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TITLE: Impact of Evidence-Based Nonsurgical Management Guidelines on Outcomes for Disabling Knee Injuries: Long-Term Health Deficits, Disability, and Economic Analysis

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CONTRACTING ORGANIZATION: The Geneva Foundation

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13. SUPPLEMENTARY NOTES

14. ABSTRACT

Our overall objective is to improve the non-surgical management of military beneficiaries who have been recently diagnosed with knee OA.
1. Compare the effectiveness of two early management strategies (Core Set vs. Core Set + PT) for Tricare beneficiaries recently diagnosed with knee OA by a primary care provider in the MHS for the primary outcome of knee function collected over the 2-year follow-up period.
2. Compare the effectiveness of the two early management strategies for secondary outcomes including knee pain, sleep disturbance, psychological distress (anxiety and depression), activity profile status, knee-related health care costs and utilization of invasive OA-related health care procedures (injections, arthroscopy, TKA) collected over the 2-year follow-up period.
3. Explore primary and secondary outcomes of the two early management strategies for sub-groups of patients recently diagnosed with knee OA based on OA etiology (post-traumatic vs. degenerative) and age at diagnosis (< 50 vs. > 50).
4. Compare the cost-effectiveness of two early management strategies collected over the 2-year follow-up period.
5. Evaluate the mediating effects of co-morbidities (sleep disturbance and psychosocial factors) and/or physical activity self-efficacy on the primary outcome.

15. SUBJECT TERMS
Pain Management

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
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TABLE OF CONTENTS

1. Project Status

a. Accomplishments

1. Project was approved by the primary site IRB at Brooke Army Medical Center 11 October 2018
2. Site Specific Addendum of Protocol submitted to each sub-site IRB and approved at all sites.
    a. Madigan Army Medical Center (IRB, May 2019; HRPO, June 2019)
    b. Carl R. Darnall Army Medical Center (IRB, February 2019; HRPO, March 2019)
    c. Wilford Hall Ambulatory Surgical Center (IRB, November 2018; HRPO, Dec. 2018)
3. Enrollment across all sites: 21 subjects (as of 30 September 2019)

b. Reportable Outcomes

1. None at this time

c. Progress Detail

No adverse events to report.

Statement of Work Completed Tasks

	Timeline Months	**Site 1** (MAJ Pickens/ Dr. Rhon)	**Site 2** (Dr. Hatler)	***Site 3** (MAJ Samson)	**STATUS**
Initial Task IRB submission, personnel hiring, and study-related training					
Subtask IT1. Hiring of research assistant(s) (months 1-3) and physical therapists (months 3-5)	0-3	Dr. R			COMPLETE
Subtask IT2: Submission of protocol at primary **IRB (BAMC – months 0-2) and then sub-site IRBs (after approval at primary site)	0-6	Dr. R	Dr. H	MAJ S	COMPLETE
Subtask IT3: Submit IRB approval and necessary documents for ***HRPO review.	6-9	Dr. R			COMPLETE
Subtask IT4: Establish administrative support for enrolling subjects. - A. Research Assistants/Project	6-9	Dr. R			COMPLETE

Manager will create all subject packets - B. Provide the appropriate documentation to all relevant clinicians - C. Establish databases for data collection and follow-up tracking (setup and test REDcap) - D. Manual of Procedures (MOPs) and training guidelines will be created.					

2. Future Plans

We are enrolling now at all sites and problem solving through issues of recruitment at each site to maximize enrollment.

Statement of Work Future Tasks

	Timeline Months	**Site 1** (MAJ Pickens/ Dr. Rhon)	**Site 2** (Dr. Hatler)	***Site 3** (Maj Samson)	**STATUS**
Milestone 1: IRB approval and HRPO Approval	6-9				COMPLETE
Specific Aim 1: Compare effectiveness of two early management strategies (core set vs. core set + PT) over the 2-year follow-up period	**9-46**				
Task 1a: Enrollment of 300 subjects between 2 sites					
Subtask 1: Subjects are consented and study measures, that include self-report and physical performance tests, are taken	13-28	Dr. R (N = 150)	TBD *(N = 150)	TBD *(Alternate)	
Milestone 2: Target enrollment met	28				
Task 1b: Follow-up occurs for a 2-year period, with follow-ups at 3 months, 6 months, 1 year, and 2 years.	16-42	Dr. R	TBD	TBD	
Subtask 1: REDcap surveys sent at each time point Subtask 2: Track compliance with follow-ups	16-42	Dr. R			

