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Award Number: W81XWH- 06-1-0343

TITLE: Self Managing the Consequences of Major Limb Trauma

PRINCIPAL INVESTIGATOR: Ellen J. MacKenzie, Ph.D.

CONTRACTING ORGANIZATION: Johns Hopkins University
Bloomberg School of Public Health
Baltimore, MD 21205

REPORT DATE: December 2010

TYPE OF REPORT: Revised Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
December 2010	Revised Annual	3 February 2009 - 30 November 2010

4. TITLE AND SUBTITLE

Self Managing the Consequences of Major Limb Trauma

5a. CONTRACT NUMBER

5b. GRANT NUMBER
W81XWH- 06-1-0343

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Ellen J. MacKenzie, Ph.D., Stephen T. Wegener, Ph.D.,
Renan C. Castillo, Ph.D., Nathan M. Parmer, Ph.D.

E-Mail: emackenz@jhsph.edu

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Johns Hopkins University
Bloomberg School of Public Health
Baltimore, MD 21205

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The objective of this research is to develop and evaluate the efficacy of a computer-based self management program (heretofore referred to as NextSteps Program) for reducing secondary conditions and improving function following major lower limb trauma. The intervention will build on widely accepted self-management programs developed for persons with arthritis as well as components of a face-to-face self-management program for civilians with long-standing limb loss. It will be 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 post-traumatic stress disorder (PTSD), and the maintenance or acquisition of employment or return to active duty. 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. The military version of SM program will provide injured soldiers with an ongoing mechanism of support as they transition from inpatient rehabilitation to the community ï whether that be in the military or civilian sectors.

15. SUBJECT TERMS
Self Management, Trauma, Online Learning

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			USAMRMC
U	U	U	UU	126	19b. TELEPHONE NUMBER *(include area code)*

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Self-Managing the Consequences of Major Limb Trauma
Annual Report – December, 2010

INTRODUCTION. The objective of this research is 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 was built on widely accepted self-management programs developed for persons with arthritis as well as components of a face-to-face self-management 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 post-traumatic stress disorder (PTSD), and the maintenance or acquisition of employment or return to active duty. Specific aims (revised in April 2009) of the project are: (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 on online version of the self-management program for persons sustaining major limb trauma (heretofore referred to as Next Steps); (3) to evaluate the feasibility and acceptability of the Next Steps program in 12-15 civilians treated at a large, Level I trauma center; and (4) to engage our military colleagues and service members as advisors to assist us in modifying the content of the Next Steps Program for service members and veterans. We will not have sufficient funds remaining at the end of the project period to fully develop and test the military version of NextSteps at Walter Reed as originally planned. However, we will produce a detailed plan for modifying the program in the future.

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. The military version of the SM program will 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.

PROGRESS as of December 31, 2010:

We completed development of (1) an accessible website that will serve as the foundation for managing participants in the NextSteps program; and (2) 12 fully developed Next Steps lessons programmed in flash. We beta tested the website and the lessons with 6 individuals. Based on their feedback we made revisions to both the website and the 12 lessons. The website can be accessed at www.nextstepsonline.org. To access the lessons, please follow the steps below. The lessons are not yet open to the public and we are limiting access until our pilot is completed.

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
6. 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 CHCEK YOUR JUNK EMIAL FOR THIS MESSAGE).

After completing the development of the NextSteps Website and lessons we proceeded to start piloting the full 6-week program. We are conducting the pilot with trauma survivors identified from two sources. First, as part of a separate study funded by the Centers for Disease Control, we have access to trauma survivors at University of Maryland Shock Trauma Center who are interested in participating in self management classes. We also received final approval to begin enrollment of patients from the Carolinas Medical Center into the Pilot study on 27 January 2010, with a minimal risk amendment approved on July 7, 2010. In the final project report, we will present the results based on CMC and University of Maryland patients separately as well as in combination.

As of the end of December, 2010 we enrolled 2 cohorts into the pilot study.

- The first cohort of 10 individuals was consented to begin the Next Steps Program the week of August 9, 2010. Of these 10 individuals, 9 enrolled in the program; one individual consented to be in the study, completed the baseline interview but never went to the NextSteps website to sign up for the programs and start the lessons. We have completed 3 month follow-up interviews on all 9 people enrolled in the first cohort.

  After the participants in cohort 1 completed their 3 month follow-up interview we invited them to join us for an informal, face to face debriefing. Five of the 9 individuals met with us and shared their experiences working through NextSteps. Overall, the feedback was very positive.

- The second cohort of 18 individuals was consented to begin the Next Steps Program the week of November 1, 2010. Of these 18 individuals 7 enrolled in the program and 11 individuals consented to be in the study, completed the baseline interview but never went to the NextSteps website to sign up for the programs and start the lessons. We will be following up with all individuals who consented to be in the study but never enrolled in the program. Their 3-month follow-up interviews are scheduled for March, 2011.

