourself feel better if you are feeling blue?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN3	
4.4	<p>[On a scale of 0 to 10, how certain are you]</p> <p>...that you can manage the pain from your injury?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.5	On a scale of 0 to 10, how certain are you that you can manage other problems related to your injury so that you can do things you enjoy?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN5	
4.6	[On a scale of 0 to 10, how certain are you] ...that you can deal with the frustration related to your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.7	<p>[On a scale of 0 to 10, how certain are you]</p> <p>...that you can solve problems related to your injury?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN7	
4.8	<p>[On a scale of 0 to 10, how certain are you]</p> <p>... that you can get the help you need to manage your injury?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN9	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.9	[On a scale of 0 to 10, how certain are you] ... that you can get find the information you need about your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN10	
M5	[SF-12] Now I would like to ask you to think about your overall health and sense of well being.			
5.0	Thinking about your health in the past 4 weeks, in general, would you say your health was...	Excellent.....1 Very good2 Good3 Fair4 Poor.....5 Refused997 Don't Know999	SF36_1	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.1	Compared to one year ago, how would you rate your health in general <u>now</u> ?	Much better now than one year ago1 Somewhat better than one year ago2 About the same as one year ago3 Somewhat worse now than one year ago4 Much worse than one year ago5 Refused997 Don't know.....999	SF36_2	
The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?				
5.2	Does your health limit you in doing... Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_4	
5.3	How about... Climbing several flights of stairs. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?			
5.4	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_14	
5.5	Were limited in the kind of work or other activities. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_15	
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?			
5.6	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_18	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.7	Did work or other activities less carefully than usual. Would you say... [READ RESPONSE OPTIONS]	Yes 1 No.....2 Refused997 DK999	SF36_19	
5.8	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Not at all0 A little bit..... 1 Moderately.....2 Quite a bit.....3 Extremely4 Refused997 DK999		
5.9	(In the past 4 weeks,) on <u>average</u> , how intense was your pain, rated on a 0 to 10 scale where 0 is “no pain” and 10 is “pain as bad as it could be?	Pain 0-10 _____ Refused-997 Don't know.....-999	AVERAGE	
The following questions are about how you felt and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.				

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.10	How much of the time during the past 4 weeks ... Have you felt calm and peaceful? Would you say [READ RESPONSE OPTIONS]	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused997 DK999	SF36_26	
5.11	(How much of the time during the past 4 weeks ...) Did you have a lot of energy? Would you say . . . [READ RESPONSE OPTIONS]	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused997 DK999	SF36_27	
5.12	(How much of the time during the past 4 weeks ...) Did you feel downhearted and blue? Would you say . .	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused997 DK999	SF36_28	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.13	During the past 4 weeks, how much of the time has your <u>physical health</u> or <u>emotional problems</u> interfered with your social activities (like visiting friends, relatives, etc.)? Would you say . .	All of the time..... 1 Most of the time..... 2 A good bit of the time 3 Some of the time 4 A little of the time..... 5 None of the time 6 Refused 997 DK 999	SF36_32	
5.14	My health is excellent. Is this statement....	Definitely true 1 Mostly true 2 Don't Know 999 Mostly false 3 Definitely false 4 Refused 997	SF36_36	
	[Quality of Life]			
5.15	On a scale from 0 to 10, with 0 being the lowest and 10 being the highest, how would you rate your overall <u>quality</u> of life now ?	<u> </u> Refused 997 Don't know 999	SF36_37	
M6	Depression – PHQ Now think about the last 2 weeks. Over <u>the last 2 weeks</u>, how often have you been bothered by any of the following problems?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.1	How often have you been bothered by.... Little interest or pleasure in doing things [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ1	
6.2	(How often have you been bothered by....) Feeling down, depressed, or hopeless [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ2	
6.3	(How often have you been bothered by....) Trouble falling or staying asleep, or sleeping too much	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ3	
6.4	Feeling tired or having little energy	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.5	Poor appetite or overeating	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ5	
6.6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ6	
6.7	Trouble concentrating on things, such as reading the newspaper or watching television	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ7	
6.8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ8	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.9	Thoughts that you would be better off dead or of hurting yourself in some way	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ9	
M7	<p>[PANAS]</p> <p>I am now going to read a list of words that describe different feelings or emotions. As I read each item, please tell me to what extent during the <u>2 weeks</u> you have felt this way using the following response choices: extremely, quite a bit, moderately, a little, or very slightly or not at all.</p>			
7.1	During the past 2 weeeks , have you felt: Interested? Would you say:	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS1	
7.2	Excited	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS3	
7.3	Strong	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS5	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.4	Enthusiastic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS9	
7.5	Proud	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS10	
7.6	Alert	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS12	
7.7	Inspired	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS14	
7.8	Determined	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS16	
7.9	Attentive	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS17	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.10	Active	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS19	
M8	[BSI - Anxiety] I have just a few more questions and we will be done. I am going to read a list of problems people sometimes have. Please tell me how much that problem has distressed or bothered you during the <u>past 2 weeks</u> including today.			
8.1	Nervousness or shakiness inside Would you say:	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI1	
8.2	Suddenly scared for no reason	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI2	
8.3	Feeling fearful	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI3	
8.4	Feeling tense or keyed up	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
8.5	Spells of terror or panic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI5	
8.6	Feeling so restless you couldn't sit still	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI6	
END	Thank you for your time. The information you provided today will be very helpful to our study. Again, thank you for answering my questions. [END]			

