

**AWARD NUMBER: FMBB1229243353**

**TITLE:** Optimization of Return to Duty and Outcomes in Military Training Shoulder and Knee Instability Injuries

**PRINCIPAL INVESTIGATOR:** LTC Jonathan F. Dickens, MD

**CONTRACTING ORGANIZATION:** Walter Reed National Military Medical Center, Bethesda, MD

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# REPORT DOCUMENTATION PAGE

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14. ABSTRACT The objective of this study is to identify independent risk factors for return to duty (RTD), patient reported outcomes (PRO), and re-injury following shoulder and knee stabilization through a multi-center military collaboration using a web-based outcomes system. The hypothesis to be tested is that there are modifiable and non-modifiable risk factors that affect service members RTD, PRO and re-injury following shoulder/knee stabilization. Our web-based data collection platform went live in October 2016 and patients have been enrolled under the standard of care initiative. We are actively enrolling patients at 9 performance sites. As of December 2017, we are able to enroll any surgically managed orthopaedic patient. As of April 2018, we are able to enroll any physical therapy managed musculoskeletal injury patient. We currently have 10000+ unique patients enrolled into our platform.					
15. SUBJECT TERMS None listed.					
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## 1. INTRODUCTION:

The number of musculoskeletal disease and non-battle injuries (DNBI) and their subsequent impact on lost duty time and readiness, cannot be overstated. Musculoskeletal DNBI are the leading cause of morbidity and disability for the U.S. Military. DNBI affect 900,000 service members and account for 2.1 million injury-related medical visits and 25-million limited-duty days, annually.

Musculoskeletal DNBI medical care and subsequent lost duty time result in annual costs for the Department of Defense of \$3.7 billion dollars. Thus, the objective of this study is to identify independent risk factors for return to duty (RTD), patient reported outcomes (PRO), and re-injury following shoulder and knee stabilization through a multi-center military collaboration using a web-based outcomes system. The hypothesis to be tested is that there are modifiable and non-modifiable risk factors that affect service members RTD, PRO and re-injury following shoulder/knee stabilization.

## 2. KEYWORDS:

Patient reported outcomes, return to duty, knee, shoulder, ligament, labrum, outcomes

## 3. ACCOMPLISHMENTS:

What were the major goals of the project?

### Major Task 1: Obtain Study Approval

- a. Months 1-3
- b. Completion 100%.
- c. 8 performance sites have all requisite approvals to collect data.

### Major Task 2: Coordinate Study Staff for Data Collection

- a. Months 1-6
- b. Completion 100%.

### Major Task 3: Establish Data Management System

- a. Months 1-8
- b. Completion 100%.
- c. We have the ability to enroll any surgically managed orthopaedic patient.
- d. We have the ability to enroll any conservatively (rehabilitation) managed musculoskeletal patients.
- e. We have transitioned from Wounded, Ill and Injured Registry managed by the Army Analytics group to the DHA Survey Portal/MIP managed by DHA

### Major Task 4: Participant Recruitment, Participant Evaluation

- a. Months 4-36
- b. Completion: 100%
- c. Data collection system commenced in OCT 2016 (10000+ patients enrolled as SOC); 50+% of enrolled patients were approached to consent to participate in research.
- d. Patient and Provider survey compliance rates are at 29% (across all time points) and 50%, respectively.
- e. Will continue data collection and patient enrollment as SOC

### Major Task 5: Data Analysis

- a. Months 30-36
- b. Completion: 100%
- c. Preliminary research analyzing PROs in military orthopaedics environment currently being developed as manuscripts. Investigating return to duty rates in knee and shoulder patients continues.