We plan to consent two additional cohorts in January and February of 2011.

Finally, we met with MAJ Sarah Mitsch in Occupational Therapy and her colleagues at Walter Reed to review NextStpes and provide us feedback on NextSteps and what modifications would be needed for the program to be helpful to service members and veterans who are recovering from an injury.

PLANS FOR NEXT YEAR:

In the last year of the study, we will: (1) complete the pilot studies with civilian trauma survivors and summarize the data from the 3 month follow-up; (2) make revisions to the website and lessons as appropriate; (3) prepare a report with recommendations for revisions to make it most relevant to service members and veterans and (4) write a final report for the sponsor and a publication for the peer reviewed literature.

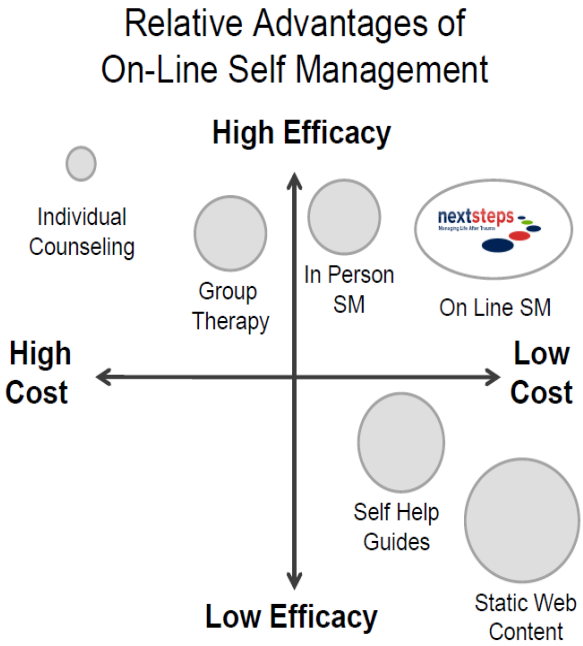
KEY RESEARCH ACCOMPLISHMENTS:

We have developed a professional, accessible website that will serve as the foundation for managing participants in the NextSteps program and streamlined the process for translating content to an online format. The format and content of the flash lessons was fully developed and beta-tested. We have begun piloting the 6-week program with civilians.

REPORTABLE OUTCOMES:

None at this point.

CONCLUSION:



Adapted from www.healthmedia.com

If shown to be efficacious, the NextSteps Program 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 interventions are critical in sustaining long-term, quality outcomes. The planned self-management intervention 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 will enable participants to employ learned skills to successfully address the multiple medical and psychosocial problems they encounter post injury.

A key consideration in designing the proposed NextSteps Program is the potential for replication and overall cost-effectiveness. The diagram to the left illustrates the tradeoffs in efficacy and cost (as well as reach) of difference interventions aimed at helping trauma survivors.

Advances in computer technology present the opportunity to develop multimedia, interactive self-management interventions that have the potential to reach large numbers of individuals in a cost-effective manner.

This project has direct relevance for the military. Hundreds of young Americans have sustained severe limb injuries in the Iraq and Afghanistan conflicts. Following separation from military service and reintegration into society, disability from injuries will impact these

individuals for the remainder of their lives. The military version of the NextSteps program will assist in assuring that these soldiers achieve the highest level of function and quality of life. 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.

REFERENCES: None

APPENDICES: Attached is a revised timeline for completing the study.

Appendix 1: Revised Timeline for Completing the Study

Critical Event	Projected Completion
• **Development and Beta Testing**	
• Beta Test Program with Consumer Advisors & Revise	Completed
• Obtain Final Approval from Carolinas IRB and Johns Hopkins BSPH	Completed
• Obtain Final Approval from DOD OHRP	Completed
• **Pilot Next Steps Cohort #1**	
• Enroll and Baseline Evaluation	Completed
• Lessons Completed	Completed
• Follow-up Evaluation	Completed
• **Pilot Next Steps Cohort #2**	
• Enroll and Baseline Evaluation	Completed
• Lessons Completed	Completed
• Follow-up Evaluation	March, 2011
• **Pilot Next Steps Cohort #3**	
• Enroll and Baseline Evaluation	January, 2011
• Lessons Completed	February, 2011
• Follow-up Evaluation	May, 2011
• **Pilot Next Steps Cohort #4**	
• Enroll and Baseline Evaluation	February, 2011
• Lessons Completed	March, 2011
• Follow-up Evaluation	June, 2011
• **Make Revisions to the NextSteps Program**	July, 2011
• **Assess Relevance to Service Members**	
Indentify Advisors	Completed
Meet with Advisors - 1	Completed
Meet with Advisors - 2	June 2011
Develop Plan for Modification to Program	August, 2011
• **Development of Final Report and Recommendations**	September, 2011