Appendix 2

NextSteps Evaluation

Follow-up Questionnaire – 6-Weeks

Date			-				-	1	0
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Study #		-			
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Interviewer		
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Consent:

[Go over consent form.]

Do you have any questions about the study? **[Answer questions]**

Section A:

As part of your participation in this study, you are being asked to complete a 30 minute interview now.

4. Every effort will be made to keep your information confidential. Your name will not appear on any forms and your answers to questions will be stored in a computer using a study number. After we have completed the interview, all identifying information will be destroyed. The research staff will keep a list of all study participants and their study numbers in a locked cabinet.
5. If you agree to complete this interview, your answers will be used for study purposes only and will not be released to anyone outside the study. The information collected will not go in your medical record or be accessible to your doctor, employer or insurance company. If you decide not to participate in the study, it will not affect any care or services that you may wish to obtain in the future.
6. If there are questions that you do not want to answer during the interview, let me know and we will skip the question. If you have any questions regarding the study, please let me know.

Do you have any questions about the study? **[Answer questions]**

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
M2	[Major Usual Activity]			
	First I have a few questions about how you have spent most of your time during the past four weeks.			
2.1	<p>What best describes how you spent most of your time during a typical week in the past four weeks?</p> <p>[Interviewer: read options]</p>	<p>Working full time (go to M3). 1 Working part time (go to M3)2 Unemployed (go to Q2.5)3 Looking for work (go to M3). 4 Student (go to M3).....5 Homemaker (go to M3).....6 On disability (go to M3).....7 Retired (go to Q2.3).....8 Other (go to Q2.2)9 Refused (go to M3).....-997 Don't Know (go to M3)-999</p>	ACTIVE	
2.2	<p>Please specify "other"</p> <p>Probe for recovering from the injury at home</p>	<hr/> <p>[text response] Refused-997 Don't Know-999</p> <p>Go To M3</p>	ACTI_OTH	
2.3	<p>Did you retire because of your health or for some other reason?</p>	<p>Health 1 Other2 Refused-/997 Don't know.....-999</p> <p>Go To M3</p>	RETIRE	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
2.4	Please specify other reason	[text response] Refused-997 Don't Know-999 Go to M7	RETIRE2	
M3	[Multidimensional Scale of Perceived Support] Now I am going to read some statements that describe a person's relationships with family and friends. As I read each statement, please tell me if you strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, or strongly agree with the statement.			
3.1	There is a special person who is around when I am in need. Do you...[Read Options]	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS1	
3.2	There is a special person with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS2	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.3	My family really tries to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS3	
3.4	I get the emotional help and support I need from my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS4	
3.5	I have a special person who is a real source of comfort to me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS5	
3.6	My friends really try to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.7	I can count on my friends when things go wrong.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS7	
3.8	I can talk about my problems with my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS8	
3.9	I have friends with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS9	
3.10	There is a special person in my life who cares about my feelings.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS10	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.11	My family is willing to help me make decisions.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS11	
3.12	I can talk about my problems with my friends.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS12	
M4	<p>[General Self-Efficacy Questions]</p> <p>For the following questions, please tell me how certain are you that you can now do each of these tasks. Use a scale of 0 to 10, where 0 means you are very uncertain, 5 means you are neither certain nor uncertain you can do the task, and 10 means you are very certain.</p>			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.1	On a scale of 0 to 10, how certain are you that you can deal with problems that come up with family and friends?	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 10 Refused -997 Don't Know -999	SEGEN1	
4.2	[On a scale of 0 to 10, how certain are you] ...that you can maintain a positive mood or keep yourself feeling good?	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 10 Refused -997 Don't Know -999	SEGEN2	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.3	<p>[On a scale of 0 to 10, how certain are you]</p> <p>... that you can do something to help yourself feel better if you are feeling blue?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN3	
4.4	<p>[On a scale of 0 to 10, how certain are you]</p> <p>...that you can manage the pain from your injury?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.5	On a scale of 0 to 10, how certain are you that you can manage other problems related to your injury so that you can do things you enjoy?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN5	
4.6	[On a scale of 0 to 10, how certain are you] ...that you can deal with the frustration related to your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.7	[On a scale of 0 to 10, how certain are you] ...that you can solve problems related to your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN7	