## What was accomplished under these goals?

- Although MOTION began as a pilot program to show proof of concept, the Defense Health Agency (DHA) recognized MOTION's potential value in improving MSKI care and so in December 2018 the DHA incorporated MOTION as an official program of record under the Patient Reported Outcomes Clinical Record (PROCR).
- Data collection and participant recruitment were conducted on-site in 8 orthopaedics clinics across the MHS and is continuing to expand. As of the 2020 continuing review, the consent rate of individuals approached at WRNMMC was 96% agreeing to participate. Other participating sites have had very similar success rates of over 95%, with the greatest being 99.4% at TAMC.
- One of MOTION's primary objectives was to establish a MHS-wide solution to capture and evaluate clinical MSKI outcomes. Now being under DHAs PROCR, utilizing the new DHA Survey Portal has enabled us to establish a long term, enterprise-wide solution for MOTION's data management system (Major Task 3).
- Another one of MOTION's primary objectives was to develop clinical support tools that provide estimates of success based on established benchmarks. The new DHA Survey Portal has the ability to generate reports/dashboards to show patients' their progress compared to population averages over the course of their treatment (Appendix A). These reports inform surgeons of areas of improvement that might have previously been overlooked.
- Although participant involvement from both patients and surgeons was less than optimal (29% [all time points] and 50%, respectively); and also the ability to export data from WIIR was restricted to only one person making reporting, tracking, and QA of data difficult; MOTION data collection (via Major Tasks 2 & 4) has allowed us to begin analyzing data (Major Task 5) and generate manuscripts. One manuscript (Appendix B) details the methods MOTION has used so other MSKI clinics can integrate our practices into their own.
- The other manuscripts composed so far have primarily focused on identifying how to reduce the use of anatomic and condition PROs (e.g., ASES, IKDC) in favor of general physical function and lifestyle impact computer adaptive testing PROs. This is to address one of MOTION's primary objectives to identify a minimal set of questionnaires that provide necessary clinical information and reduce patient survey burden. A brief summary of the findings are as follows:
  - Appendix C – In knee surgical patients, when comparing the SANE question versus two PROMIS surveys (Physical Function and Pain Interference), both options effectively measure human physical capability. The two PROMIS surveys are more thorough through computer assisted testing (CAT), but the SANE may be a more viable option when CAT is not available/possible.
  - In two separate manuscripts, one for knee surgical patients (Appendix D) and the other for shoulder surgical patients (Appendix E), both found that the PROMIS CATs are able to accurately predict approximate IKDC and ASES scores, respectively, which further support our goal of reducing patient survey burden.

## What opportunities for training and professional development has the project provided?

The PI and research director have attended numerous conferences that have allowed for continued promotion of this project and increased knowledge:

1. Society of Military Orthopaedic Surgeons Annual Meeting
2. Extremity War Injuries Annual Meeting
3. American Academy of Orthopaedic Surgeons Annual Meeting
4. National Athletic Trainers' Association Annual Meeting
5. Arthroscopy Association of North America Annual Meeting

The PI also completed the American Orthopaedic Society for Sports Medicine European Traveling Fellowship. While this opportunity was not the direct result of this project, the PI's leadership and exemplary work on this project, in part, led to him being selected for this fellowship.

## How were the results disseminated to communities of interest?

We have presented our initial findings at SOMOS annual meetings each year of this project and are in the processes of submitting manuscripts to scientific journals for review.

## What do you plan to do during the next reporting period to accomplish the goals?

Nothing to report

#### 4. **IMPACT:**

##### **What was the impact on the development of the principal discipline(s) of the project?**

The development of web-based patient reported outcomes data collection system will allow for the real-time collection and analysis of patient reported outcomes. These outcomes will be reviewed by clinicians that can then individualize patient care and implement intervention strategies earlier, so that negative consequences are mitigated. Additionally, these data will allow the research team to identify differences between patients who go on to have positive outcomes following orthopaedic surgery from those who do not. This is vital as it will provide clinicians with information that can guide their clinical practice and improve patient care. Furthermore, the lessons learned from this project are easily transferable to physical active civilian populations.

##### **What was the impact on other disciplines?**

Once the web-based patient reported outcomes data collection system has been developed for the musculoskeletal injury clinical community it will be easily transferable to other medical specialties. This will allow for the development of similar patient outcome databases that can be used to advance medical care for all specialties. We have partnered with chronic pain specialists to ensure the capture of musculoskeletal patient outcomes from initial presentation through full return-to-duty or end of military career. The combined musculoskeletal and pain specialty program is now a program of record within the DHA (Patient Reported Outcomes Clinical Record [PROCR]).