Milestone 3: 2-year follow-up period complete	*42*				
Task 1c: Prepare data for analysis	42-43	Dr. R			
Subtask 1: Extract data from REDcap Subtask 2: Organize database for analysis	44	Dr. R			
Task 1d: Analyze data for AIM 1	44-46	Dr. R			
Specific Aim 2: Compare the two early management strategies for secondary outcomes collected over the 2-year follow-up period.	42-48	Dr. R			
Task 2a: Analyze data for AIM 2. (This is a data-analysis task and requires no additional subject testing beyond Aim 1.)	44-48	Dr. R			
Task 2b: Perform sensitivity analysis, and account for specific populations (PTOA, age variations, etc)	44-48	Dr. R			
Specific Aim 3: Evaluate outcomes for sub-groups of patients recently diagnosed with knee OA based on OA etiology (post-traumatic vs. degenerative) and age at diagnosis ($\leq$ 35 vs. > 35)	44-48	Dr. R			
Task 3a: Analyze data for AIM 3. (This is a data-analysis task and requires no additional subject testing beyond Aim 1.)	44-48	Dr. R			
Task 3b: Perform sensitivity analysis, and account for specific populations (PTOA, age variations, etc)	44-48	Dr. R			
Specific Aim 4: Compare the cost-effectiveness of two early management strategies collected over the 2-year follow-up period.	40-48	Dr. R			
Task 4a: DSA with DHA	38-45	Dr. R			
Subtask 1: Submit DSA Application to DHA for permission to collect healthcare utilization data from MDR database	38	Dr. R			

Subtask 2: Approved DSA submitted to PASBA for extraction of healthcare utilization data	40-45	Dr. R			
Task 4b: Consolidate and organize healthcare utilization data. (This is a data-analysis task and requires no additional subject testing beyond Aim 1.)	45-46	Dr. R			
Subtask 1: Match MDR data with appropriate subject ID numbers	45-46	Dr. R			
Subtask 2: Consolidate data from both sources (REDcap and MDR), and organize by individual subject ID to obtain master spreadsheet for analysis	45-46	Dr. R			
Task 4c: Compare healthcare utilization costs between groups. (This is a data-analysis task and requires no additional subject testing beyond Aim 1.)	46-48	Dr. R			
Specific Aim 5: Evaluate the mediating effects of co-morbidities and activity self-efficacy on the primary outcome.	45-48	Dr. R			
Task 5a: Conduct mediation analysis (This is a data-analysis task and requires no additional subject testing beyond Aim 1.)					

Projected Quarterly Enrollment

	Year 1				**Year 2**			
Target Enrollment (per quarter)	**Q1**	**Q2**	**Q3**	**†Q4**	**†Q1**	**Q2**	**Q3**	**Q4**
Site 1			30	35	35	30	20	
Site 2			30	35	35	30	20	
Target Enrollment (cumulative)			**60**	**70 (130)**	**70 (200)**	**60 (260)**	**40 (300)**	

3. Problems/Issues:

a. Current Problems/Issues

PREVIOUSLY REPORTED PROBLEMS:
As of 4/15/2019: The IRB has had some slow-downs with the transition to the new Common Rule. Part of this was due to their rollout of new protocol templates which we had to use (and subsequently transfer documentation from old templates to the new ones). There were some CRADA delays with US Army and the University of Utah, which prevented us from stopping at the 1 site that is approved by HRPO, however it appears that those have been taken care and we should be able to start recruitment soon. Those issues are not the current rate limiting step as we are still waiting on HRPO to provide approval at the other sites.

As of 7/15/2019: We are about 1 quarter behind right now in terms of enrollment. We are recruiting at all 3 sites, but have only enrolled at 1 site. We are currently working through hurdles of improving recruitment at each site. Madigan begin recruitment on July 25th.

CURRENT PROBLEMS/ISSUES: None – we are enrolling subjects

b. Anticipated Problems/Issues

We have had to replace 2 of our research coordinators which has slowed things down. We are actively seeking for additional staff. Recruitment is slow and we are problem solving at each site how to increase subject numbers.

4. Financial Health

We are financially stable.

Expenditures this reporting period - $59,878 ; Cumulative Total – $59,878.

5. Personnel Effort

Personnel	Role	Percent Effort
Dr. Daniel Rhon	PI	15%
Dr. Julie Fritz	Co-Investigator	15%
Dr. Rachel Mayhew	Research Coordinator	50%
Dr. Chenae Day	Research Physical Therapist	50%
Dr. Edita Dragusin	Research Physical Therapist	50%
Dr. Mary Laugesen	Research Physical Therapist	50%

6. Protocol and Activity Status

a. Human Use Regulatory Protocols

TOTAL PROTOCOLS: ONE

PROTOCOLS:

Protocol [HRPO Assigned Number]: A-20654.1

Title: The Impact of a Core Set of Evidence-Based Nonsurgical Management Guidelines on Outcomes for Knee Osteoarthritis: Long-Term Disability and Economic Analysis

Submitted to:

IRB at Brooke Army Medical Center for lead site (BAMC) – Core Site Protocol C.2018.117d

Status and initial approval dates:

- BAMC Site approved by RHC-C IRB – C.2018.117d (approved 11 October 2018)
- CRDAMC Site approved by RHC-C IRB – C.2018.117d (approved 22 February 2018)
- WHASC Site approved by RHC-C IRB – C.2018.117d (approved 06 November 2018)
- MAMC Site approved by RHC-P IRB – C.2018.117d (approved 02 May 2019)

(b) **Use of Human Cadavers for RDT&E, Education or Training**: No RDT&E, education or training activities involving human cadavers will be performed to complete the Statement of Work (SOW).

(c) **Animal Use Regulatory Protocols**: No animal use research will be performed to complete the SOW.