4.8	[On a scale of 0 to 10, how certain are you] ... that you can get the help you need to manage your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN9	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.9	[On a scale of 0 to 10, how certain are you] ... that you can get find the information you need about your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN10	
M5	[SF-12] Now I would like to ask you to think about your overall health and sense of well being.			
5.16	Thinking about your health in the past 4 weeks, in general, would you say your health was...	Excellent.....1 Very good2 Good3 Fair4 Poor.....5 Refused997 Don't Know999	SF36_1	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.17	Compared to one year ago, how would you rate your health in general <u>now</u> ?	Much better now than one year ago11 Somewhat better than one year ago22 About the same as one year ago33 Somewhat worse now than one year ago44 Much worse than one year ago55 Refused997 Don't know.....999	SF36_2	
The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?				
5.18	Does you health limit you in doing... Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_4	
5.19	How about... Climbing several flights of stairs. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?			
5.20	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_14	
5.21	Were limited in the kind of work or other activities. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_15	
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.22	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes 1 No.....2 Refused997 DK999	SF36_18	
5.23	Did work or other activities less carefully than usual. Would you say... [READ RESPONSE OPTIONS]	Yes 1 No.....2 Refused997 DK999	SF36_19	
5.24	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Not at all 0 A little bit..... 1 Moderately.....2 Quite a bit.....3 Extremely4 Refused997 DK999		
5.25	(In the past 4 weeks,) on <u>average</u> , how intense was your pain, rated on a 0 to 10 scale where 0 is “no pain” and 10 is “pain as bad as it could be?”	Pain 0-10 _____ Refused-997 Don't know.....-999	AVERAGE	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
	The following questions are about how you felt and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.			
5.26	How much of the time during the past 4 weeks ... Have you felt calm and peaceful? Would you say [READ RESPONSE OPTIONS]	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK999	SF36_26	
5.27	(How much of the time during the past 4 weeks ...) Did you have a lot of energy? Would you say . . . [READ RESPONSE OPTIONS]	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK999	SF36_27	
5.28	(How much of the time during the past 4 weeks ...) Did you feel downhearted and blue? Would you say . .	All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK999	SF36_28	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.29	During the past 4 weeks, how much of the time has your <u>physical health</u> or <u>emotional problems</u> interfered with your social activities (like visiting friends, relatives, etc.)? Would you say . .	All of the time..... 1 Most of the time..... 2 A good bit of the time 3 Some of the time 4 A little of the time..... 5 None of the time 6 Refused 997 DK 999	SF36_32	
5.30	My health is excellent. Is this statement....	Definitely true 1 Mostly true 2 Don't Know 999 Mostly false 3 Definitely false 4 Refused 997	SF36_36	
	[Quality of Life]			
5.31	On a scale from 0 to 10, with 0 being the lowest and 10 being the highest, how would you rate your overall <u>quality</u> of life now?	<u> </u> Refused 997 Don't know 999	SF36_37	
M6	Depression – PHQ Now think about the last 2 weeks. Over the <u>last 2 weeks</u>, how often have you been bothered by any of the following problems?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.1	How often have you been bothered by.... Little interest or pleasure in doing things [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ1	
6.2	(How often have you been bothered by....) Feeling down, depressed, or hopeless [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ2	
6.3	(How often have you been bothered by....) Trouble falling or staying asleep, or sleeping too much	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ3	
6.4	Feeling tired or having little energy	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.5	Poor appetite or overeating	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ5	
6.6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ6	
6.7	Trouble concentrating on things, such as reading the newspaper or watching television	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ7	
6.8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ8	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.9	Thoughts that you would be better off dead or of hurting yourself in some way	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ9	
M7	<p>[PANAS]</p> <p>I am now going to read a list of words that describe different feelings or emotions. As I read each item, please tell me to what extent <u>during the 2 weeks</u> you have felt this way using the following response choices: extremely, quite a bit, moderately, a little, or very slightly or not at all.</p>			
7.1	During the past 2 weeeks , have you felt: Interested? Would you say:	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS1	
7.2	Excited	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS3	
7.3	Strong	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS5	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.4	Enthusiastic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS9	
7.5	Proud	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS10	
7.6	Alert	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS12	