##### **What was the impact on technology transfer?**

Once the web-based patient reported outcomes data collection system has been developed for the musculoskeletal injury clinical community it will be easily transferable to other medical specialties. This has been recognized by the DHA Neuromusculoskeletal Clinical Community (NMSK CC), who plans to use our established platform to collect musculoskeletal patient outcomes data to support the need of this operational community. Specifically, the NMSK CC plans to leverage our existing data collection platform to support a program to evaluate low back pain management. We have also been in contact with the custodians of MHS Genesis and we're exploring the possibilities of incorporating our PRO data into the EMR.

##### **What was the impact on society beyond science and technology?**

The development of patient reported outcomes databases will help to individualize patient care and allow clinicians to implement intervention strategies earlier, so that negative consequences are mitigated. These databases will allow the identification of differences between patients who go on to have positive outcomes from those who do not. This is vital as it will provide clinicians with information that can guide their clinical practice and improve patient care.

**5. CHANGES/PROBLEMS:**

**Changes in approach and reasons for change**

We were unable to obtain IT security approval for the “off the shelf” web-based data collection system. Thus we developed our own web-based data collection system on the Wounded, Ill, and Injured Registry (WIIR; Army Analytics Group). This web-based system has all required IT security approvals and will allow us to implement the orthopaedics outcome system DoD-wide.

Data export rights were restricted to just a few users while the project was still ongoing. This led to difficulty with accurately reporting on the progress of the project, maintaining participant involvement, and quality control.

**Actual or anticipated problems or delays and actions or plans to resolve them**

The aforementioned problem delayed implementation of the web-based outcomes data collection platform into the orthopaedic clinics. However, now that we have successfully developed our own data collection platform we are able to implement the system at all MTFs. MOTION has become a DHA program of record (Patient Reported Outcomes Clinical Record [PROCR]). As MOTION was acquired by the DHA further clinic implementation was placed on hold. We are working with the DHA to continue expansion to the MTFs involved in this project. We expect the program to expand once transfer to MIP is complete

**Changes that had a significant impact on expenditures**

The aforementioned changes required us to re-budget some of our funds so that we could direct money to the Army Analytics Group. This re-budgeting was approved by the study sponsor in January 2017.

Changes in staff has caused a surplus of funds we will not be able to spend before the conclusion of this project.

**Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents**

**Significant changes in use or care of human subjects**

Nothing to report

**Significant changes in use or care of vertebrate animals**

Nothing to report

**Significant changes in use of biohazards and/or select agents**

Nothing to report

## 6. PRODUCTS: Publications, conference papers, and presentations

### Journal publications.

MOTION Collaborative. Current Concepts Review: Patient Reported Outcomes in Orthopaedics. *The Journal of Bone & Joint Surgery*. 2018; 100: 436-442.

Matthew S. Tenan PhD ATC, Joseph W. Galvin DO, Timothy Mauntel PhD ATC, John M. Tokish MD, MOTION Collaborative, Jonathan F. Dickens MD. Generating the American Shoulder & Elbow Surgeon's Score using Multivariate Predictive Models and Computer Adaptive Testing to Reduce Survey Burden (submitted)

LT Ashley B. Anderson MD, Matthew S. Tenan, PhD, MOTION Collaborative, LTC Jonathan F. Dickens MD. Latent Factor Analysis of the PROMIS and Single Assessment Numeric Evaluation in Patients Undergoing Shoulder Surgery. *Arthroscopy* (submitted).

### Books or other non-periodical, one-time publications.

Nothing to report

### Other publications, conference papers and presentations.

Mauntel TC, LeClere LE, Dickens JF, MOTION Collaborative. Pre-Operative Patient- Reported Outcomes Measurement Information System and Legacy Knee Related Orthopaedic Patient Reported Outcome Measures in Military Health System Beneficiaries. 2018 Society of Military Orthopaedic Surgeons Annual Meeting, Keystone, CO. (Poster Presentation)

Mauntel TC, Elsenbeck MJ, Dickens JF, MOTION Collaborative. The ability of Patient-Reported Outcomes Measurement Information System to Predict Pre-Operative American Shoulder and Elbow Surgeons Shoulder Assessment Form Scores. 2018 Military Health System Research Symposium, Kissimmee, FL. (Podium Presentation)