7.7	Inspired	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS14	
7.8	Determined	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS16	
7.9	Attentive	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS17	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.10	Active	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS19	
M8	[BSI - Anxiety] I am now going to read a list of problems people sometimes have. Please tell me how much that problem has distressed or bothered you during the <u>past 2 weeks</u> including today.			
8.1	Nervousness or shakiness inside Would you say:	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI1	
8.2	Suddenly scared for no reason	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI2	
8.3	Feeling fearful	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI3	
8.4	Feeling tense or keyed up	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
8.5	Spells of terror or panic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI5	
8.6	Feeling so restless you couldn't sit still	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI6	
M9	<p>[Satisfaction]</p> <p>Finally, I would like to ask you just a few questions about your satisfaction with the NextSteps program.</p>			
9.1	On a scale from 0 to 10, how helpful was the NextSteps Program in your recovery? (0 means the class was not at all helpful and 10 means the class was extremely helpful)	0-10 _____		
		Refused-997 Don't know.....-999		
9.2	Would you recommend the NextSteps Program to a friend or family member who has been injured ?	No..... 0 Yes 1 Refused-997 Don't Know-999		
9.3	Now let's look at the parts of the program. How helpful was each of the following parts?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.4	The lessons themselves? (0 means the lessons were not at all helpful and 10 means the lessons were extremely helpful)	0-10 _____		
		̄Refused-997 Don't know.....-999		
9.5	The chats (0 means the chats were not at all helpful and 10 means the chats were extremely helpful)	0-10 _____		
		̄Refused-997 Don't know.....-999		
9.6	The forums (0 means the forums were not at all helpful and 10 means the forums were extremely helpful)	0-10 _____		
		̄Refused-997 Don't know.....-999		
9.7	The workbook (0 means the workbook was not at all helpful and 10 means the workbook was extremely helpful)	0-10 _____		
		̄Refused-997 Don't know.....-999		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.8	<p>Your journal</p> <p>(0 means the journal was not at all helpful and 10 means the journal was were extremely helpful)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		
9.9	<p>How important is it to work through the lessons and use the chats and forums with the same group of people?</p> <p>0 means being with the same group of people was not at all important and 10 means that being with the same group of people was extremely important)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		
9.10	<p>On a scale of 0-10 how easy was the NextSteps to use?</p> <p>(0 means the website was not at all easy to use and 10 means the website was very easy to use)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.11	As a result of participating in the NextSteps program, would you say your overall status is...[Read options]	Very much better 1 Much better 2 Minimally better 3 No change 4 A little worse 5 Much worse 6 Very much worse..... 7		
9.12	How would you rate the overall benefit you received from the NextSteps program, taking into account the effort you put into it? Would you say [Read options]	The benefits far outweighed the effort 1 The benefits somewhat outweighed the effort 2 The benefits equaled the effort I put into it..... 3 The effort somewhat outweighed the benefits 4 The effort far outweighed the benefits..... 5		
9.13	How would you rate the importance of any changes in pain you experienced after participating in the Program? Would you say [Read options]	My pain decreased a meaningful amount..... 1 There was some decrease in my pain, but not enough to be meaningful..... 2 There was no change in my pain 3 There was some increase in my pain, but not enough to be meaningful..... 4 My pain decreased a meaningful amount..... 5		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.14	<p>How would you rate the importance of any changes in mood you experienced after participating in the Program ?</p> <p>Would you say [Read options]</p>	<p>My positive mood increased a meaningful amount..... 1</p> <p>There was some increase in my positive mood, but not enough to be meaningful 2</p> <p>There was no change in my mood 3</p> <p>There was some increase in negative mood, but not enough to be meaningful 4</p> <p>My negative mood increased a meaningful amount..... 5</p>		
9.15	<p>How would you rate the change in your confidence to solve problems after participating in the Program? [Read options]</p>	<p>My confidence to solve problems has increased a meaningful amount..... 1</p> <p>There was some increase in my confidence to solve problems, but not enough to be meaningful..... 2</p> <p>There was not change in my confidence to solve problems 3</p> <p>There was some decrease in my confidence to solve problems, but not enough to be meaningful..... 4</p> <p>My confidence to solve problems has decreased a meaningful amount..... 5</p>		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.16	Compared to other services you have received since you were injured how important was the NextSteps Program in your recovery?	Much more important Somewhat more important As important Somewhat less important Much less important		
9.17	What did you like best about the program?			
9.18	What did you like least about the program?			
9.19	What would you change about the program? [probe for up to three things]			
9.20	What is the most important thing you learned or change you made because of the program?			
9.21	Is there any other feedback you would like to share about the program?			

#	<i>QUESTION</i>	<i>RESPONSE OPTIONS</i>	<i>SAS VARIABLE NAME</i>	<i>COMMENTS</i>
END	Thank you for your time. The information you provided today will be very helpful to our study. Again, thank you for answering my questions. [END]			

Appendix 3

NextSteps Evaluation

Follow-up Questionnaire- 3 Month

Date			-			-	1	0
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Study #		-			
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Interviewer		
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Consent:

[Go over consent form.]

Do you have any questions about the study? **[Answer questions]**

Section A:

As part of your participation in this study, you are being asked to complete a 30 minute interview now.

7. Every effort will be made to keep your information confidential. Your name will not appear on any forms and your answers to questions will be stored in a computer using a study number. After we have completed the interview, all identifying information will be destroyed. The research staff will keep a list of all study participants and their study numbers in a locked cabinet.
8. If you agree to complete this interview, your answers will be used for study purposes only and will not be released to anyone outside the study. The information collected will not go in your medical record or be accessible to your doctor, employer or insurance company. If you decide not to participate in the study, it will not affect any care or services that you may wish to obtain in the future.
9. If there are questions that you do not want to answer during the interview, let me know and we will skip the question. If you have any questions regarding the study, please let me know.

Do you have any questions about the study? **[Answer questions]**

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
M2	[Major Usual Activity]			
	First I have a few questions about how you have spent most of your time during the past four weeks.			
2.5	<p>What best describes how you spent most of your time during a typical week in the past four weeks?</p> <p>[Interviewer: read options]</p>	<p>Working full time (go to M3). 1 Working part time (go to M3)2 Unemployed (go to Q2.5)3 Looking for work (go to M3).4 Student (go to M3).....5 Homemaker (go to M3).....6 On disability (go to M3).....7 Retired (go to Q2.3).....8 Other (go to Q2.2)9 Refused (go to M3).....-997 Don't Know (go to M3)-999</p>	ACTIVE	
2.6	<p>Please specify "other"</p> <p>Probe for recovering from the injury at home</p>	<hr/> <p>[text response] Refused-997 Don't Know-999</p> <p>Go To M3</p>	ACTI_OTH	
2.7	<p>Did you retire because of your health or for some other reason?</p>	<p>Health 1 Other2 Refused-/997 Don't know.....-999</p> <p>Go To M3</p> <hr/>	RETIRE	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
2.8	Please specify other reason	[text response] Refused-997 Don't Know-999 Go to M7	RETIRE2	
M3	[Multidimensional Scale of Perceived Support] Now I am going to read some statements that describe a person's relationships with family and friends. As I read each statement, please tell me if you strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, or strongly agree with the statement.			
3.13	There is a special person who is around when I am in need. Do you...[Read Options]	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS1	
3.14	There is a special person with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS2	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.15	My family really tries to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS3	
3.16	I get the emotional help and support I need from my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS4	
3.17	I have a special person who is a real source of comfort to me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS5	
3.18	My friends really try to help me.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.19	I can count on my friends when things go wrong.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS7	
3.20	I can talk about my problems with my family.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS8	
3.21	I have friends with whom I can share my joys and sorrows.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS9	
3.22	There is a special person in my life who cares about my feelings.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS10	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
3.23	My family is willing to help me make decisions.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS11	
3.24	I can talk about my problems with my friends.	Strongly Disagree 1 Disagree 2 Slightly Disagree 3 Neither Agree nor Disagree.. 4 Slightly Agree 5 Agree..... 6 Strongly Agree..... 7	MSPS12	