Mauntel TC, Robins RJ, Dickens JF, MOTION Collaborative. The Patient-Reported Outcomes Measurement Information System and the Single Assessment of Numeric Evaluation in Military Orthopaedic Practice. 2018 Military Health System Research Symposium, Kissimmee, FL. (Poster Presentation)

Swan, E. Combined and Posterior Labral Tears are More Common in a Large Military Population with Operative Shoulder Instability than Previously Reported. 2019 Society of Military Orthopaedic Surgeons Annual Meeting, Palm Beach Gardens, FL. (Submitted)

Robins, R. Early Analysis of Common Knee Surgery and Ability to Deploy in a Military Population. 2019 Society of Military Orthopaedic Surgeons Annual Meeting, Palm Beach Gardens, FL. (Submitted)

Slabaugh, M. Initial Deployability and Outcome Trends in Military Health System Beneficiaries Undergoing Shoulder Procedures Enrolled in MOTION Database. 2019 Society of Military Orthopaedic Surgeons Annual Meeting, Palm Beach Gardens, FL. (Submitted)

Lynch, T. Current Practice Patterns In ACL Reconstruction (ACLR) Among Fellowship-Trained Military Orthopaedic Surgeons. 2019 Society of Military Orthopaedic Surgeons Annual Meeting, Palm Beach Gardens, FL. (Submitted)

- **Website(s) or other Internet site(s)**

<http://www.somos.org/motion>

- **Technologies or techniques**

The Wounded, Ill, and Injured Registry MOTION Care Community (WIIR-MOTION).  
Developed through a partnership with the Army Analytics Group.

- **Inventions, patent applications, and/or licenses**

Nothing to report.

- **Other Products**

Nothing to report

## 7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

### What individuals have worked on the project?

Personnel	Project Role	Person Months	Project Contribution	Funding
Jon Dickens	Primary Investigator (WRNMMC)	1.2	Dr. Dickens assists with overall project development and management.	Military
Kyle Potter	Co-Investigator	1.2	Extensive contributions to the data collection platform	Military
Tim Mauntel	Research Director (WRNMMC)	0.6	Dr. Mauntel manages the day-to-day needs of the project and has been responsible for the development of the web-based data collection platform. Dr. Mauntel has also established the monthly, quarterly, and yearly meetings for this project.	Federal Employee
William Seymour	Program Manager (WRNMMC)	12	Mr. Seymour assists Dr. Mauntel with the day-to-day needs of the project at WRNMMC. Mr. Seymour also assist with the data collection system development and data processing.	MT140020
Matt Bradley	Research Coordinator (WRNMMC)	12	Mr. Bradley manages the day-to-day needs of the project and oversees data collection at WRNMMC and assists with regulatory compliance.	DM140469
Toby Perkins	Regulatory Manager	1.2	Ms. Perkins assists with all regulatory components of the project.	DM140469
Kyong Min	Co-Investigator	1.2	Dr. Min manages the day-to-day responsibilities of the project at TAMC.	Military
Maj Harris	Research Coordinator (TAMC)	6	Patient recruitment and follow-up.	DM140469
Jenny Nakano	Research Coordinator (TAMC)	12	Patient recruitment and follow-up.	DM140469
Matt Schmitz	Co-Investigator (BAMC)	1.2	Dr. Schmitz manages the day-to-day needs of the project at BAMC.	Military
Victor Sylvia	Epidemiologist (BAMC)	6	Dr. Sylvia manages the ongoing data collection and database development at BAMC.	Air Force
Jean Patzkowski	Co-Investigator	1.2	Extensive contributions to the data collection platform	Military
Clarice Reece	Research Assistant (BAMC)	12	Patient recruitment and follow-up.	MT140020
John Dunn	Co-Investigator (WBAMC)	1.2	Dr. Dunn manages the day-to-day responsibilities of the project at WBAMC.	Military
Brian Waterman	Co-Investigator (WBAMC)	1.2	Dr. Waterman has transitioned out of the military, but actively contributes to the project.	Civilian