M4	<p>[General Self-Efficacy Questions]</p> <p>For the following questions, please tell me how certain are you that you can now do each of these tasks. Use a scale of 0 to 10, where 0 means you are very uncertain, 5 means you are neither certain nor uncertain you can do the task, and 10 means you are very certain.</p>			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.10	On a scale of 0 to 10, how certain are you that you can deal with problems that come up with family and friends?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN1	
4.11	[On a scale of 0 to 10, how certain are you] ...that you can maintain a positive mood or keep yourself feeling good?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN2	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.12	<p>[On a scale of 0 to 10, how certain are you]</p> <p>... that you can do something to help yourself feel better if you are feeling blue?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN3	
4.13	<p>[On a scale of 0 to 10, how certain are you]</p> <p>...that you can manage the pain from your injury?</p>	<p>00</p> <p>11</p> <p>22</p> <p>33</p> <p>44</p> <p>55</p> <p>66</p> <p>77</p> <p>88</p> <p>99</p> <p>1010</p> <p>Refused-997</p> <p>Don't Know-999</p>	SEGEN4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.14	On a scale of 0 to 10, how certain are you that you can manage other problems related to your injury so that you can do things you enjoy?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN5	
4.15	[On a scale of 0 to 10, how certain are you] ...that you can deal with the frustration related to your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.16	<p>[On a scale of 0 to 10, how certain are you]</p> <p>...that you can solve problems related to your injury?</p>	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 10 Refused -997 Don't Know -999	SEGEN7	
4.17	<p>[On a scale of 0 to 10, how certain are you]</p> <p>... that you can get the help you need to manage your injury?</p>	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 10 Refused -997 Don't Know -999	SEGEN9	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
4.18	[On a scale of 0 to 10, how certain are you] ... that you can get find the information you need about your injury?	00 11 22 33 44 55 66 77 88 99 1010 Refused-997 Don't Know-999	SEGEN10	
M5	[SF-12] Now I would like to ask you to think about your overall health and sense of well being.			
5.32	Thinking about your health in the past 4 weeks, in general, would you say your health was...	Excellent.....1 Very good2 Good3 Fair4 Poor.....5 Refused997 Don't Know999	SF36_1	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.33	Compared to one year ago, how would you rate your health in general <u>now</u> ?	Much better now than one year ago11 Somewhat better than one year ago22 About the same as one year ago33 Somewhat worse now than one year ago44 Much worse than one year ago55 Refused997 Don't know.....999	SF36_2	
The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?				
5.34	Does your health limit you in doing... Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_4	
5.35	How about... Climbing several flights of stairs. Are you limited a lot, a little, or not at all.	Yes, limited a lot1 Yes, limited a little2 No, not limited at all.....3 Refused997 Don't Know999	SF36_6	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?			
5.36	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_14	
5.37	Were limited in the kind of work or other activities. Would you say... [READ RESPONSE OPTIONS]	Yes1 No.....2 Refused997 DK999	SF36_15	
	During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.38	Accomplished less than you would like. Would you say... [READ RESPONSE OPTIONS]	Yes 1 No.....2 Refused997 DK999	SF36_18	
5.39	Did work or other activities less carefully than usual. Would you say... [READ RESPONSE OPTIONS]	Yes 1 No.....2 Refused997 DK999	SF36_19	
5.40	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	Not at all 0 A little bit..... 1 Moderately..... 2 Quite a bit..... 3 Extremely 4 Refused 997 DK 999		
5.41	(In the past 4 weeks,) on <u>average</u> , how intense was your pain, rated on a 0 to 10 scale where 0 is “no pain” and 10 is “pain as bad as it could be?”	Pain 0-10 _____ Refused-997 Don't know.....-999	AVERAGE	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
	<p>The following questions are about how you felt and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.</p>			
5.42	<p>How much of the time during the past 4 weeks ... Have you felt calm and peaceful? Would you say . . .</p> <p>[READ RESPONSE OPTIONS]</p>	<p>All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK.....999</p>	SF36_26	
5.43	<p>(How much of the time during the past 4 weeks ...) Did you have a lot of energy? Would you say . . .</p> <p>[READ RESPONSE OPTIONS]</p>	<p>All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK.....999</p>	SF36_27	
5.44	<p>(How much of the time during the past 4 weeks ...) Did you feel downhearted and blue? Would you say . . .</p>	<p>All of the time.....1 Most of the time.....2 A good bit of the time3 Some of the time4 A little of the time.....5 None of the time6 Refused.....997 DK.....999</p>	SF36_28	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
5.45	During the past 4 weeks, how much of the time has your <u>physical health</u> or <u>emotional problems</u> interfered with your social activities (like visiting friends, relatives, etc.)? Would you say . .	All of the time..... 1 Most of the time..... 2 A good bit of the time 3 Some of the time 4 A little of the time..... 5 None of the time 6 Refused 997 DK 999	SF36_32	
5.46	My health is excellent. Is this statement....	Definitely true 1 Mostly true 2 Don't Know 999 Mostly false 3 Definitely false 4 Refused 997	SF36_36	
	[Quality of Life]			
5.47	On a scale from 0 to 10, with 0 being the lowest and 10 being the highest, how would you rate your overall <u>quality</u> of life now?	<u> </u> Refused 997 Don't know 999	SF36_37	
M6	Depression – PHQ Now think about the last 2 weeks. Over the <u>last 2 weeks</u>, how often have you been bothered by any of the following problems?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.1	How often have you been bothered by.... Little interest or pleasure in doing things [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ1	
6.2	(How often have you been bothered by....) Feeling down, depressed, or hopeless [Read response categories]	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ2	
6.3	(How often have you been bothered by....) Trouble falling or staying asleep, or sleeping too much	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ3	
6.4	Feeling tired or having little energy	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.5	Poor appetite or overeating	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ5	
6.6	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ6	
6.7	Trouble concentrating on things, such as reading the newspaper or watching television	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ7	
6.8	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	Not at all0 Several days1 More than half the days2 Nearly every day3 Refused-997 Don't know-999	PHQ8	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
6.9	Thoughts that you would be better off dead or of hurting yourself in some way	Not at all0 Several days.....1 More than half the days2 Nearly every day.....3 Refused-997 Don't know.....-999	PHQ9	
M7	<p>[PANAS]</p> <p>I am now going to read a list of words that describe different feelings or emotions. As I read each item, please tell me to what extent <u>during the 2 weeks</u> you have felt this way using the following response choices: extremely, quite a bit, moderately, a little, or very slightly or not at all.</p>			
7.11	During the past 2 weeks , have you felt: Interested? Would you say:	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS1	
7.12	Excited	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS3	
7.13	Strong	Extremely,1 Quite a bit,2 Moderately,.....3 A little, or4 Very slightly or not at all5	PANAS5	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.14	Enthusiastic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS9	
7.15	Proud	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS10	
7.16	Alert	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS12	
7.17	Inspired	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS14	
7.18	Determined	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS16	
7.19	Attentive	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS17	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
7.20	Active	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Very slightly or not at all 5	PANAS19	
M8	[BSI - Anxiety] I am now going to read a list of problems people sometimes have. Please tell me how much that problem has distressed or bothered you during the <u>past 2 weeks</u> including today.			
8.1	Nervousness or shakiness inside Would you say:	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI1	
8.2	Suddenly scared for no reason	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI2	
8.3	Feeling fearful	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI3	
8.4	Feeling tense or keyed up	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI4	

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
8.5	Spells of terror or panic	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI5	
8.6	Feeling so restless you couldn't sit still	Extremely, 1 Quite a bit, 2 Moderately, 3 A little, or 4 Not at all 5	BSI6	
M9	[Satisfaction]			
	Finally, I would like to ask you just a few questions about your satisfaction with the NextSteps program.			
9.22	On a scale from 0 to 10, how helpful was the NextSteps Program in your recovery? (0 means the class was not at all helpful and 10 means the class was extremely helpful)	0-10 _____		
		Refused-997 Don't know.....-999		
9.23	Would you recommend the NextSteps Program to a friend or family member who has been injured ?	No..... 0 Yes 1 Refused-997 Don't Know-999		
9.24	Now let's look at the parts of the program. How helpful was each of the following parts?			

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.25	<p>The lessons themselves?</p> <p>(0 means the lessons were not at all helpful and 10 means the lessons were extremely helpful)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		
9.26	<p>The chats</p> <p>(0 means the chats were not at all helpful and 10 means the chats were extremely helpful)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		
9.27	<p>The forums</p> <p>(0 means the forums were not at all helpful and 10 means the forums were extremely helpful)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		
9.28	<p>The workbook</p> <p>(0 means the workbook was not at all helpful and 10 means the workbook was extremely helpful)</p>	<p>0-10</p> <hr/> <p>Refused-997 Don't know.....-999</p>		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.29	<p>Your journal</p> <p>(0 means the journal was not at all helpful and 10 means the journal was were extremely helpful)</p>	<p>0-10</p> <p>_____</p> <p>Refused-997</p> <p>Don't know.....-999</p>		
9.30	<p>How important is it to work through the lessons and use the chats and forums with the same group of people?</p> <p>0 means being with the same group of people was not at all important and 10 means that being with the same group of people was extremely important)</p>	<p>0-10</p> <p>_____</p> <p>Refused-997</p> <p>Don't know.....-999</p>		
9.31	<p>On a scale of 0-10 how easy was the NextSteps to use?</p> <p>(0 means the website was not at all easy to use and 10 means the website was very easy to use)</p>	<p>0-10</p> <p>_____</p> <p>Refused-997</p> <p>Don't know.....-999</p>		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.32	As a result of participating in the NextSteps program, would you say your overall status is...[Read options]	Very much better 1 Much better 2 Minimally better 3 No change 4 A little worse 5 Much worse 6 Very much worse 7		
9.33	How would you rate the overall benefit you received from the NextSteps program, taking into account the effort you put into it? Would you say [Read options]	The benefits far outweighed the effort 1 The benefits somewhat outweighed the effort 2 The benefits equaled the effort I put into it 3 The effort somewhat outweighed the benefits 4 The effort far outweighed the benefits 5		
9.34	How would you rate the importance of any changes in pain you experienced after participating in the Program? Would you say [Read options]	My pain decreased a meaningful amount 1 There was some decrease in my pain, but not enough to be meaningful 2 There was no change in my pain 3 There was some increase in my pain, but not enough to be meaningful 4 My pain decreased a meaningful amount 5		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.35	<p>How would you rate the importance of any changes in mood you experienced after participating in the Program ?</p> <p>Would you say [Read options]</p>	<p>My positive mood increased a meaningful amount..... 1</p> <p>There was some increase in my positive mood, but not enough to be meaningful 2</p> <p>There was no change in my mood 3</p> <p>There was some increase in negative mood, but not enough to be meaningful 4</p> <p>My negative mood increased a meaningful amount..... 5</p>		
9.36	<p>How would you rate the change in your confidence to solve problems after participating in the Program? [Read options]</p>	<p>My confidence to solve problems has increased a meaningful amount..... 1</p> <p>There was some increase in my confidence to solve problems, but not enough to be meaningful..... 2</p> <p>There was not change in my confidence to solve problems 3</p> <p>There was some decrease in my confidence to solve problems, but not enough to be meaningful..... 4</p> <p>My confidence to solve problems has decreased a meaningful amount..... 5</p>		

#	QUESTION	RESPONSE OPTIONS	SAS VARIABLE NAME	COMMENTS
9.37	Compared to other services you have received since you were injured how important was the NextSteps Program in your recovery?	Much more important.....1 Somewhat more important.....2 As important3 Somewhat less important.....4 Much less important.....5		
9.38	What did you like best about the program?			
9.39	What did you like least about the program?			
9.40	What would you change about the program? [probe for up to three things]			
9.41	What is the most important thing you learned or change you made because of the program?			

#	<i>QUESTION</i>	<i>RESPONSE OPTIONS</i>	<i>SAS VARIABLE NAME</i>	<i>COMMENTS</i>
9.42	Is there any other feedback you would like to share about the program?			
END	Thank you for your time. The information you provided today will be very helpful to our study. Again, thank you for answering my questions. [END]			