E'Stephan Garcia	Co-Investigator (WBAMC)	1.2	Dr. Garcia has taken over the responsibilities of managing the day-to-day needs of the project at WBAMC.	Military
Raquel Resendez	Research Coordinator (WBAMC)	12	Ms. Resendez manages the day-to-day needs of the project and oversees data collection at WBAMC.	Air Force
Deborah Hood	Co-Investigator (MAMC)	9	Ms. Hood manages the day-to-day needs of the project at Madigan.	Federal Employee
Daniel Kang	Co-Investigator (MAMC)	1.2	Dr. Kang manages the day-to-day needs of the project at Madigan.	Military
Bryant Marchant	Co-Investigator (MAMC)	1.2	Dr. Marchant manages the day-to-day needs of the project at Madigan.	Military
Ken Cameron	Co-Investigator	0.6	Extensive contributions to the data collection platform	Federal Employee
Matt Posner	Co-Investigator	1.2	Site PI; Extensive contributions to the data collection platform	Military
Karen Peck	Research Analyst	0.6	Extensive contributions to the data collection platform; Insight into clinical implementation and patient recruitment	Federal Employee
Jessica Martinez	Research Coordinator (USMA)	12	Patient recruitment and follow-up.	DM140469
Lance LeClere	Co-Investigator	0.6	Site PI; Extensive contributions to the data collection platform	Military
Mark Slabaugh	Co-Investigator	0.6	Site PI; Extensive contributions to the data collection platform	Military
Richard Robins	Co-Investigator	0.6	Extensive contributions to the data collection platform	Military
Audrey Hartin	Research Assistant	12	Patient recruitment and follow-up.	DM140469
Luke McDonald	Co-Investigator	0.6	Site PI; Extensive contributions to the data collection platform	Military
Sean Stephens	Research Assistant	12	Patient recruitment and follow-up.	DM140469
Kevin Pinkos	Co-Investigator	0.6	Extensive contributions to the data collection platform	Military
James Hammond	Co-Investigator	1.2	Site PI; Extensive contributions to the data collection platform	Military
Lorie Gower	Research Assistant	6	Patient recruitment and follow-up.	MT140020
Laeyonna Blackstone	Research Assistant	12	Patient recruitment and follow-up	DM140469

**Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?**

Nothing to report

**What other organizations were involved as partners?**

- **Organization Name:** William Beaumont Army Medical Center (WBAMC)
  - **Location of Organization:** El Paso, TX
  - **Partner's contribution to the project:**
    - **Financial support:** Money from the Air Force is used to support research at WBAMC.
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** WBAMC representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** The new Site-PI is Dr. John Dunn.
    - **Other:** Nothing to report.
- 
- **Organization Name:** William Beaumont Army Medical Center (WBAMC)
  - **Location of Organization:** El Paso, TX
  - **Partner's contribution to the project:**
    - **Financial support:** Money from the Air Force is used to support research at WBAMC.
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** WBAMC representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** The new Site-PI is Dr. John Dunn.
    - **Other:** Nothing to report.
- 
- **Organization Name:** United States Military Academy (USMA)
  - **Location of Organization:** West Point, NY
  - **Partner's contribution to the project:**
    - **Financial support:** We have hired a dedicated research assistant at USMA.
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** USMA representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** Nothing to report.
    - **Other:** Nothing to report.
- 
- **Organization Name:** San Antonio Military Medical Center (SAMMC)
  - **Location of Organization:** San Antonio, TX
  - **Partner's contribution to the project:**
    - **Financial support:** We have hired a dedicated research assistant at SAMMC.
    - **In-kind support:** Nothing to report.

- **Facilities:** The research staff has dedicated space to collect and analyze data.
  - **Collaboration:** SAMMC representatives are actively and provide their thoughts and expertise on project development.
  - **Personnel exchanges:** Nothing to report.
  - **Other:** Nothing to report.
- **Organization Name:** United States Naval Academy (USNA)
  - **Location of Organization:** Annapolis, MD
  - **Partner's contribution to the project:**
    - **Financial support:** We have hired a dedicated research assistant at USNA (start date 21 May 2019).
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** USNA representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** Nothing to report.
    - **Other:** Nothing to report.
- **Organization Name:** Naval Medical Center Portsmouth (NMCP)
  - **Location of Organization:** Portsmouth, VA
  - **Partner's contribution to the project:**
    - **Financial support:** Nothing to report.
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** NMCP representatives are actively and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** The new Site-PI is Dr. Kevin Pinkos.
    - **Other:** NMCP deployment is on hold until approved by the DHA.
- **Organization Name:** United States Air Force Academy (USAFA)
  - **Location of Organization:** Colorado Springs, CO
  - **Partner's contribution to the project:**
    - **Financial support:** We have hired a dedicated research assistant at USAFA.
    - **In-kind support:** Nothing to report.
    - **Facilities:** The research staff has dedicated space to collect and analyze data.
    - **Collaboration:** USAFA representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** Nothing to report.
    - **Other:** Nothing to report.
- **Organization Name:** Naval Hospital Camp Lejeune (NHCL)
  - **Location of Organization:** Camp Lejeune, NC
  - **Partner's contribution to the project:**
    - **Financial support:** Nothing to report.
    - **In-kind support:** Nothing to report.
    - **Facilities:** Nothing to report.
    - **Collaboration:** The previous PI has left the military, a new PI needs to be identified.
    - **Personnel exchanges:** The previous PI has left the military, a new PI needs to be identified.
    - **Other:** NHCL deployment is on hold until approved by the DHA.

- **Organization Name:** Tripler Army Medical Center (TAMC)
- **Location of Organization:** Honolulu, HI
- **Partner's contribution to the project:**
  - **Financial support:** Money from the Air Force is used to support research at TAMC; We have hired a dedicated research assistant at TAMC.
  - **In-kind support:** Nothing to report.
  - **Facilities:** The research staff has dedicated space to collect and analyze data.
  - **Collaboration:** TAMC representatives are actively involved and provide their thoughts and expertise on project development.
  - **Personnel exchanges:** The new Site-PI is Dr. Kyong Min.
  - **Other:** Nothing to report.
  
- **Organization Name:** Madigan Army Medical Center (MAMC)
- **Location of Organization:** Tacoma, WA
- **Partner's contribution to the project:**
  - **Financial support:** Nothing to report.
  - **In-kind support:** Nothing to report.
  - **Facilities:** The research staff has dedicated space to collect and analyze data.
  - **Collaboration:** MAMC representatives are actively involved and provide their thoughts and expertise on project development.
  - **Personnel exchanges:** Nothing to report.
  - **Other:** MAMC deployment is on hold until approved by the DHA.
  
- **Organization Name:** Naval Medical Center San Diego (NMCS D)
- **Location of Organization:** San Diego, CA
- **Partner's contribution to the project:**
  - **Financial support:** We have hired a dedicated research assistant at NMCS D.
  - **In-kind support:** Nothing to report.
  - **Facilities:** The research staff has dedicated space to collect and analyze data.
  - **Collaboration:** NMCS D representatives are actively involved and provide their thoughts and expertise on project development.
  - **Personnel exchanges:** Nothing to report.
  - **Other:** Nothing to report.
  
- **Organization Name:** Dwight David Eisenhower Army Medical Center (DDEAMC)
- **Location of Organization:** Augusta, GA
- **Partner's contribution to the project:**
  - **Financial support:** Nothing to report.
  - **In-kind support:** Nothing to report.
  - **Facilities:** Nothing to report.
  - **Collaboration:** DDEAMC representatives are actively involved and provide their thoughts and expertise on project development.
  - **Personnel exchanges:** The new Site-PI is Dr. K. Aaron Shaw.
  - **Other:** DDEAMC deployment is on hold until approved by the DHA.
  
- **Organization Name:** Landstuhl Army Regional Medical Center (LRMC)
- **Location of Organization:** Landstuhl, Germany
- **Partner's contribution to the project:**
  - **Financial support:** Nothing to report.
  - **In-kind support:** Nothing to report.

- **Facilities:** Nothing to report.
  - **Collaboration:** The previous PI has left the military, a new PI needs to be identified.
  - **Personnel exchanges:** The previous PI has left the military, a new PI needs to be identified.
  - **Other:** LRMC deployment is on hold until approved by the DHA.
- **Organization Name:** Womack Army Medical Center (WAMC)
  - **Location of Organization:** Fort Bragg, NC
  - **Partner's contribution to the project:**
    - **Financial support:** Nothing to report.
    - **In-kind support:** Nothing to report.
    - **Facilities:** Nothing to report.
    - **Collaboration:** WAMC representatives are actively involved and provide their thoughts and expertise on project development.
    - **Personnel exchanges:** The new Site-PI is Dr. Ken Nelson.
    - **Other:** WAMC deployment is on hold until approved by the DHA.

## 8. SPECIAL REPORTING REQUIREMENTS

**COLLABORATIVE AWARDS:** For collaborative awards, independent reports are required from BOTH the Initiating Principal Investigator (PI) and the Collaborating/Partnering PI. A duplicative report is acceptable; however, tasks shall be clearly marked with the responsible PI and research site. A report shall be submitted to <https://ers.amedd.army.mil> for each unique award.

**QUAD CHARTS:** If applicable, the Quad Chart (available on <https://www.usamraa.army.mil>) should be updated and submitted with attachments.

### Military Orthopaedics Tracking Injuries and Outcomes Network (MOTION): Optimization of Return to Duty and Outcomes in Military Musculoskeletal Injuries

Grant Number DM140469

PI: Jonathan F. Dickens, MD    Org: Walter Reed National Military Medical Center    Award Amount: \$970,000

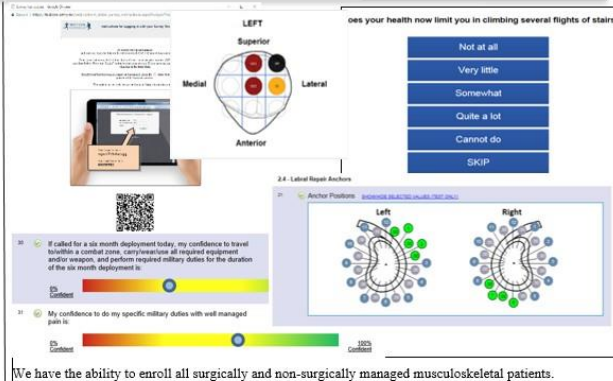


#### Study/Product Aim(s)

- Specific Aim 1:** To determine independent risk factors (predictors) associated with RTD postoperatively at 6 months and 1 year.
- Specific Aim 2:** To determine risk factors (predictors) associated with validated PRO scores, general health, activity level, and PULHES profile score at 6 months and 1 year postoperatively.
- Specific Aim 3:** To determine the military training-specific independent risk factors of injury and re-injury in service members undergoing surgical stabilization of the knee or shoulder.
- Specific Aim 4:** To determine the effectiveness (compliance rate and patient satisfaction) of a web-based assessment model used to evaluate postoperative shoulder and knee stabilization outcomes.

#### Approach

A Tri-Service orthopedic research network will implement a standardized, web-based, clinical assessment tool to assess validated patient reported outcomes (PRO) and return to duty (RTD) following shoulder and knee stabilization.



We have the ability to enroll all surgically and non-surgically managed musculoskeletal patients.

#### Timeline and Cost

Activities	CY	15	16	17	18	19
Major Task 1: Obtain study approval.		█				
Major Task 2: Coordinate study staff for data collection.			█			
Major Task 3: Establish data management system.			█			
Major Task 4: Participant recruitment, participant evaluation.			█			
Major Task 5: Data analysis.					█	
Budget Estimates:	\$970,000	\$0	\$81,362	\$171,400	\$257,095	\$460,138

Updated: 09 May 2019

#### Goals/Milestones

**FY15 Goal** – IRB approval and establish data management infrastructure

- Institutional and DHRP IRB approval
- Coordinate funds transfer, personnel hiring
- Infrastructure development

**FY16 Goal** – Establish outcomes platform on network

- Establish outcomes application
- Establish interconnectivity with other DoD databases
- Begin patient enrollment

**FY17 Goal** – Patient enrollment and Data analyses

- Continue patient enrollment
- Evaluate encounter methodology and provider satisfaction
- Coordinate for multicenter repository and data flow
- Systematic dissemination for DoD-wide application

#### Comments/Challenges/Issues/Concerns

MOTION became a DHA program of record (December 2018) in combination with the Pain Assessment Screening Tool and Outcomes Registry (PASTOR), to form the Patient Reported Outcomes Clinical Record (PROCR)

## 9. APPENDICES: