



# **The Adoption of Patient-Reported Outcomes Across the MHS with Lessons Learned from the Musculoskeletal Community**

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1440 – 1540 (ET)

# Presenters

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## Carrie A. Storer, D.P.T., P.T., O.C.S.

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Dr. Carrie Storer is a Doctor of Physical Therapy and retired Army officer with over 20 years of experience as an orthopedic board certified physical therapist and clinical leader. She currently serves as the Chief of the Rehabilitation and Physical Performance Clinical Management Team for the Defense Health Agency and is the co-lead for enterprise-wide implementation of the Military Orthopaedic and Tracking Injuries Network (MOTION) and Musculoskeletal (MSK) Triage across the Military Health System.



# Army Col. Ian E. Lee, D.Sc., M.B.A., M.H.A., P.T., F.A.A.O.M.P.T., F.A.C.H.E.

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Army Col. Ian Lee has served 27 years as an Army Physical Therapist. He completed fellowship training in the Army-Baylor Orthopaedic and Manual Physical Therapy Doctoral program in 2004. In 2012 he completed the Army-Baylor Master of Business Administration (MBA)/Master of Health Administration (MHA) program and went on to lead Continuous Process Improvement (CPI) at Walter Reed National Military Medical Center (WRNMMC) and the Medical Readiness Assessment Tool (MRAT) development and fielding at the U.S. Army Medical Command (MEDCOM) G8.

As a staff officer at the Office of the Surgeon General (OTSG) in 2016, his responsibilities included growing the new Military Orthopaedic and Tracking Injuries Network (MOTION) initiative. COL Lee continues to serve as an administrative clinician leader, design consultant, collaborator, and data strategist with the Defense Health Agency (DHA), Defense Healthcare Management Systems (DHMS) and the Military Services in pursuit of data driven approaches to continuously improve service member medical readiness, Military Health System (MHS) care quality and value.



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# Disclosures

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- Dr. Storer and Army Col. Lee have no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the authors and do not necessarily reflect the official policy or position of the Army, Navy, Air Force, Department of Defense, nor the U.S. Government.
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# Learning Objectives

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At the conclusion of this activity, participants will be able to:

1. Describe lessons learned with the deployment of patient-reported outcomes and functional measures across the Military Health System (MHS).
2. Summarize initial findings across different clinical communities including Traumatic Brain Injury (TBI), Pain, Musculoskeletal, Surgical Services, and Behavioral Health.
3. Identify how clinic leaders, patient reported outcomes (PRO) Champions, Chief Medical Information Officers (CMIOs), Chief Medical Officers (CMOs), and Chief Information Officers (CIOs) can assist with the implementation and adoption of outcome measures across their military treatment facilities (MTFs).
4. Explain leading practices and existing capabilities available across the enterprise for the collection, adoption, and monitoring of patient outcomes.



# Agenda

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- Introduction to PROs
- Overview of PROs across Clinical Communities
  - ✓ Behavioral Health Community
  - ✓ Amputation Centers
  - ✓ Surgical Services Community
  - ✓ TBI Community
  - ✓ Pain Community
  - ✓ Musculoskeletal Community
- PRO Adoption
- MOTION/MSK Triage Lessons Learned\*
- Conclusion

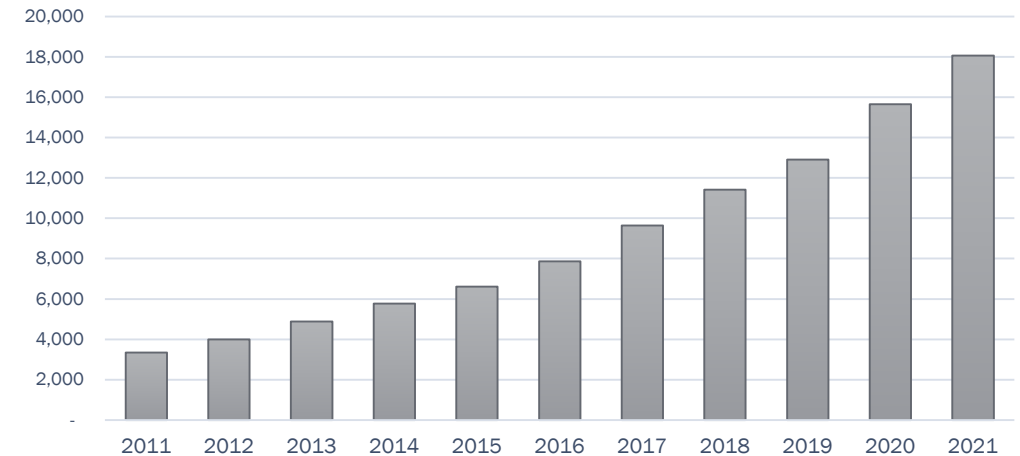
\*Military Orthopaedic Tracking Injuries and Outcomes Network (MOTION) & Musculoskeletal Triage Decision Support Tool (MSK Triage)



# Introduction

- Patient reported outcomes (PROs) are standardized measures that are used to obtain the patient's perspective
- PROs are increasingly used in all aspects of health care to ensure optimal delivery of patient-centered care
  - ✓ Value of PROs has been shown since 1980s (Brown et al., 1984)
  - ✓ Since then, greater focus on wide array of measurements to collect PROs:
    - » ePROs, adaptive PROs, patient diaries, multi-dimensional multi-item questionnaires, etc..
  - ✓ PROs ensure that the patient's voice is incorporated in their care
  - ✓ 19% year-over-year increase in number of scientific publication that use PROs

Number of Scientific Publications with PROs  
(2011-2021)



\* Source: PubMed

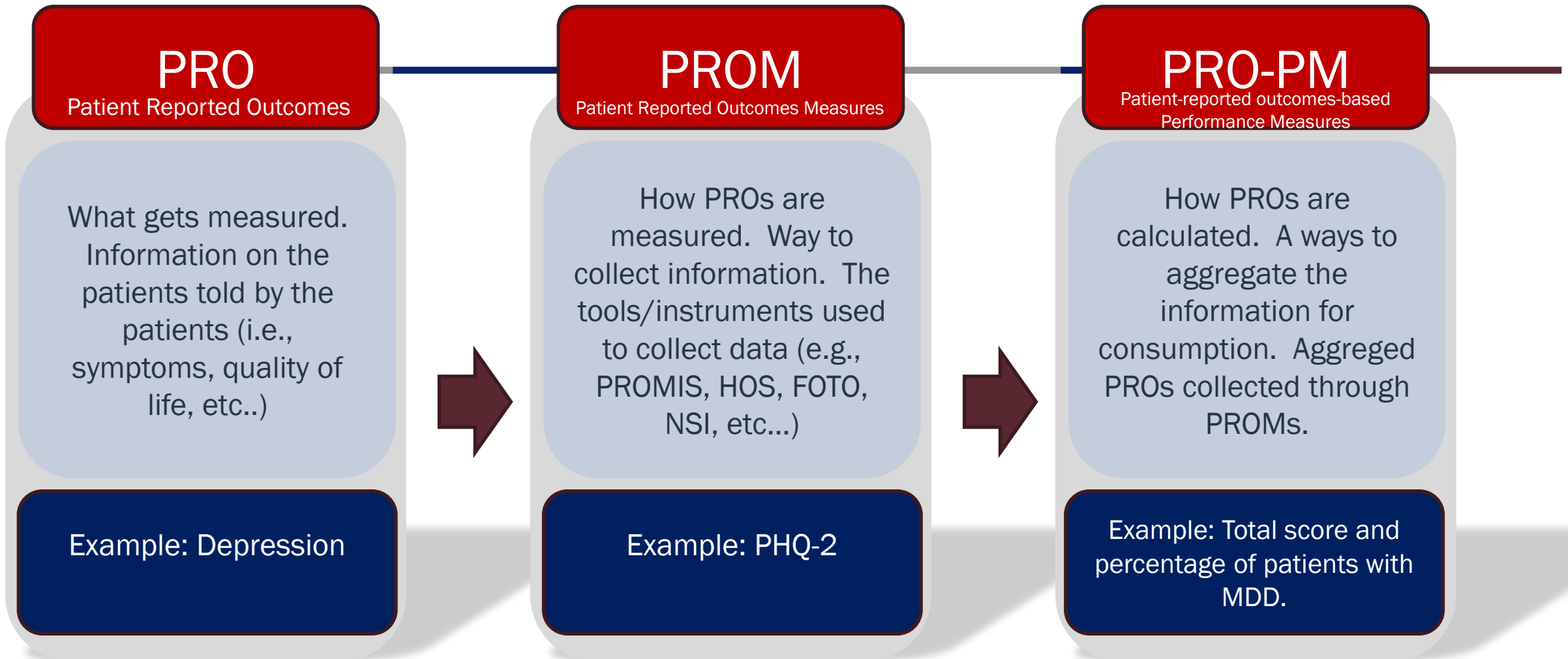


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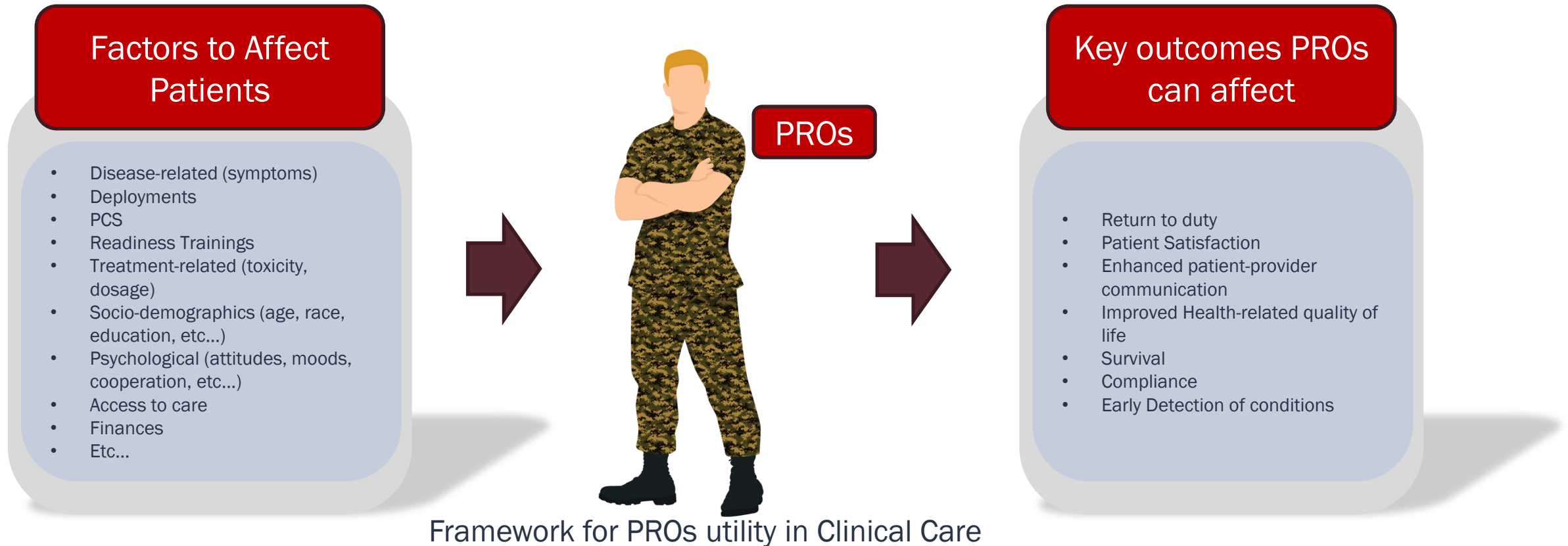


# Terminology



# What's the clinical utility of PROs?

- Numerous studies have shown the utility of PROs in clinical settings (Fromm et al., Basch et al.)
- Studies show that symptoms directly reported by patients more accurately reflect their health status than through clinician report (Basch et al.)

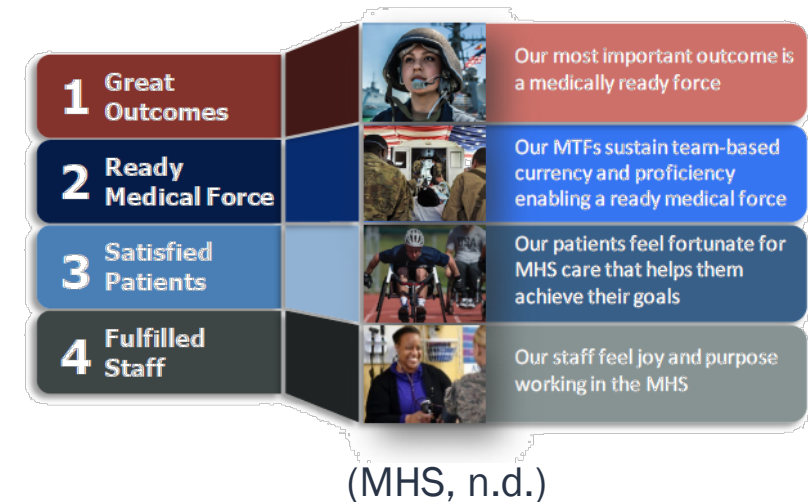


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# PROs across the Military Health System

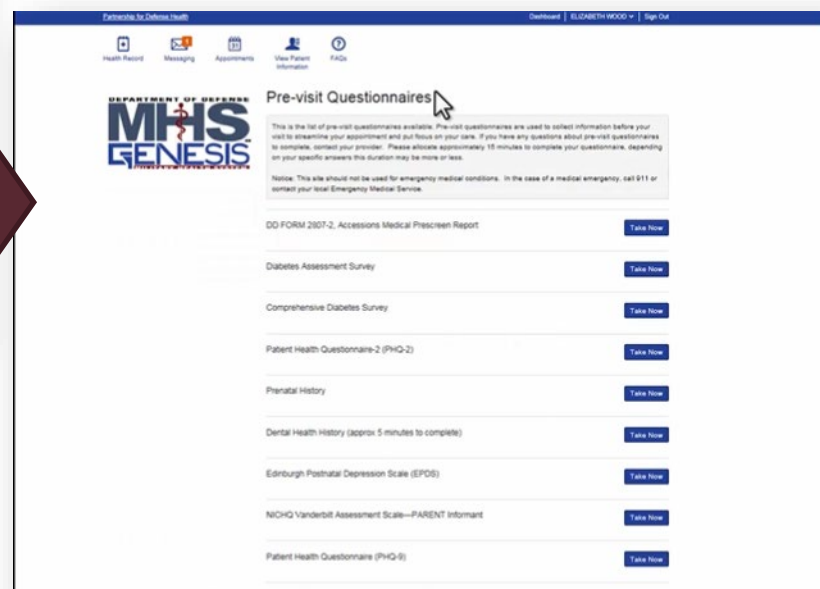
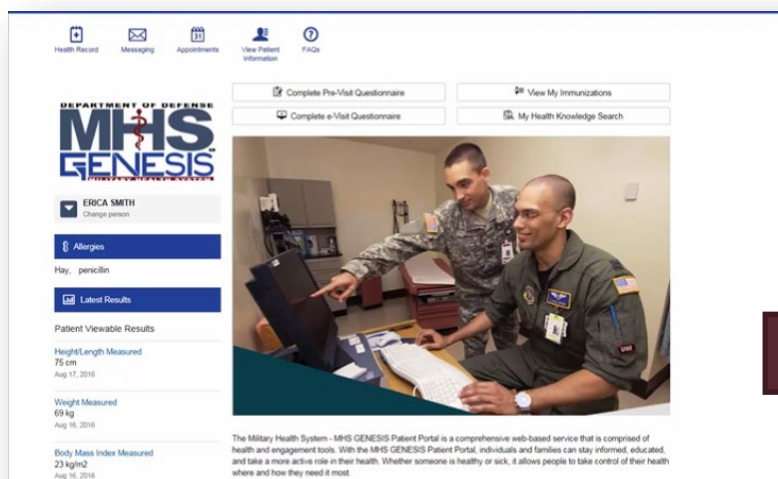
- Based on the DHA Campaign Plan, the number one priority for the organization is “*Great Outcomes*”
- One of the primary ways to measure “Great Outcomes” is by the collection of PROs
- Currently, many *primary care* clinics and providers are collecting certain standardized questionnaires (PHQ2, PHQ9, etc...)
  - Legacy Patient Portal, hard copies, etc...
  - MHSG Patient Portal, hard copies, etc...



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# PROs across the Military Health System (GENESIS example)



## Patient Portal Available Clipboards

- Alcohol Use Screener (Audit-C)
- Anxiety Screener (GAD-7)
- BH Screener
- Birth Plan (OB Birth Plan)
- Depression Questionnaire (PHQ-9)
- Health History
- Insomnia Severity Screen (Insomnia Severity Index)
- Low Back Pain Questionnaire (Modified Oswestry Disability Index)
- Neurobehavioral Symptoms Screen (Neurobehavioral Symptoms Inventory (NSI))
- Oncology and Infusion Intake (Oncology/Infusion Comprehensive Intake)
- Pregnancy Intake (Antepartum Intake - Nurse)
- Postpartum Depression Scale (Edinburgh Postnatal Depression Scale)
- PTSD Checklist (PTSD Checklist (PCL-5))
- Sleepiness Screen (Epworth Sleepiness Scale)
- Suicide Screener (Columbia Suicide Severity Rating Scale)
- Upper Extremity Function (Quick DASH)
- Well Visit for Children, under 2 years (0-23 MHS Well Visit)
- Well Visit for Children, 2-6 years (2-6 MHS Well Visit)
- Well Visit for Children, 7-18 years (7-18 MHS Well Visit)
- Ambulatory Pediatric Care Intake

(MHS, n.d.)



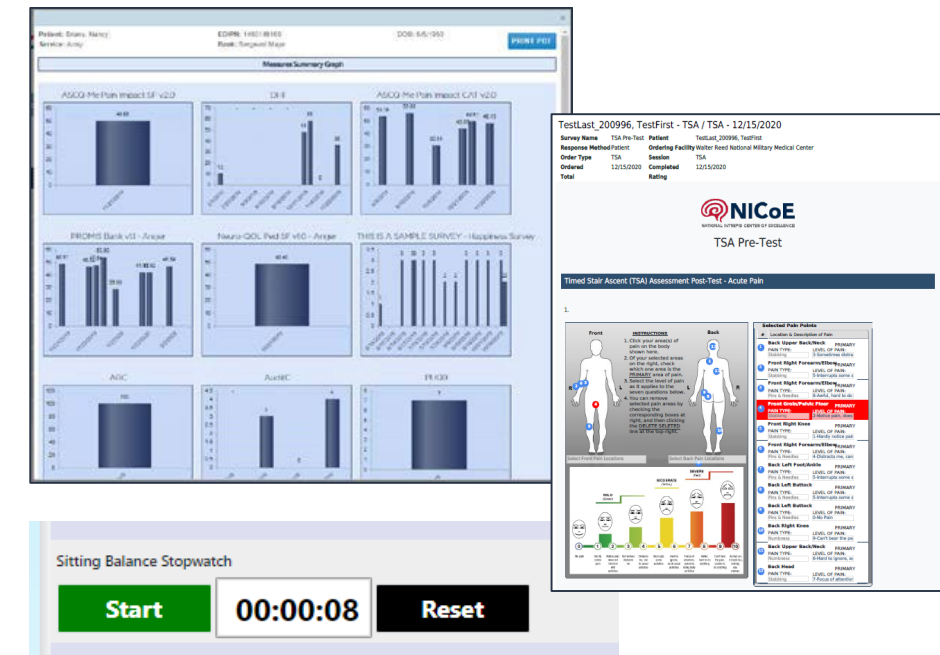
# PROs in Specialty Clinics

- Currently, several specialty care communities have been collecting or piloting the collection of PROs

- |                      |                      |
|----------------------|----------------------|
| 1. Behavioral Health | 6. Surgical Services |
| 2. TBI               | 7. Women Health      |
| 3. Pain              | 8. Pediatrics        |
| 4. Musculoskeletal   | 9. Oncology          |
| 5. Amputee           | 10. Etc...           |

- Specialty services have many unique requirements

- Adaptive questionnaires (e.g. PROMIS, TBI-QOL, etc...)
- Integration of Video and Images (e.g. refractive surgery)
- Advanced Skip and Branching logic for questions and questionnaires (e.g. trigger additional questionnaire based on results from current answers)
- Time-dependent questionnaires (e.g. measure time to complete, time to walk, etc...)
- Input method (e.g. mobile, kiosk, web, patient portal, transcribe, etc...)
- Flag patients and questionnaires based on responses (e.g. high-risk patients)
- Patient and family (e.g. patient and spouse completing questionnaire about sleep)
- Automatic follow-up not liked to appointment
- Summary patient report for clinical staff
- Compliance monitoring and tracking
- Order based on medical history and diagnosis (e.g. based on ICD or CPT codes)
- Etc...



(NICOE, n.d.)



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# Behavioral Health Clinical Community (BHDP)

POC: CAPT Corso




# Behavioral Health Outcomes

- **Background:** Behavioral Health Outcomes are well-developed, having built on the original Army methodology.
- **Policy:** DHA-PI 6490.02: *Behavioral Health (BH) Treatment and Outcomes Monitoring*
- **Metrics:** assessing the rate of remission and/or clinically significant improvement are reported for the MHS for post-traumatic stress disorder (PTSD) and Major Depression.

|                    | Definition   | Numerator  | Denominator   |
|--------------------|--|--|---|
| PTSD/MDD Outcomes  | % MDD/PTSD patients with significant symptom improvement | # of patients who meet improvement or remission criteria | # of patients with target diagnosis (PTSD or MDD)       |
| BHDP Adoption Rate | % patients given BHDP surveys when required (≥monthly)   | # of patients with at least one BHDP survey started      | # of patients with at least one outpatient BH encounter |

*Note: To ensure that outcomes are representative of the MTF performance, only outcomes from MTFs with 80%+ BHDP Adoption Rate are included in the overall rates (graphs).*



Defense Health Agency

PROCEDURAL INSTRUCTION

NUMBER 6490.02

July 12, 2018

DAD, MEDICAL AFFAIRS

SUBJECT: Behavioral Health (BH) Treatment and Outcomes Monitoring

References: See Enclosure 1.

1. **PURPOSE.** This Defense Health Agency-Procedural Instruction (DHA-PI), based on the authority of References (a) and (b), and in accordance with the guidance of References (c) through (k):

a. Establishes the Defense Health Agency's (DHA) procedures for the collection and analysis of BH outcome data.

b. Addresses how DoD will standardize BH outcome data collection to: assess variations in mental health and substance use care among in-garrison medical treatment facilities (MTFs) and clinics; assess the relationship of treatment protocols and practices to BH outcomes; and identify barriers to provider implementation of evidence-based clinical guidance approved by DoD.

c. Designates the Army as the DoD lead Service for maintenance and sustainment of the Behavioral Health Data Portal (BHDP) in specialty care mental health and substance use clinics, referred to collectively as BH clinics, until BHDP functionality can be integrated with GENESIS or another electronic health record (EHR) system managed by DHA.

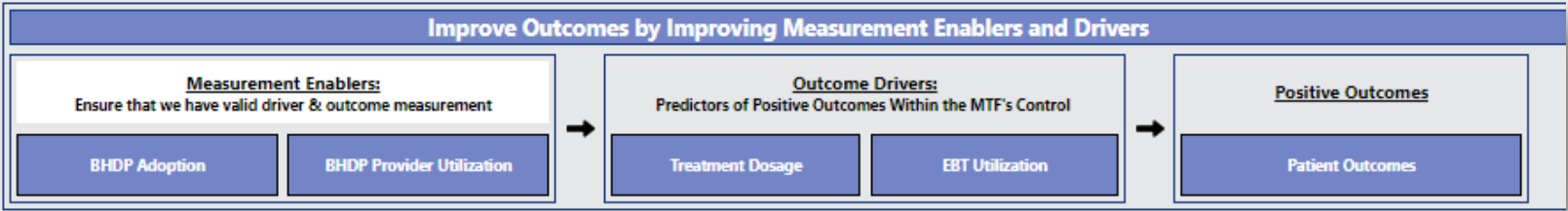
d. Designates DHA Information Operations (J-6) as lead on transitioning BHDP functional requirements related to outcomes monitoring to future EHR data collection platforms and processes.

2. **APPLICABILITY.** This DHA-PI applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Office of the Inspector General of the DoD, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this DHA-PI as the "DoD Components").

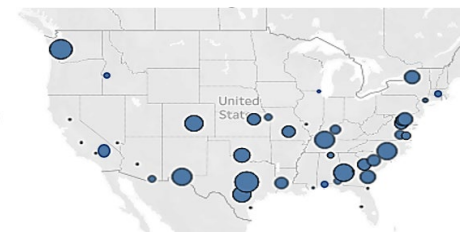
(DHA, 2018)



# Improving Behavioral Health Outcomes

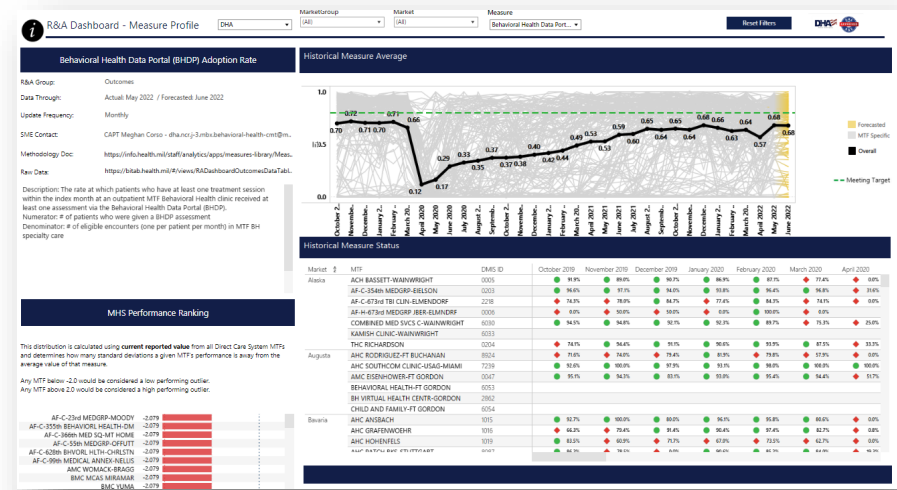


Behavioral Health Clinical Community (BHDP)



Based on last 666,983 questionnaires

- BH providers are doing their best work so it is necessary to show actionable data so they know how to improve.
- The BH CMT assesses enablers (adoption and system usage by providers), drivers of outcomes to inform performance improvement, in addition to outcomes.
- Reporting of these metrics provide concrete guidance for how to improve and helps clinics get the best possible outcomes.



DHA R&A Dashboard



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# Amputee Clinics

POC: Dr. Crunkhorn

# Amputee Clinics



- The DOD has more than 30,000 beneficiaries with some level of limb loss. (EACE, 2022)
- Extremity Trauma and Amputation Center of Excellence (EACE) has taken the lead in collecting PROs to improve clinical outcomes
- PROs:
  - 13 PROs currently in use
  - 4 sections utilizing PROs
    - ✓ Physical Therapy
    - ✓ Occupational Therapy
    - ✓ Orthotics and Prosthetics
    - ✓ Physical Medicine/Rehabilitation
  - Future: Recreational Therapy and Sleep study-related PRO integration

**EACE** The Prosthetic Limb Users Survey of Mobility (PLUS-M -12 Item)

Instructions: Please respond to all questions as if you were wearing the prosthetic leg(s) you use most days. If you would normally use a cane, crutch, or walker to perform the task, please answer the questions as if you were using that device.

Please choose "unable to do" if you:

- Would need help from another person to complete the task,
- Would need a wheelchair or scooter to complete the task, or
- Feel the task may be unsafe for you

Please choose an option from the dropdown for each question.

- Are you able to walk a short distance in your home?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to step up and down curbs?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk across a parking lot?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk over gravel surfaces?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to move a chair from one room to another?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk while carrying a shopping basket in one hand?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to keep walking when people bump into you?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk on an unlit street or sidewalk?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to keep up with others when walking?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk across a slippery floor?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to walk down a steep gravel driveway?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do
- Are you able to hike about 2 miles on uneven surfaces, including hills?  
☐ Without any difficulty ☐ With a little difficulty ☐ With some difficulty ☐ With much difficulty ☐ Unable to do

Raw Score: 36  
T-Score: 63.3




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# Amputee Clinics

- Unique PROs work: *Functional & Performance Outcomes*
  - Capabilities such as functional measures and time-dependent questions
- Outcomes guidebook and outcomes training available within *Advanced Rehabilitation Centers (ARC)* site



ARC Welcome Packet

Outcomes Guidebook

Outcomes Training

CAMP Training ▾

Clinic Coding

Clinical Protocols ▾

Luke Arm documents ▾

Transfemoral

Transfemoral and Knee Disarticulation


Bilateral Transfemoral

Clinical Resources ▾


Policy and Regulation ▾

Links ▾


Staff Directories




Military Advanced Training Center  
Bethesda, MD




Center for the Intrepid  
San Antonio, Texas




Comprehensive Combat & Complex Casualty Care  
San Diego, CA




Walter Reed National Military Medical Center



Brooke Army Medical Center  
San Antonio, Texas



Naval Medical Center San Diego  
San Diego, CA



Patient-Specific Functional Scale (PSFS)

Initial Assessment:

I am going to ask you to identify up to three important activities that you are unable to do or are having difficulty with as a result of your problem. Today, are there any activities that you are unable to do or having difficulty with because of your \_\_\_\_\_ problem? (Clinician, show scale to patient and have the patient rate each activity.)

Follow-up Assessments:

When I assessed you on (date previous assessment dates), you told me that you had difficulty \_\_\_\_\_ activities from list at a time. Today, do you still have difficulty with (read and have patient rate each activity).

Patient-specific activity scoring scheme (Point to one number):

0 1 2 3 4 5 6 7

0 = Unable to perform activity

Activity #1

activity 1

Activity #1 Score

3

Activity #2

activity 2

Activity #2 Score

3

Activity #3

activity 3

Activity #3 Score

5

Do you have more activities to record?

Yes

Activity #4

activity 4

Activity #4 Score

3

Do you have more activities to record?

Yes

Activity #5


activity 5

Activity #5 Score

4

Average Score

3.5



Orthotics and Prosthetics Users' Survey Satisfaction with Devices and Services (OPUS SWDAS)

Instructions: For each question, please choose the response from the dropdown that most closely reflects your opinion.

| Questions  | Strongly Agree        | Agree                 | Neutral               | Disagree              | Strongly Disagree     | Don't know / No       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. My prosthesis / orthosis fits well  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. The weight of my prosthesis / orthosis is manageable  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. My prosthesis / orthosis is comfortable throughout the day  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. It is easy to put on my prosthesis / orthosis   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. My prosthesis / orthosis looks good   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. My prosthesis / orthosis is durable   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. My clothes are free of wear and tear from my prosthesis / orthosis                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. My skin is free of abrasions and irritations  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. My prosthesis / orthosis is pain free to wear   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. I can afford the out-of-pocket expense to purchase and maintain my prosthesis / orthosis           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. I can afford to repair or replace my prosthesis / orthosis as soon as needed                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. I received an explanation with a prosthesis / orthosis within a reasonable amount of time          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. I was shown the proper level of courtesy and respect by the staff                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. I received a reasonable amount of time to be seen  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. Clinic staff fully informed me about equipment choices   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 16. The prosthetist / orthotist gave me the opportunity to express my concerns regarding my equipment  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17. The prosthetist / orthotist was responsive to my concerns and questions                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. I am satisfied with the training I received in the use and maintenance of my prosthesis / orthosis | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. The prosthetist / orthotist discussed problems I might encounter with my equipment                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20. The staff coordinated their services with my therapist and doctor                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21. I use a partner in decision-making with clinic staff regarding my care and equipment               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Satisfaction with Device Total Score   | 35                    |                       |                       |                       |                       |                       |
| Rauch Measure  | 10.66                 |                       |                       |                       |                       |                       |
| Rauch S.E. Measure   | 2.86                  |                       |                       |                       |                       |                       |
| Satisfaction with Services Total Score   | 27                    |                       |                       |                       |                       |                       |
| Rauch Measure  | 10.72                 |                       |                       |                       |                       |                       |
| Rauch S.E. Measure   | 2.59                  |                       |                       |                       |                       |                       |

Amputee Mobility Predictor (AMPPRO)

INITIAL INSTRUCTIONS:

Testee is seated in a hard chair with arms. The following maneuvers are tested with or without the use of the prosthesis. Advise the person of each task or group of tasks prior to performance. Please avoid unnecessary chatter throughout the test. Safety first, no task should be performed if either the tester or testee is uncertain of a safe outcome.

The right limb is:

PF ☐ TT ☐ KD ☐ TF ☐ HD ☐ Braid

The left limb is:

PF ☐ TT ☐ KD ☐ TF ☐ HD ☐ Braid

Name ASSESSOR DATE TIME

Add New Item

Sitting Balance Stopwatch

Start 00:00:08 Reset

1. Sitting Balance (Sit forward in a chair with arms folded across chest for 60s)

Cannot sit upright independently for 60s ☐ Can sit upright independently for 60s

2. Sitting Reach (Reach forward and grasp the ruler (Tester holds ruler 12in beyond extended arms midline to the sternum))

Does not attempt ☐ Cannot grasp or required arm support ☐ Reaches forward and successfully grasps item

3. Chair to chair transfer (2 Chairs at 90 degrees. Pt may choose direction and use their upper extremities)

Cannot do or requires physical assistance ☐ Performs independently, but appears unsteady / safe ☐ Performs independently, appears to be steady and safe

4. Arises from a chair (ask pt to fold arms across chest and stand. If unable, use arm or assistive device.)

Unable without help (physical assistance) ☐ Able, uses arms/assistive device to help ☐ Able, without using arms

5. Attempts to arise from a chair (stopwatch ready): If attempt in no. 4 was without arms then ignore and allow attempt without penalty.

Unable without help (physical assistance) ☐ Able but requires > 1 attempts ☐ Able to rise in 1 attempt

6. Immediate standing balance (1st 5 sec) (Begin timing immediately.)

Unable (stagger, moves foot, sway) ☐ Steady using walking aid or other support ☐ Steady without walker or other support

Standing Balance (30s) Stopwatch

Start 00:00:09 Reset

7. Standing balance (30s) (stopwatch ready): For items nos. 7 & 8, first attempt is without assistive device. If support is required, allow after first attempt.

EACE: <https://health.mil/Military-Health-Topics/Centers-of-Excellence/EACE/Clinical-Affairs>



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# Refractive Surgery

POC: Mr. Martinez

# Surgical Services Clinical Community – Refractive Surgery

- Refractive surgery is any surgery that eliminates the need for glasses or contact lenses. Includes:
  - LASIK (laser-assisted in situ keratomileusis)
  - PRK (photorefractive keratectomy)
  - ICLs (implantable contact lenses)
  - SMILE (small incision lenticule extraction)
- Within the Military Health System, these procedures are designed to improve the functionality, lethality, and combat readiness of the warfighter through improving their visual system.

(tricare.mil, n.d.)

**CAMP**  
Clinical Assessment  
Management Portal

## WRESP Survey - Preop

**Disclaimer**

The responses to this questionnaire will primarily be used for quarterly program review. To ensure you obtain proper care, do not use this questionnaire to communicate to the clinic. Instead, use the channels identified by the clinic to share any information with clinic staff or providers. Additionally, please do not include any identifying information in your responses.

**Demographics**

1. Location of laser vision correction center  
AMC Madigan-Lewis

2. Age  
30

3. Branch of Service  
Army

4. Pay Grade  
E-4

**Preop Quality of Vision (QOV)**

5. Do you currently experience any of the following?

☐ Glare

☒ Halos

☐ Starbursts

☐ Ghosting or double images

☐ None of the above

**Current Vision and Readiness**

1. On a scale of 0 to 10, how happy are you with your current vision correction with glasses or contact lenses?

0 1 2 3 4 5 6 7 8 9 10

Extremely unhappy Neutral Extremely happy

2. On a scale of 0 to 10, how much does your current vision limit your individual military readiness?

0 1 2 3 4 5 6 7 8 9 10

Not at all Partially limits Completely limits

3. On a scale of 0 to 10, how much does your current vision limit your military activity?

0 1 2 3 4 5 6 7 8 9 10

Not at all Partially limits Completely limits

4. On a scale of 0 to 10, how much does your current vision limit performance of your everyday activities?

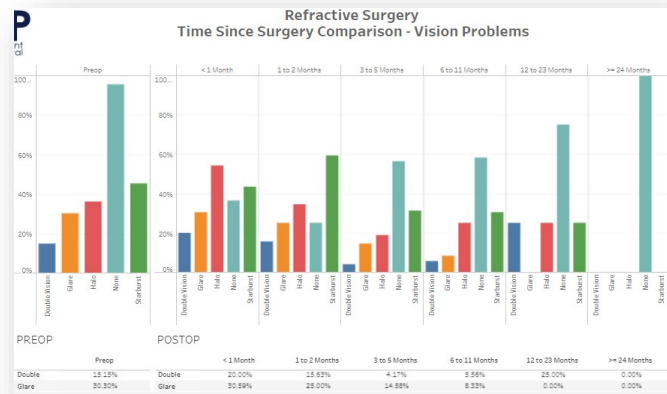


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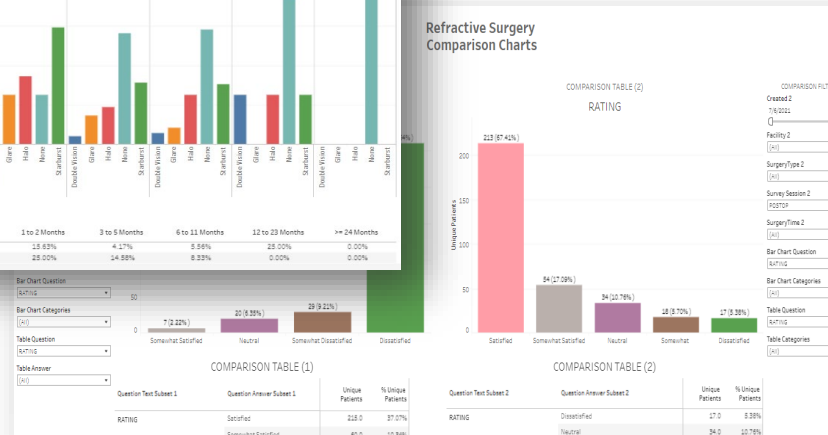


# Surgical Services Clinical Community – Refractive Surgery

- **PROs:** The Warfighter Refractive Eye Surgery Program (WRESP) Preop and WRESP Postop questionnaires are utilized to evaluate the stages of improvement and outcomes.
- **PRO-PM:** Refractive Surgery Dashboard with completion status per MTF, pre/post outcomes per surgery type, overall vision problem, etc...



Refractive Surgery Comparison Charts



**WRESP Survey - Preop**

**Disclaimer**  
The responses to this questionnaire will primarily be used for quarterly program review. To ensure you obtain proper care, do not use this questionnaire to communicate to the clinic. Instead, use the channels identified by the clinic to share any information with clinic staff or providers. Additionally, please do not include any identifying information in your responses.

**Demographics**

1. Location of laser vision correction center  
AMC Madigan-Lewis

2. Age  
30

3. Branch of Service  
Army

4. Pay Grade  
E-4

**Current Vision and Readiness**

1. On a scale of 0 to 10, how happy are you with your current vision?  
Extremely unhappy Neutral

2. On a scale of 0 to 10, how much does your current vision limit your ability to perform your job?  
Not at all Partially limits

3. On a scale of 0 to 10, how much does your current vision limit your ability to perform your job?  
Not at all Partially limits

4. On a scale of 0 to 10, how much does your current vision limit your ability to perform your job?  
Not at all Partially limits

**WRESP Survey - Postop**

**Disclaimer**  
The responses to this questionnaire will primarily be used for quarterly program review. To ensure you obtain proper care, do not use this questionnaire to communicate to the clinic. Instead, use the channels identified by the clinic to share any information with clinic staff or providers. Additionally, please do not include any identifying information in your responses.

**Demographics**

1. Location of laser vision correction center  
AMC Darnall-Hood

2. Age  
24

**Current Vision and Readiness**

3. How long ago did you have your refractive surgery? (Choose closest option)  
1 - 2 months

4. Which type of refractive surgery did you have?  
PRK (photorefractive keratectomy)

5. Has the surgery helped improve your individual military readiness?  
☒ Yes ☐ No

6a. After having surgery, have you used vision augmentation devices (e.g., night vision goggles, thermal scanners)?  
☐ Yes ☒ No

Refractive Surgery Outcomes Dashboards



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# TBI Community

(Defense Intrepid Network for TBI and Brain Health  
+ TBI Clinics)

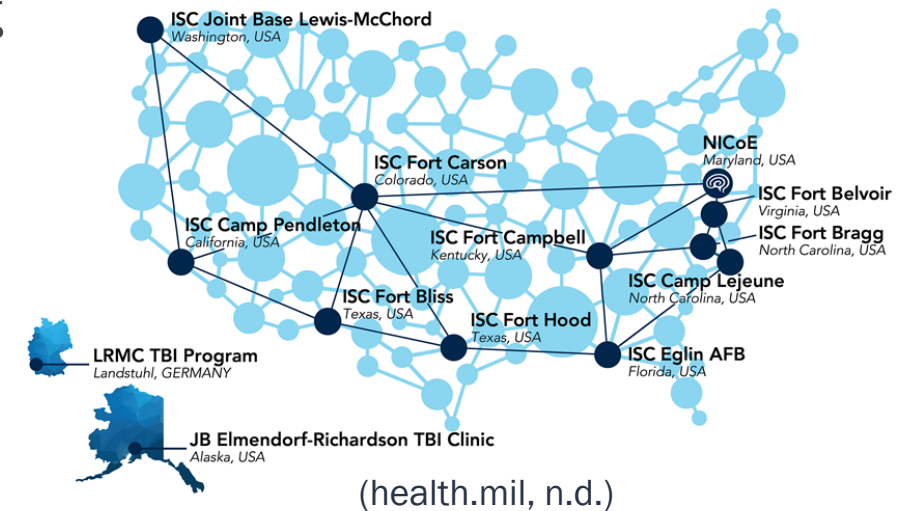
POC: Dr. Carrie Storer and Dr. Jesus Caban



# TBI Community & Intrepid Network



- Traumatic brain injury (TBI) is the invisible wounds of war that has affected over 480K+ ADSM and over 1.5M beneficiaries
- Post-concussive symptoms (PCS) affect many domains including
  1. vestibular (e.g., dizziness)
  2. somatosensory (e.g., headache)
  3. cognitive (e.g., forgetfulness)
  4. affective (e.g., irritability)
- 15-30% ADSM experience long-term symptoms
- Since the inception of the *NICoE / Defense in Intrepid Network for TBI and Brain Health*, the collection of PROs has been a top priority



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# TBI Community

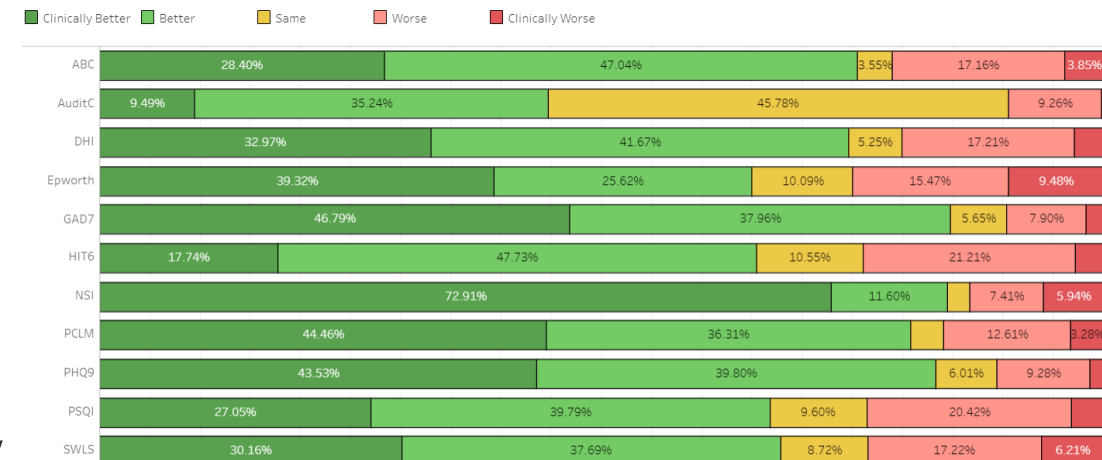
- To screen and evaluate different clinical domains, multiple PROs are dynamically used including (but not limited to):

| PRO                      | PRO-M             |
|--------------------------|-------------------|
| Post-concussive symptoms | NSI, TBI-QOL      |
| Sleep                    | Epworth, PSQI     |
| Anxiety                  | GAD-2/7           |
| Depression               | PHQ-2/8/9/15, BDI |
| Quality of Life          | SWLS              |
| Headaches                | HIT-6, PROMIS     |
| Balance & Vestibular     | ABC,              |
| PTSD                     | PCL-5             |

- PROs used at different time intervals to guarantee validity and clinical relevance



TBI Clinics and Centers that have adopted PROs



TBI Dashboards include Outcomes report



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# Collection of PROs just the first step towards understanding outcomes

The increased adoption has enabled research efforts in understanding the associations between self-reports and outcomes.

## Efficacy of an Interdisciplinary Intensive Outpatient Program in Treating Combat-Related Traumatic Brain Injury and Psychological Health Conditions

Thomas J. DeGraba<sup>1,2\*</sup>, Kathy Williams<sup>3</sup>, Robert Koffman<sup>1</sup>, Jennifer L. Bell<sup>4</sup>, Wendy Pettit<sup>1</sup>, James P. Kelly<sup>1,5</sup>, Travis A. Dittmer<sup>6</sup>, George Nussbaum<sup>1</sup>, Geoffrey Grammer<sup>1</sup>, Joseph Bleiberg<sup>1</sup>, Louis M French<sup>1</sup> and Treven C. Pickett<sup>1</sup>

<sup>1</sup> National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, United States, <sup>2</sup> Department of Neurology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States, <sup>3</sup> Credence Management Solutions, Vienna, VA, United States, <sup>4</sup> Psychological Health Center of Excellence, J3, Defense Health Agency, McClean, VA, United States, <sup>5</sup> Department of Neurology, University of Colorado School of Medicine, Marcus Institute for Brain Health, Aurora, CO, United States, <sup>6</sup> Booz Allen Hamilton, McClean, VA, United States

(WRNMMC, Jan 2021)

## Characteristics of Responder and Nonresponders in a Military Postconcussion Rehabilitation Program

Caitlyn A. Nix, BA; Latiba D. Cummings, PA-C; Lis

**Objective:** To characterize treatment responders and nonresponders (NSR) in order to understand whether certain traits in response. **Setting:** Brain Injury Rehabilitation Service at Brooke Army Medical Center, San Antonio, Texas. **Patients:** In total, 655 active duty military personnel (TBI) who received treatment between 2007 and 2020 and co-occurring conditions. **Design:** Observational retrospective analysis of outpatient clinic outcome measure was the NSI, divided into the responder and nonresponder groups. **Results:** The total NSI score was moderately to strongly correlated with all questionnaires except for the AUDIT. The strongest correlation was between the NSI Affective Score and the PHQ9 ( $r = 0.86$ ). The NSI Vestibular Score was moderately correlated with the ABC ( $r = -0.59$ ) and strongly correlated with the DHI ( $r = 0.77$ ). At the item level, the HTE-6 showed strong correlation with NSI headache ( $r = 0.80$ ), the ISI was strongly correlated with NSI difficulty sleeping ( $r = 0.63$ ), and the ESS was moderately correlated with NSI fatigue ( $r = 0.39$ ). **Conclusions:** Clinicians and healthcare administrators can use the correlations reported in this study to determine if questionnaires add incremental value for their clinic as well as to make more informed decisions regarding which questionnaires to administer.

**INTRODUCTION**  
Over 400,000 service members have been diagnosed with a traumatic brain injury (TBI) within the past two decades.<sup>1</sup> Of these injuries, an estimated 85% were classified as a mild TBI (mTBI), with a majority sustained in noncombat environments.<sup>2,3</sup> As a result of these injuries, patients often report symptoms such as headaches, sleep problems,

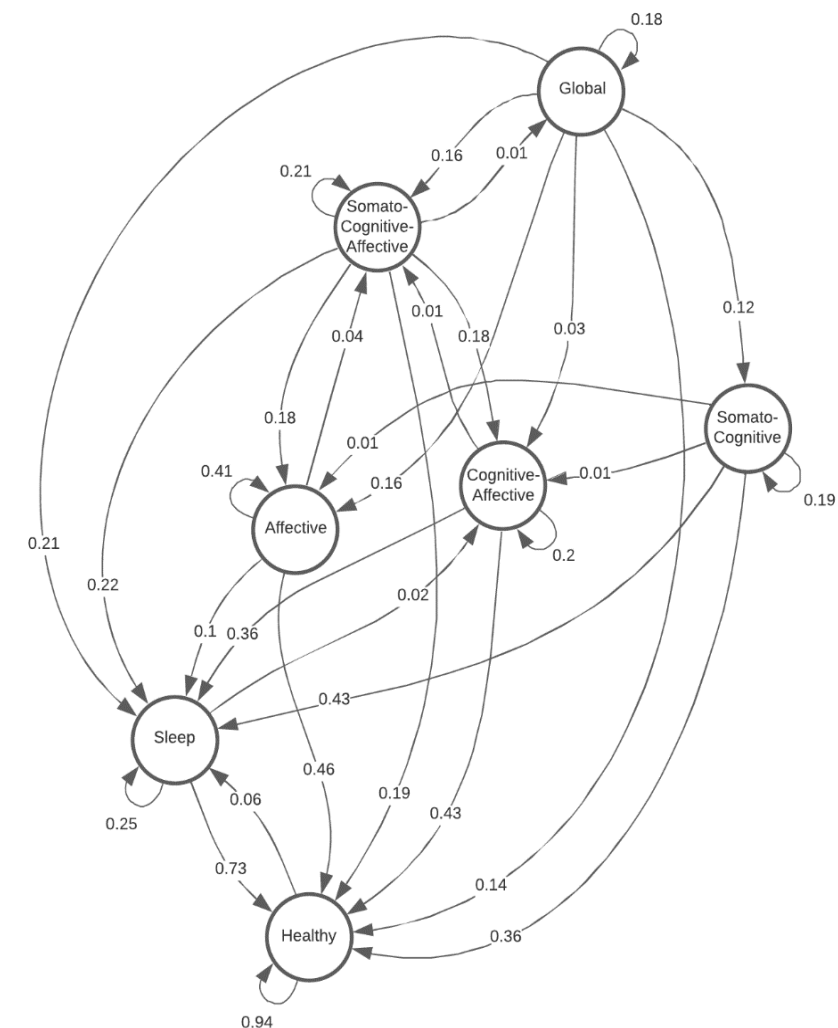
This research is part of IRB protocol #174953 with the Walter Reed Institutional Review Board. The views expressed in this manuscript are those of the authors and do not necessarily represent the official policy or position of the Army Medical Center, the Department of Defense, or any other U.S. government agency. This work was prepared under contract HT0014-19-C-0004 with Defense Health Agency Contracting Office (CO) NCR HT0014 and, therefore, is defined as U.S. Government work under Title 17 U.S.C. 105. Copyright protection is not available for any work of the U.S. Government.

Published by Oxford University Press on behalf of the Association of Military Surgeons of the United States 2022. This work is written by (a) U.S. Government employee(s) and is in the public domain in the U.S.

(Intrepid Network, Jan 2022)

(Bowles et al., April 2022, BAMC)

Severity



What's next? Outcomes analysis based on phenotypes



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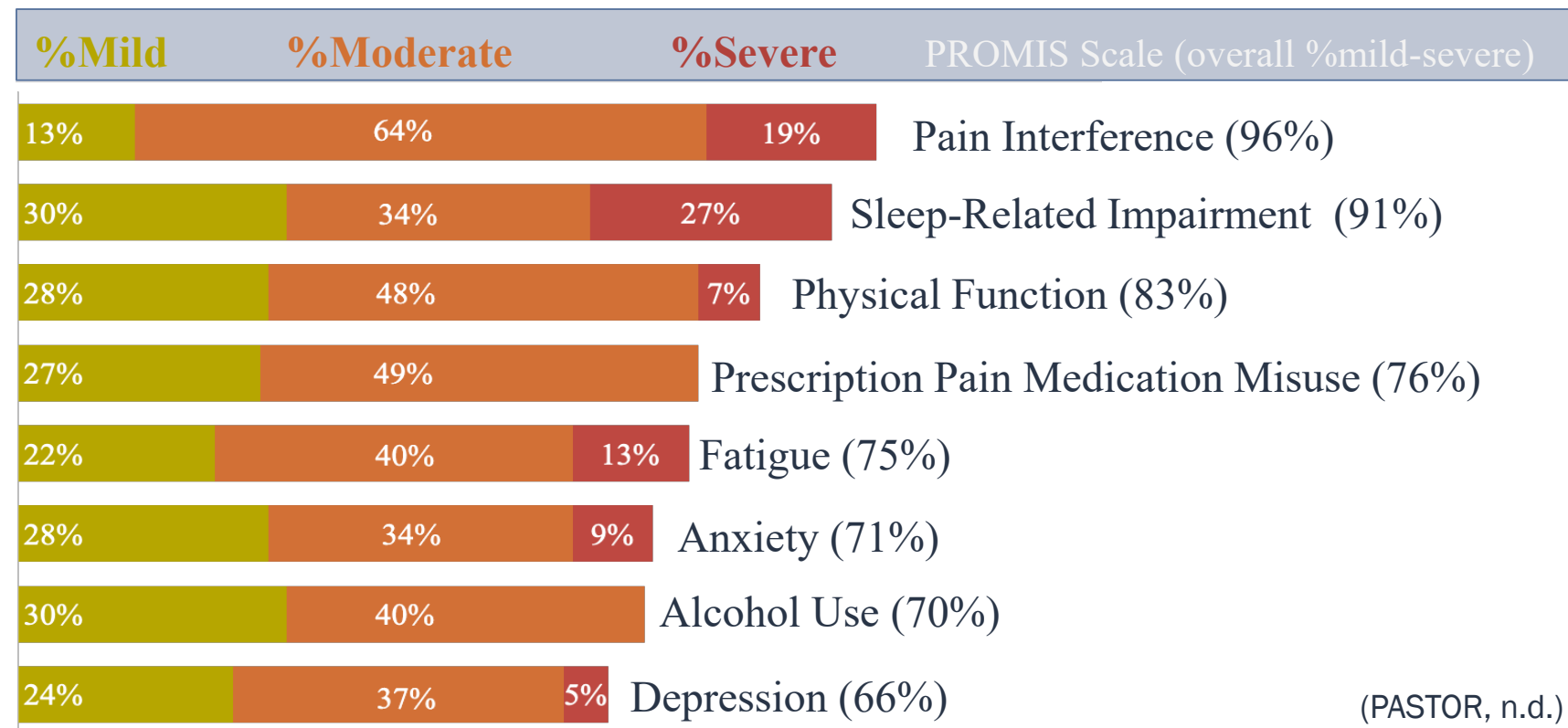
# Pain Community (PASTOR)

POC: Lt Col Jennifer Varney

# Pain Community

- Chronic pain affects 31%-44% of ADSMs and is the leading cause of disability and reduced readiness. (Sherry et al., 2021)
- The Pain Community has adopted PROMIS pain-related measures to track outcomes

## What do PASTOR patients look like at Intake?



(PASTOR, n.d.)



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# Pain Community

## Treatment History and Effectiveness

| Type of Treatment (examples)   | When it was used      | Effectiveness |
|--|-----------------------|---------------|
| Exercise, physical therapy or occupational therapy   | Currently             | No            |
| Other physical treatments (heat, massage, TENS)  | 1-3 years ago         | No            |
| Behavioral treatment (CBT, relaxation, distraction)  | More than 3 years ago | No            |
| Muscle relaxants (cyclobenzaprine, methocarbamol, diazepam, etc.)  | 1-3 years ago         | Moderately    |
| Non-steroidal anti-inflammatory medication (ibuprofen) and/or acetaminophen (Tylenol, etc.)                  | Currently             | Moderately    |
| Neuropathic pain medications (gabapentin, nortriptyline, duloxetine, etc.)                                   | Currently             | Slightly      |
| Complementary and integrative therapies (acupuncture, yoga, etc.)  | Currently             | Moderately    |
| Opioid medications (oxycodone, morphine)   | 1-3 years ago         | Slightly      |
| Injection therapies (epidural steroid or joint injections, etc.)   | Currently             | Moderately    |
| Orthopedic or neurosurgical surgeries (spinal fusion, arthroscopic joint surgeries, joint replacement, etc.) | 1-3 years ago         | Slightly      |

(PASTOR, n.d.)



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# Pain Management Outcomes

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**Example of Future Capabilities:** Madigan AMC Interdisciplinary Pain Management Center Research Study (Stewart et al., 2021)

**40+  
Hours**

Minimum Suggested Number of Interdisciplinary Therapy Hours to Ensure Clinically Meaningful Pain Impact Reductions

**Intake Pain Impact and  
Depression Symptom Severity**

Factors Associated with Treatment Effects



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# Musculoskeletal Community (MOTION)

POC: Dr. Carrie Storer and COL Lee

# Musculoskeletal Community

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- Small Market and Standalone MTF Organization (SSO) and several large markets choosing MOTION/MSK Triage
- Focus on information tools designed to improve therapeutic alliance and align practice behavior with most effective care
- Ortho intra-ops





# Outcomes Report

Outcomes Report Export - MOTION - Rehab

\* Survey: Defense-Veteran Pain Rating Scale (DVPRS) Treatment (from Clinician Assessment): Body Region: Baseline Pain Level:

Yellow Flag Domains: Encounters: MSK Triage Category: SEARCH

**Filters**

**Mean starting pain ratings: No YF = 4.0 / 3 YF = 5.9**

Defense-Veteran Pain Rating Scale (DVPRS) Export to PDF Export to Excel

| Name   | EDIPN      | Baseline | <30 Day's | 31-60 Day's | 61-90 Day's | 91-180 Day's | 181-270 Day's | 271-360 Day's | 361 - 720 Day's | 721+ Day's |
|--|------------|----------|-----------|-------------|-------------|--------------|---------------|---------------|-----------------|------------|
| Acker, Indy  | 1292600107 | 5        | 6         | 5           | 3           | 3            | 5             | 4             | 4               |            |
| Attest, Resolve3   | 12345609   | 8        |           |             |             |              |               |               |                 |            |
| Funke, Lindsay   | 68914      | 2        | 8         | 3.2         | 4.9         | 5.6          | 5.4           |               |                 |            |
| Testpatient, Qr-test   | 00112      | 6        |           |             |             |              |               |               |                 |            |
| White, Snow  | 2225553333 | 9        |           |             |             |              |               |               |                 |            |
| AVERAGE OF ACTUAL SCORES/VALUES (My patients)                          |            | 6        | 7         | 4.1         | 4           | 4.3          | 5.2           | 4             | 4               | 0          |
| MHS AVERAGE SCORES/VALUES  |            | 4.8      | 5         | 5.5         | 3.8         | 5.6          | 4.3           | 2.3           | 5.5             | 5.4        |
| % of patients achieving Minimal Clinically Important Difference (MCID) |            |          | 0.0%      | 0.0%        | 50.0%       | 50.0%        | 0.0%          | 0.0%          | 0.0%            | 0          |
| (My patients) (MCID: 1.4 for MOTION DVPRS - Rehab)                     |            |          |           |             |             |              |               |               |                 |            |
| MHS AVERAGE % of patients achieving MCID                               |            |          | 26.0%     | 15.4%       | 75.0%       | 28.6%        | 33.3%         | 66.7%         | 55.6%           | 50.0%      |

**A clinicians patients**

**MHS averages**

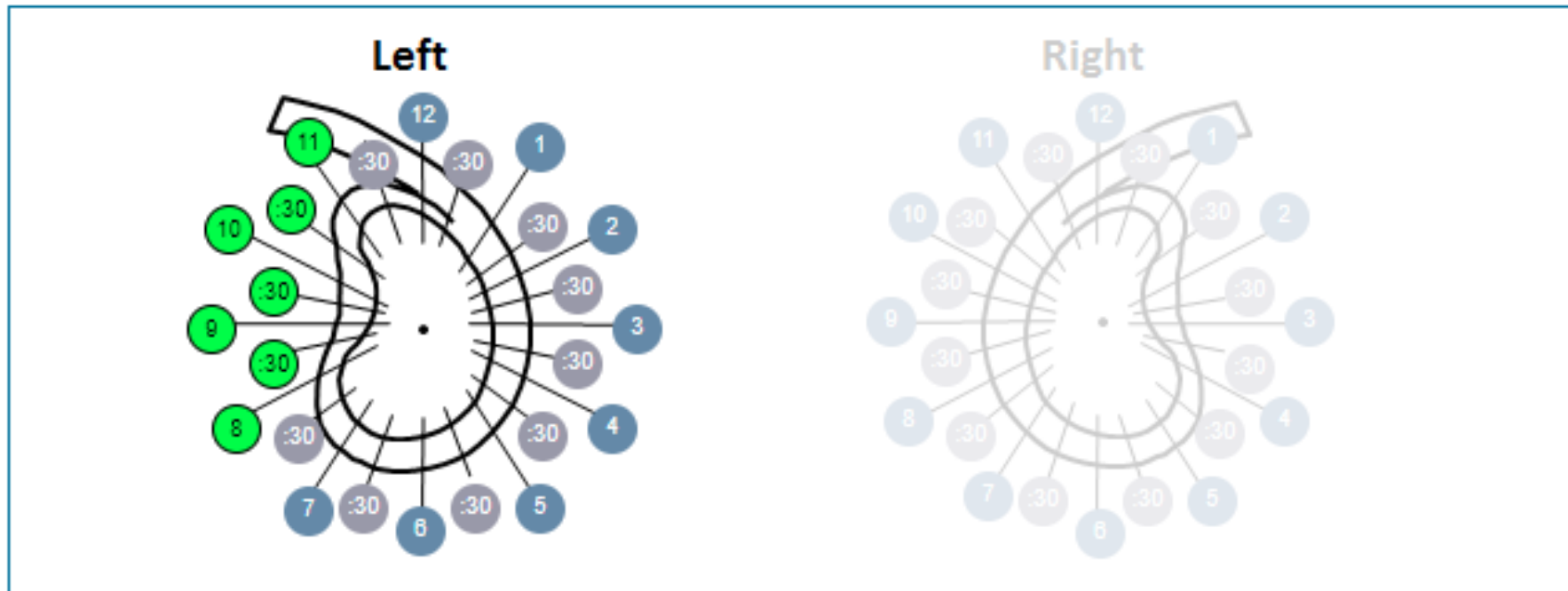
**A clinicians averages**

NOTE: Names and data on this slide are fictional

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# Precision Documentation in Intraops



(MOTION, n.d.)



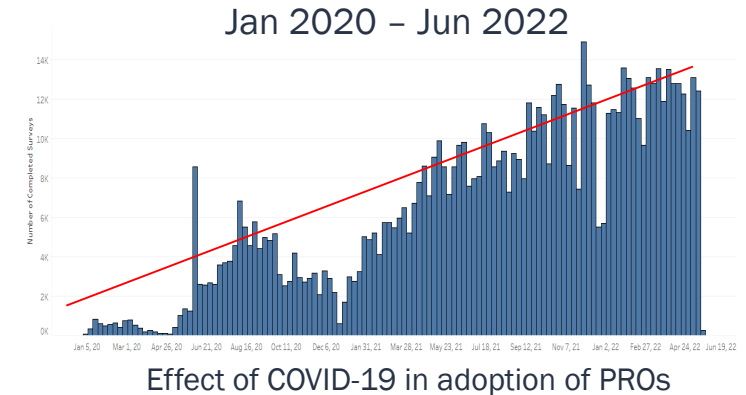
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# Adoption of PROs across the MHS

# Adoption of Patient Reported Outcomes (PROs)

- Multiple clinical communities continue to embrace patient self-reports
- In July 2022, DHA crossed a significant milestone
  - 1M+ patient questionnaires collected through the *Clinical Assessments Management Portal* (CAMP) by five communities
  - Most since COVID-19



Year-over-year Increase

T1: May 2020-2021

T2: May 2021-2022

1) TBI Community (TBI Portal): 24.5% ↑

2) Pain Community (PASTOR): 73.3% ↑

3) Musculoskeletal Community (MOTION): 326.9% ↑

4) Amputee Community (EACE): 40.9% ↑

5) Surgical Services CC / Refractive Surgery: N/A (New community, thus no YoY data)

(DHA, 2022)



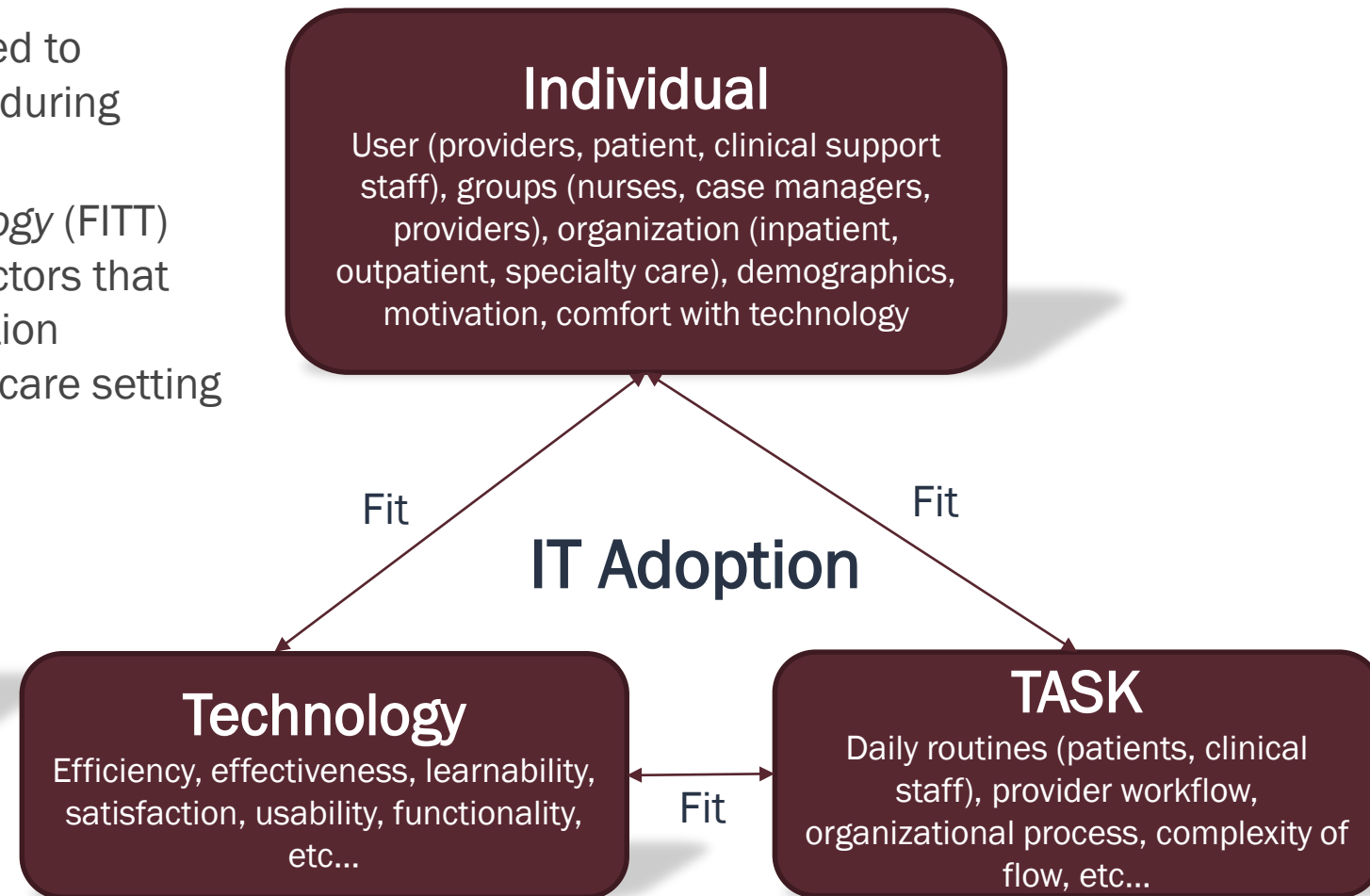
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# FITT Framework for IT Adoption

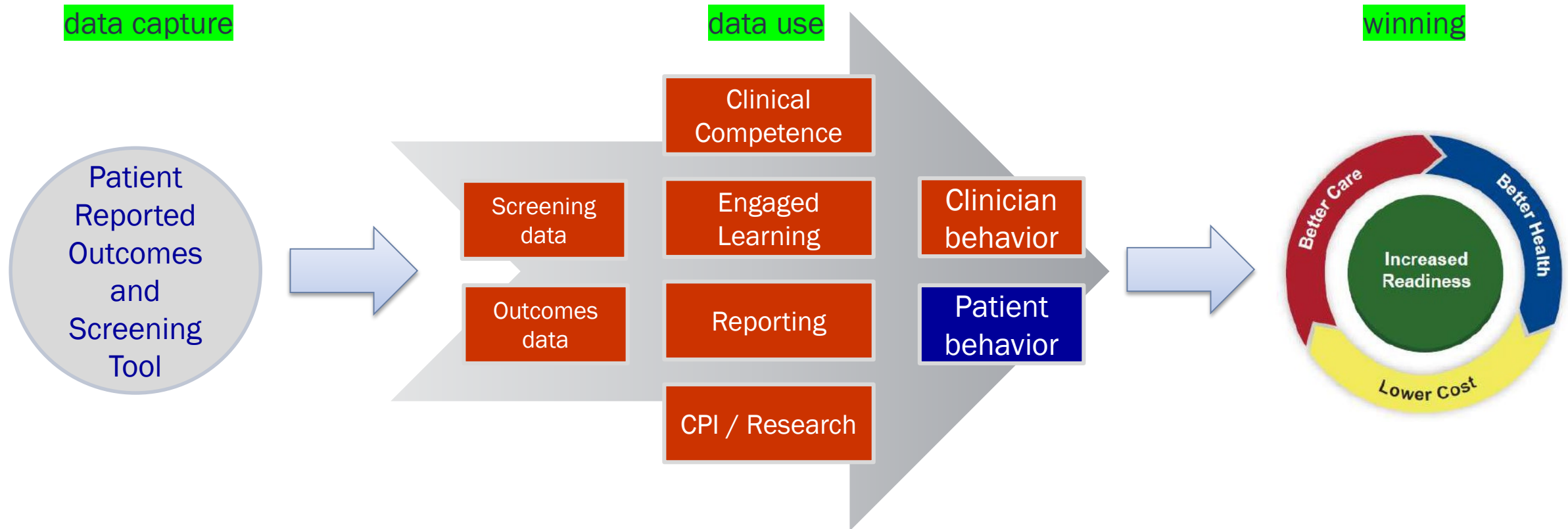
- Several implementation models can be used to analyze barriers and facilitators that occur during implementation.
- *Fit between Individuals, Task, and Technology* (FITT) framework developed helps analyze the factors that influence the success or failure of information technology (IT) implementation in a health care setting

**How is your organization using or can use the FITT framework to improve the adoption of PROs?**



# Lessons Learned

# A Model for Data Driven Meaningful Improvement



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# Lesson #1: Data Capture



# Data Capture (QR Auto-Registration)

Survey Order: General


Session Name: Baseline

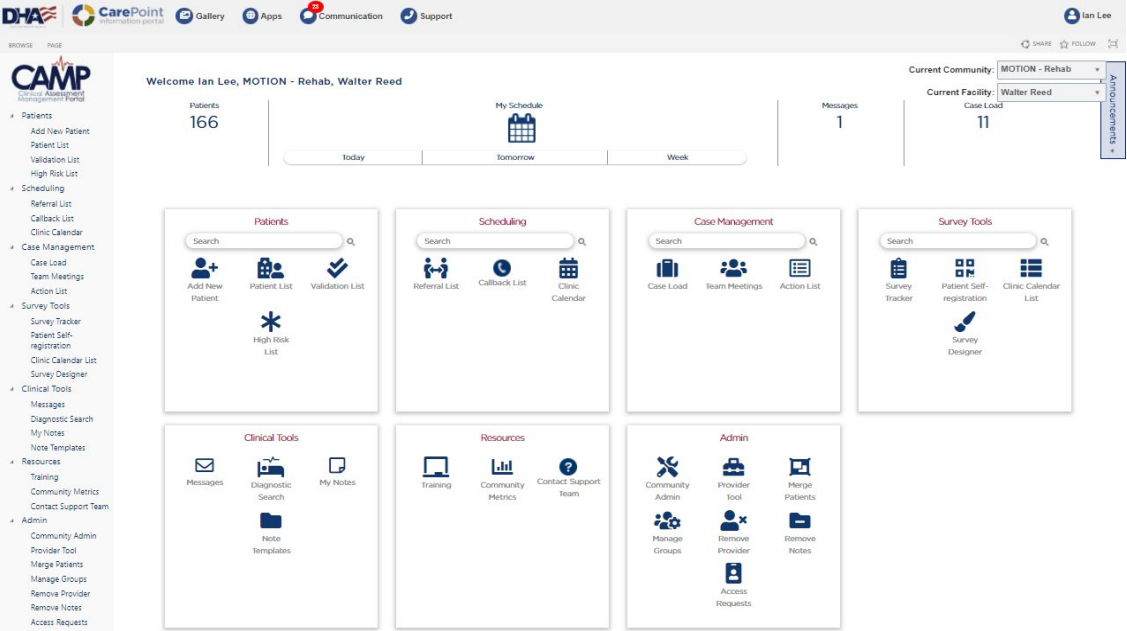
List of Surveys: MOTION DVPRS ortho rehab, MOTION OSPRO rehab, MOTION PAIN History of Present Illness Diagram, MOTION PATIENTGOAL rehab, MOTION READINESS rehab, Motivation Screening, MSK Screening, PROMIS Bank v1.1 - Pain Interference, PROMIS Bank v2.0 - Physical Function

QR Code Expiration: 3/13/2022

Instructions: Please ask the patient to scan the QR code on their personal device and follow the instructions.

Note: Please don't give a copy of this sheet to the patient.





The screenshot shows the CAMP (CarePoint Auto-Registration Management Portal) interface. The top navigation bar includes logos for DHA, CarePoint, and various tools like Gallery, Apps, Communication, and Support. The main header shows the user's name (Ian Lee) and the current community (MOTION - Rehab, Walter Reed). The dashboard displays several key metrics: Patients (166), My Schedule (Today, Tomorrow, Week), Messages (1), and Current Facility Case Load (11). Below these are four main tool categories: Patients (Add New Patient, Patient List, Validation List, High Risk List), Scheduling (Referral List, Callback List, Clinic Calendar), Case Management (Case Load, Team Meetings, Action List), and Survey Tools (Survey Tracker, Patient Self-registration, Clinic Calendar List). At the bottom, there are three more categories: Clinical Tools (Messages, Diagnostic Search, My Notes, Note Templates), Resources (Training, Community Metrics, Contact Support Team), and Admin (Community Admin, Provider Tool, Merge Patients, Manage Groups, Remove Provider, Remove Notes, Access Requests).

NOTE: There are five additional ways to collect data in CAMP

(DHA, n.d.)



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# Data Capture – Incentivizing (proposed)

|   |  |
|---|--|
| <p>MOTION &amp; MSK Triage Tool Adoption</p> <p>Incentive System Reported Monthly</p> | <p>Tiered payment for adoption of two measures: 1) outcomes collection through the Military Orthopedic Tracking Injuries &amp; Outcomes Network (MOTION) and 2) the Musculoskeletal Triage Decision Support Tool</p> <p>&lt;1%=\$0,<br/>           1%-19.99%=\$20<br/>           20%-29.99%=\$24<br/>           30%-39.99% = \$28<br/>           40%-49.99% = \$32<br/>           50%-59.99% = \$36<br/>           60%-100%=\$40</p> <p>Total Payment = Rate X the numerator (# of patients with MOTION and MSK Triage adoption)</p> |
|---|--|



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# Lesson #2: Data Use

# Data Use – Screening

## CPGs for Optimized Work Participation After Injury or Illness

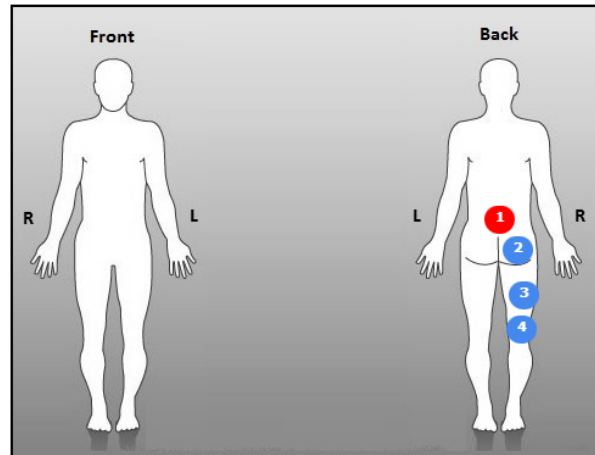
### RISK FACTORS – CLIENT PRESENTATION

**A** Physical therapists should screen for risk factors associated with delayed RTW or work absence throughout the episode of care, using patient interview and validated tools. Risk factors include type of injury, previous injury episodes, extended work absence prior to referral, **comorbidities, and the presence of psychosocial factors such as high levels of perceived or self-reported functional disability, severity of pain, pain behaviors, fear-avoidance beliefs, low recovery expectations, and low self-efficacy.**

### EXAMINATION – PSYCHOSOCIAL FACTORS

**A** Physical therapists should **administer reliable and valid tools**, as part of the evaluation and throughout treatment, to identify the presence of fear **avoidance, psychosocial risk, or readiness for change**, which all impact RTW outcomes, to guide patient management.

(Daley et al., 2021)



### INTERVENTIONS – CARE INVOLVING MULTIPLE COMPONENTS

**A** Physical therapy providers should treat workers with estimated low risk of delayed RTW with a combination of condition-specific exercise and clinic-based work-focused interventions, such as work-task replication, to improve work status.

**A** Physical therapy providers should treat workers with estimated high risk of delayed RTW with a combination of clinic-based work-focused interventions and jobsite interventions to improve work status.

MOTION - Rehab Provider Report

|   |                                    |            |  |
|---|------------------------------------|------------|--|
| ! | Impaired deployment readiness      | 07/13/2020 | Patient reports impaired readiness   |
|   | Severe pain score                  | 07/13/2020 | Negative Screen  |
|   | Major change in health             | 07/10/2020 | Negative Screen  |
| ! | Negative mood                      | 07/13/2020 | Patient responses indicate negative mood present   |
| ! | Positive affect/coping             | 07/13/2020 | Patient responses NOT consistent with positive affect and higher levels of self-efficacy / pain acceptance |
| ! | Fear avoidance                     | 07/13/2020 | Patient responses indicate fear avoidance behavior present   |
|   | PHQ-2+                             | 08/09/2021 | Negative Screen  |
| ! | Motivation to participate in rehab | 08/09/2021 | Sub-optimal motivation to participate in rehab; 39   |
| ! | Motivation to stay in the military | 08/09/2021 | Sub-optimal motivation to stay in military; 45   |
| ! | Medical Separation desired?        | 08/09/2021 | Positive Screening   |

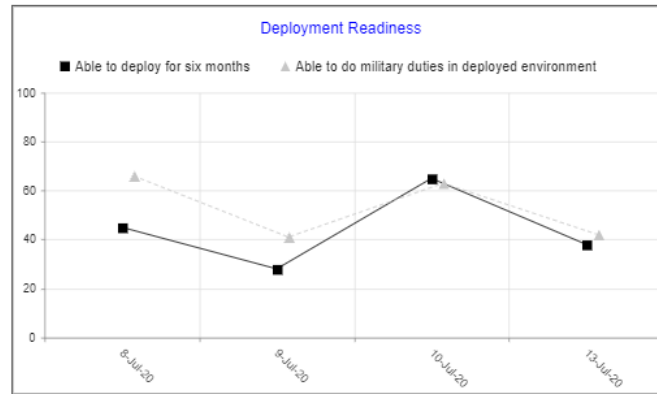


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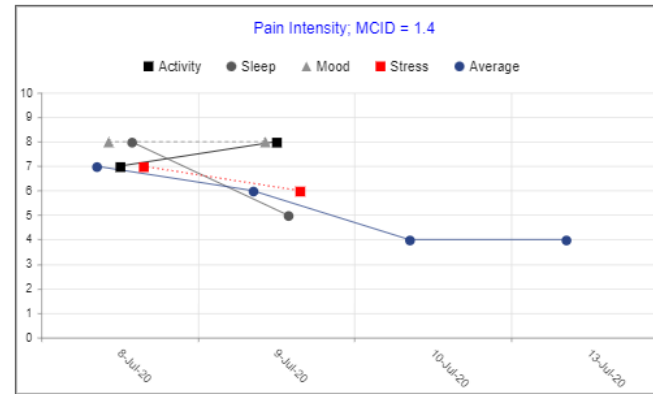


# Data Use - Outcomes

Deployment Readiness



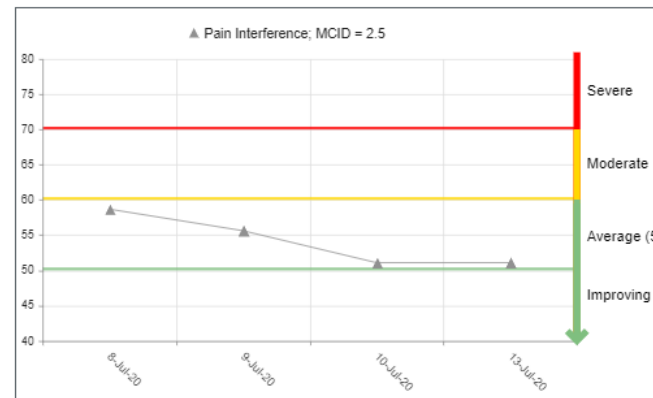
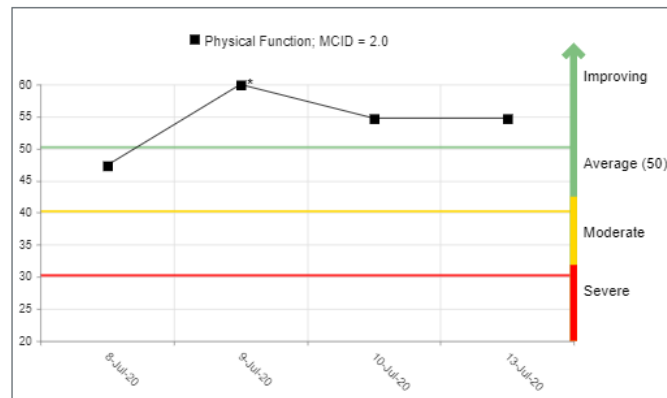
Defense & Veterans Pain Rating Scale (DVPRS)



Service member's confidence to pass Combat/physical fitness test: **Pass a modified ACFT (less than 6-events and/or alternate cardio event)**

PROMIS Scales

\*indicates that value is off the chart



(DHA, 2020)



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# Data Use - Clinical Competence

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- Traditional
  - Training
  - Evidence based practice (literature, experience, patient values)
  - Qualitative feedback, not aggregated, without comparison
- Data use opportunity
  - Quantitative feedback learning loop, individual and aggregated w/ comparison
  - Every patient a learning opportunity; hypothesis, confirmation, adjust cycle
  - Mentorship tool

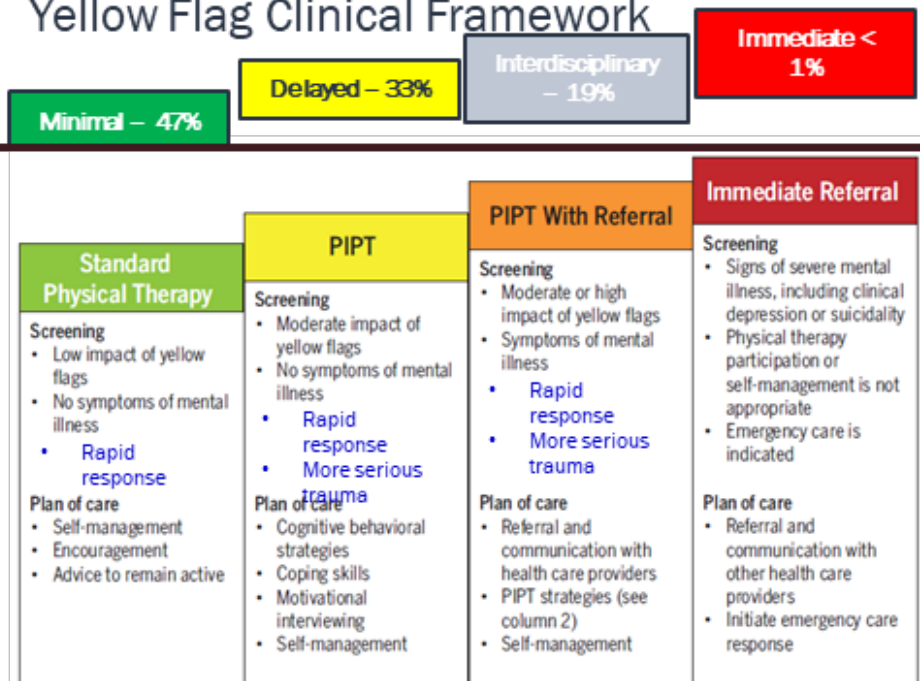


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# Data Use – Musculoskeletal Triage

## MSK Triage Adapted to Peer-reviewed Yellow Flag Clinical Framework



**FIGURE 3.** Four pathways for decision making in the management of yellow flags in physical therapy practice.  
Abbreviation: PIPT, psychologically informed physical therapy.

**Minimal** – The clinician predicts their patient will return to duty / life within 90 days of 1st visit with “standard,” evidence-based rehab care. SM has a well-established readiness issue that is expected to resolve promptly.

**Delayed** - The clinician predicts their patient will return to duty / in greater than 90 days from 1st visit but patient is anticipated to recover at a rate commensurate with “standard,” evidence-based rehab care. SM has a well-established readiness issue that is expected to require more time to resolve.

**Interdisciplinary** – The clinician predicts their patient will return to duty / life in greater than 90 days and potentially up to 12 months with sufficient patient engagement in self-care and appropriate interdisciplinary care. SM has a multi-factorial problem that will require a strong commitment to integrated care to address, and is expected to require 3-12 months to resolve.

**Immediate** – patient with urgent/emergent condition that requires immediate referral

Stearns et al, 2021

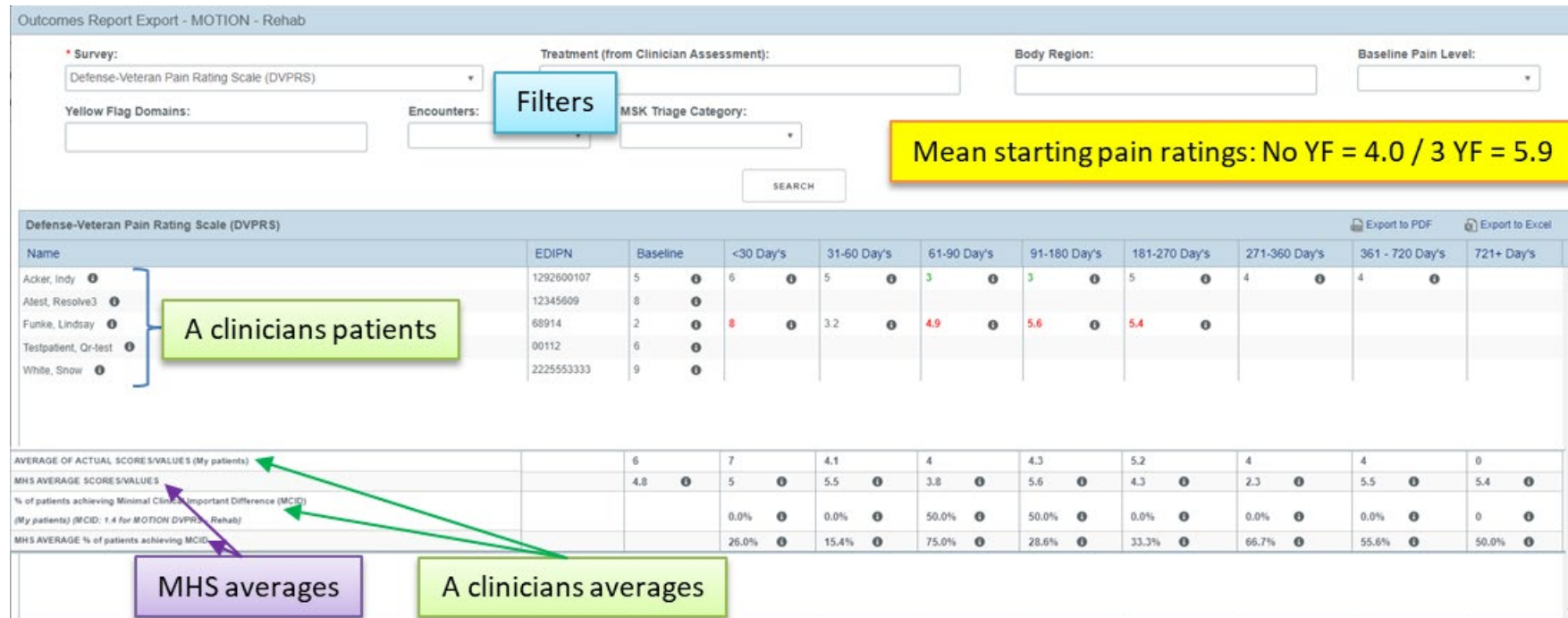


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# Data Use – Engaged Learning – Outcomes Report



## Measurement

- For Defense Veterans Pain Rating Scale, PROMIS Physical Function and Pain Interference
- Fusion of clinical, data and software development science

## Measurement Tool – Outcomes Report

- Clinicians see outcomes for all patients, their patient means and MHS means
- Filters
- Chiefs see outcomes for all patients in their clinics

NOTE: Names and data on this slide are fictional

(MOTION, n.d.)



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# Data Use – Reporting - Adoption

Table

Year

(All)

Month

(All)

Facility Name

(All)

MEPRS3

(All)

MEPRS4

(All)

Specialty

(All)

Survey Completion Rate by DMIS - MEPRS3

|      |                | year (DMIS)1 / month (DMIS)1 |         |          |       |        |        |        |        |        |          |         |          |          |         |          |        |
|------|----------------|------------------------------|---------|----------|-------|--------|--------|--------|--------|--------|----------|---------|----------|----------|---------|----------|--------|
|      |                | 2021                         |         |          |       |        |        |        |        |        |          |         |          | 2022     |         |          |        |
| Dmis | Facility Name. | Decemb..                     | January | February | March | April  | May    | June   | July   | August | Septem.. | October | Novemb.. | Decemb.. | January | February | March  |
| 60   | ACH BLAN..     |                              |         |          | 0.11% | 17.07% | 18.71% | 38.20% | 38.04% | 41.93% | 47.97%   | 45.94%  | 46.02%   | 42.98%   | 41.99%  | 34.64%   | 43.87% |
| 89   | AMC WOM..      | 0.00%                        | 0.00%   | 0.00%    | 0.03% | 0.00%  | 0.00%  | 0.00%  | 0.07%  | 0.72%  | 10.27%   | 15.26%  | 16.14%   | 16.82%   | 17.60%  | 12.03%   | 22.10% |
| 108  | AMC WILLI..    | 1.51%                        | 0.28%   | 0.55%    | 0.19% | 5.66%  | 12.52% | 14.98% | 12.92% | 12.13% | 9.19%    | 7.51%   | 8.32%    | 9.46%    | 11.12%  | 13.02%   | 19.38% |
| 3    | AHC LYTE..     |                              |         |          |       |        |        |        |        |        |          |         |          |          |         |          | 13.98% |
| 53   | AMC TRIN..     |                              |         |          |       | 0.00%  | 4.43%  | 6.73%  | 3.05%  | 7.70%  |          | 8.43%   | 13.77%   | 10.74%   | 7.50%   | 9.73%    |        |

Survey Completion Rate by Facility/Unit - MEPRS3

|      |                          | 2021   |       |        |        |        |        |        |          |         |          |          |         | 2022     |        |  |
|------|--------------------------|--------|-------|--------|--------|--------|--------|--------|----------|---------|----------|----------|---------|----------|--------|--|
| Dm.. | Parent (MEPR)1           | Meprs3 | March | April  | May    | June   | July   | August | Septem.. | October | Novemb.. | Decemb.. | January | February | March  |  |
| 60   | ACH BLANCHFIELD-CAMPBELL | BLB    | 0.00% | 3.51%  | 5.84%  | 6.93%  | 5.39%  | 10.66% | 54.40%   | 73.14%  | 68.61%   | 74.80%   | 79.14%  | 63.71%   | 77.71% |  |
|      |                          | BLA    | 0.16% | 23.70% | 25.68% | 52.99% | 52.77% | 60.75% | 62.81%   | 59.90%  | 58.05%   | 56.56%   | 51.74%  | 44.01%   | 54.30% |  |
|      |                          | BED    | 0.00% | 6.59%  | 3.27%  | 10.53% | 9.66%  | 7.10%  | 7.53%    | 8.47%   | 23.84%   | 12.88%   | 11.80%  | 14.13%   | 17.69% |  |
|      |                          | BAR    | 0.00% | 2.62%  | 2.42%  | 7.42%  | 4.71%  | 5.26%  | 7.12%    | 6.12%   | 8.21%    | 4.62%    | 4.92%   | 1.20%    | 9.88%  |  |

(MOTION, n.d.)



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# Data Use – Trust in Outcomes Data

> J Orthop Sports Phys Ther. 2022 Jun;52(6):401-407. doi: 10.2519/jospt.2022.11193.

## All MCIDs Are Wrong, But Some May be Useful

Christopher W Boyer, Ian E Lee, Matthew S Tenan

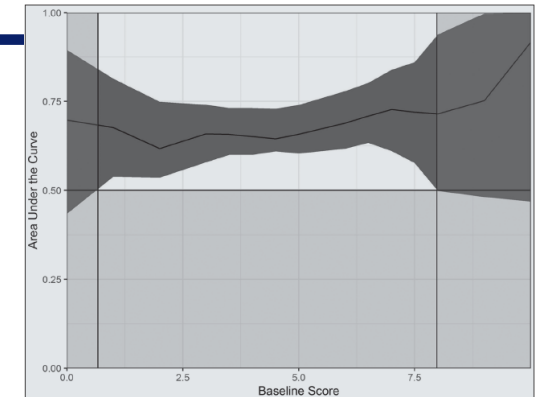
PMID: 35647882 DOI: [10.2519/jospt.2022.11193](https://doi.org/10.2519/jospt.2022.11193)

### Abstract

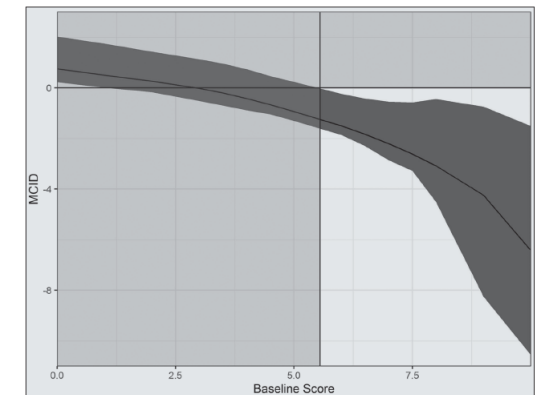
**Objective:** To demonstrate how to apply a baseline-adjusted receiver operator characteristic curve (AROC) analysis for minimum clinically important differences (MCIDs) in an empirical data set and discuss new insights relating to MCIDs.

### CONCLUSIONS

- Baseline values influence MCID and accuracy of MCID
- MCIDs only statistically and theoretically valid for a discrete range of baseline scores
- Logic built into CAMP for MOTION and PASTOR



**FIGURE 3.** The baseline-adjusted AUC analysis for DVPRS. The black line surrounded by the dark gray band is the point estimate for the AUC, and the dark gray band is the 95% confidence intervals. The horizontal line at 0.50 represents the point at which an estimate is no better than random chance. The light gray sections represent when AUC point estimates are no better than random chance because the confidence intervals around that estimate cross the 0.50 threshold. Abbreviations: AUC, area under the curve; DVPRS, Defense and Veterans Pain Rating Scale.



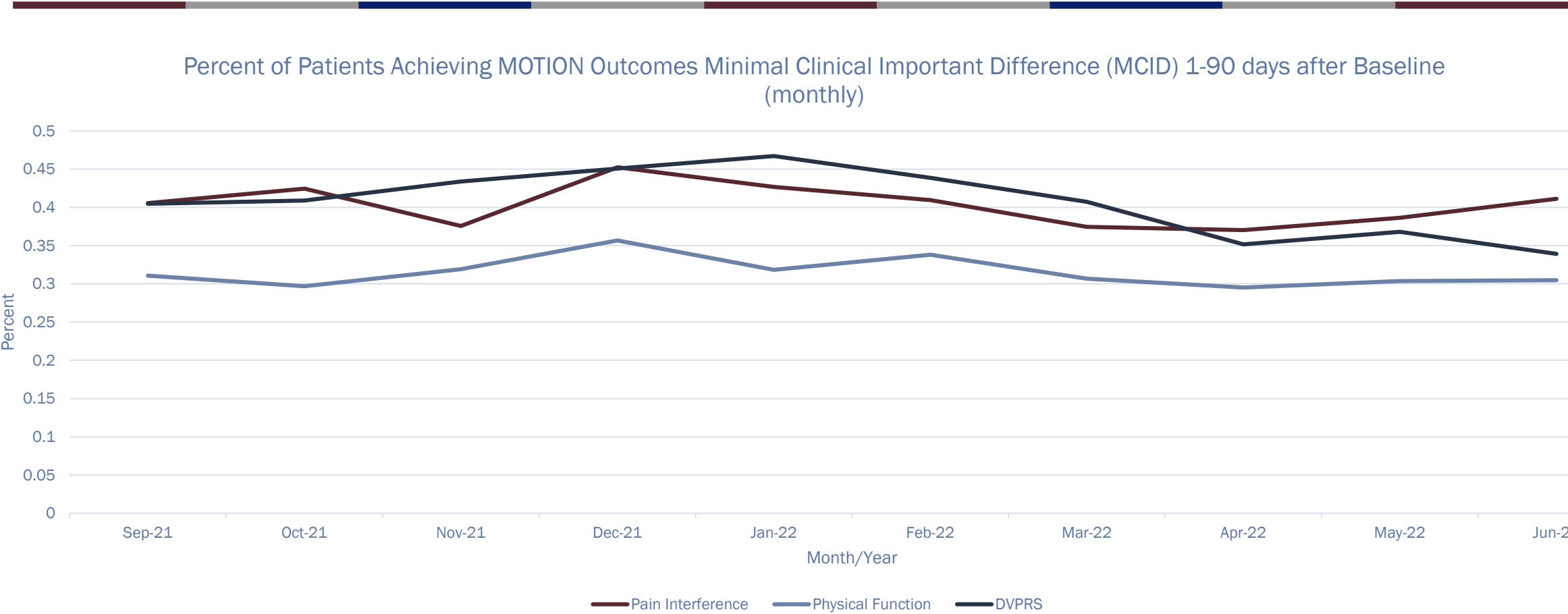
**FIGURE 4.** The baseline-adjusted MCID analysis for DVPRS. The black line surrounded by the dark gray band is the point estimate for the MCID, and the dark gray band is the 95% confidence intervals. The horizontal line at 0 reflects a threshold that should be considered when determining if the MCID estimate is theoretically reasonable or possible. The light gray sections represent when MCID estimates do not make theoretical sense because the confidence intervals around that estimate suggest that the MCID could be either positive or negative or when the point estimate does not make logical sense (eg, increases in pain are desirable to reach MCID). Abbreviations: DVPRS, Defense and Veterans Pain Rating Scale; MCID, minimum clinically important difference.



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# Data Use – Reporting - Clinical Effectiveness



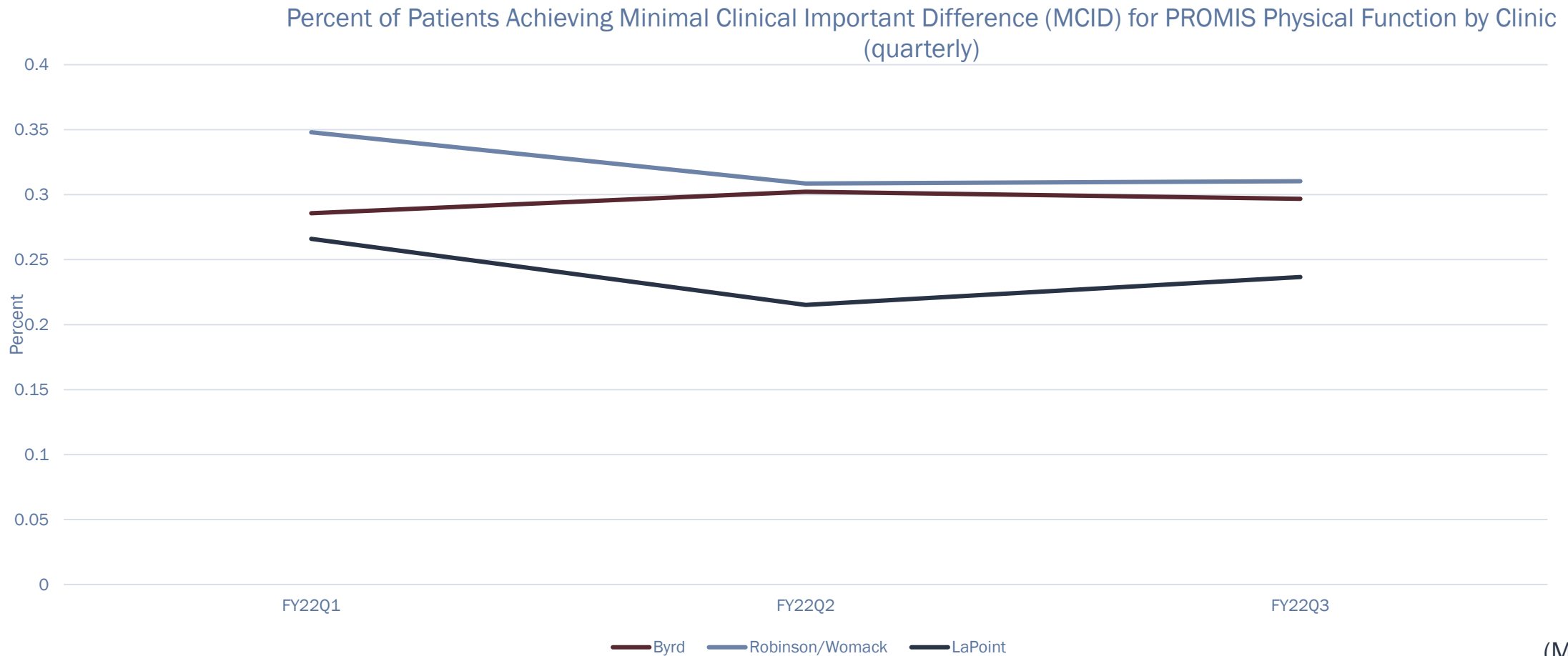
(MOTION, 2022)



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# Data Use – Reporting - Clinical Effectiveness



(MOTION, 2022)

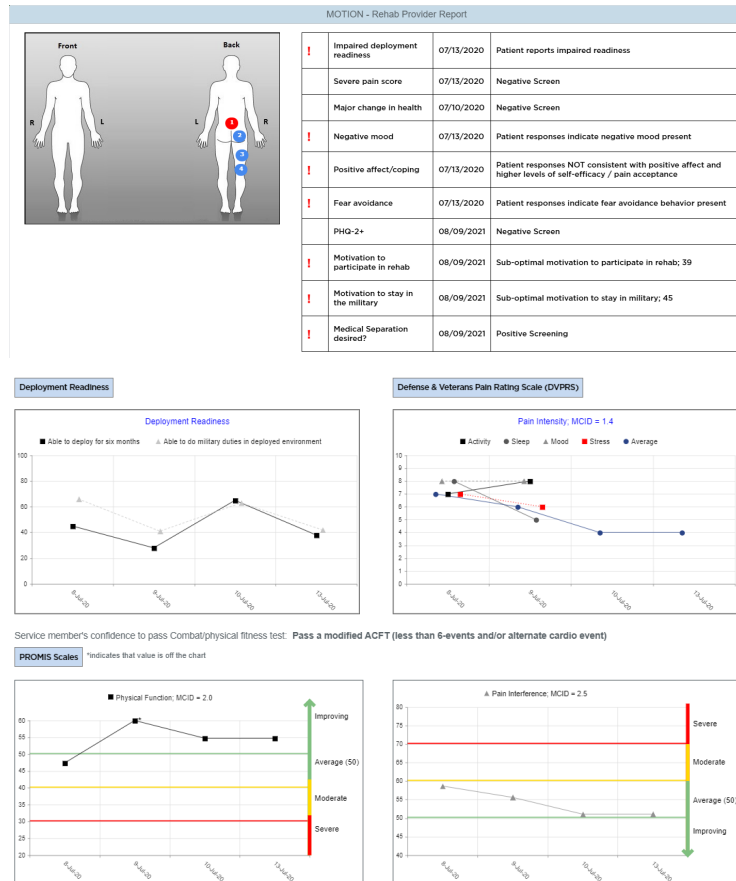


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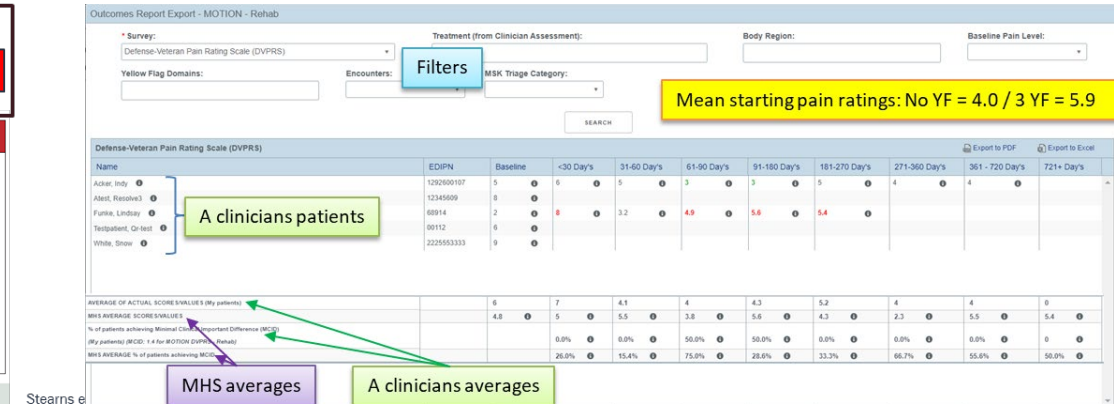
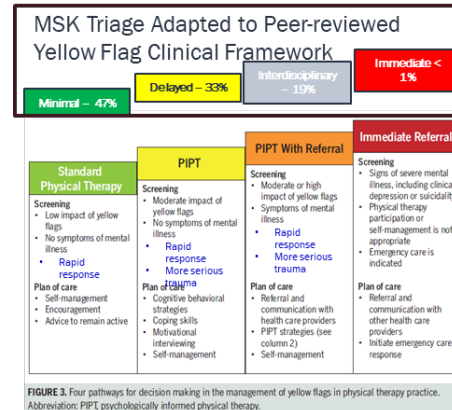


# Lesson #3: Behavior Change

# Clinician Behavior



NOTE: Names and data on this slide are fictional



## CHANGE DRIVERS

- Comparisons
- Longitudinal data
- Mentorship
- Interesting and exciting learning

## BENEFICIAL CHANGES IN BEHAVIOR

- Data supported decision making
- Right care for the right patient at the right time (evidence-based)
- Management timeline
- Limited-duty timelines

(MOTION, 2022)



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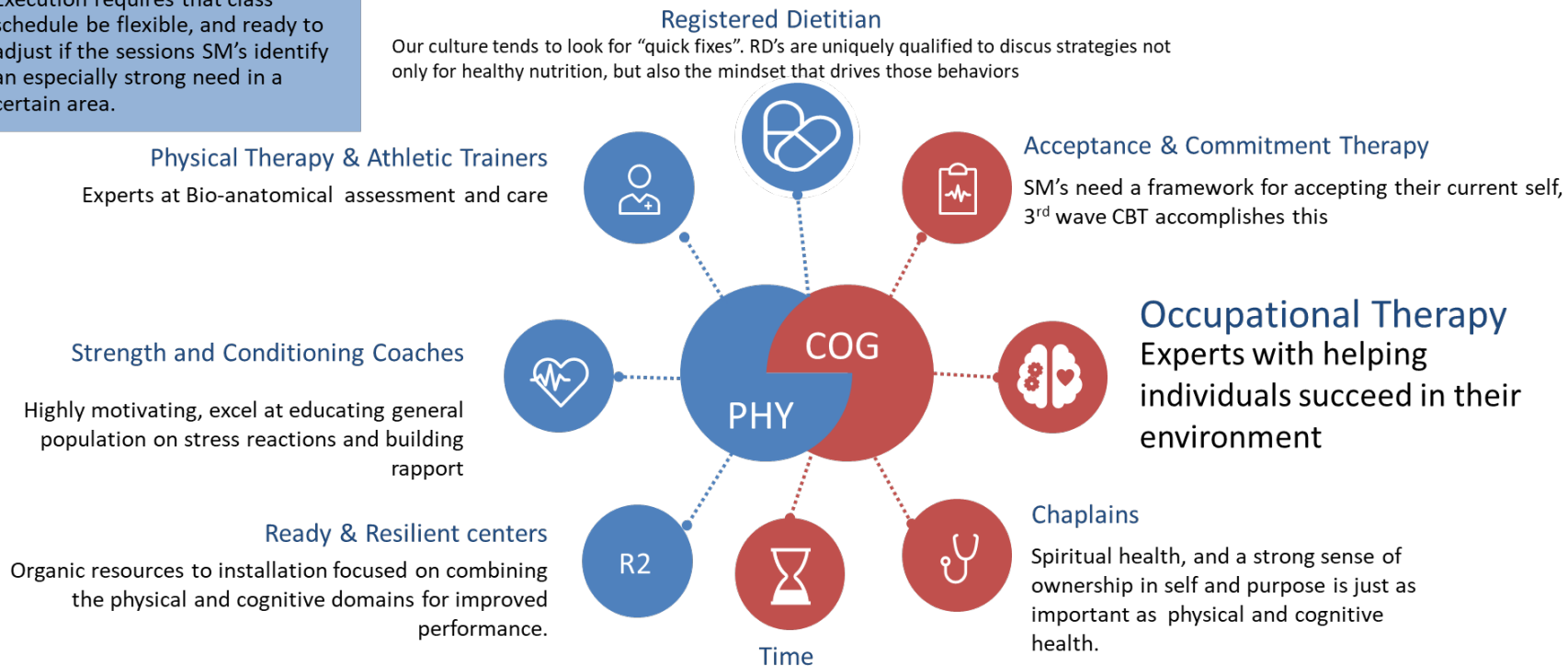


# Clinician Behavior – Interdisciplinary Care

## Physical or Cognitive issue?

We cannot continue with a false choice in this environment, the answer is a biopsychosocial model of care.<sup>1,2,3,6</sup>

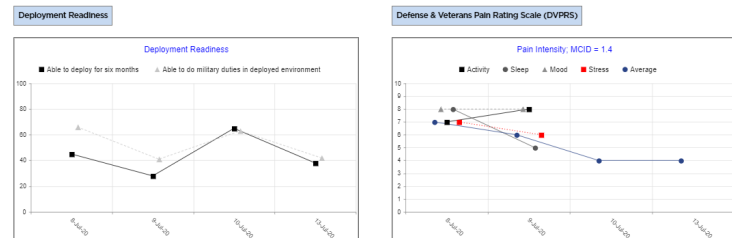
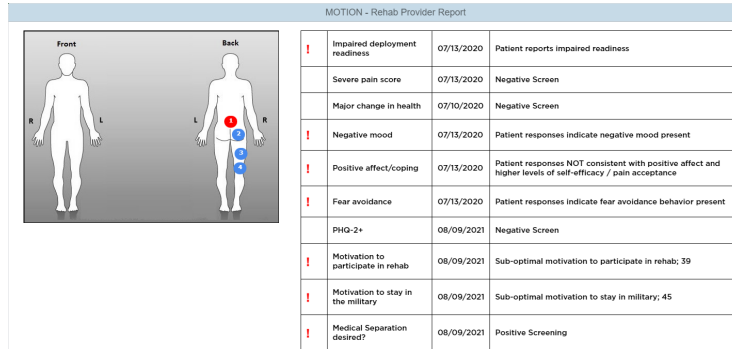
Execution requires that class schedule be flexible, and ready to adjust if the sessions SM's identify an especially strong need in a certain area.



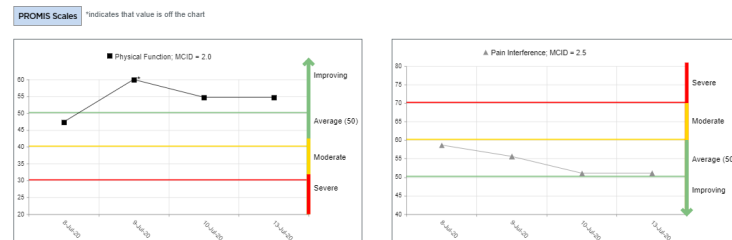
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# Patient Behavior



Service member's confidence to pass Combat/physical fitness test: Pass a modified ACFT (less than 6-events and/or alternate cardio event)



- CHANGE DRIVERS
  - Confidence in clinician
  - Confidence in system
  - Education
  - Transparency
  - Therapeutic alliance
- BENEFICIAL CHANGES IN BEHAVIOR
  - Compliance with care plan
  - Healthy habits
  - Manage stressors / life balance



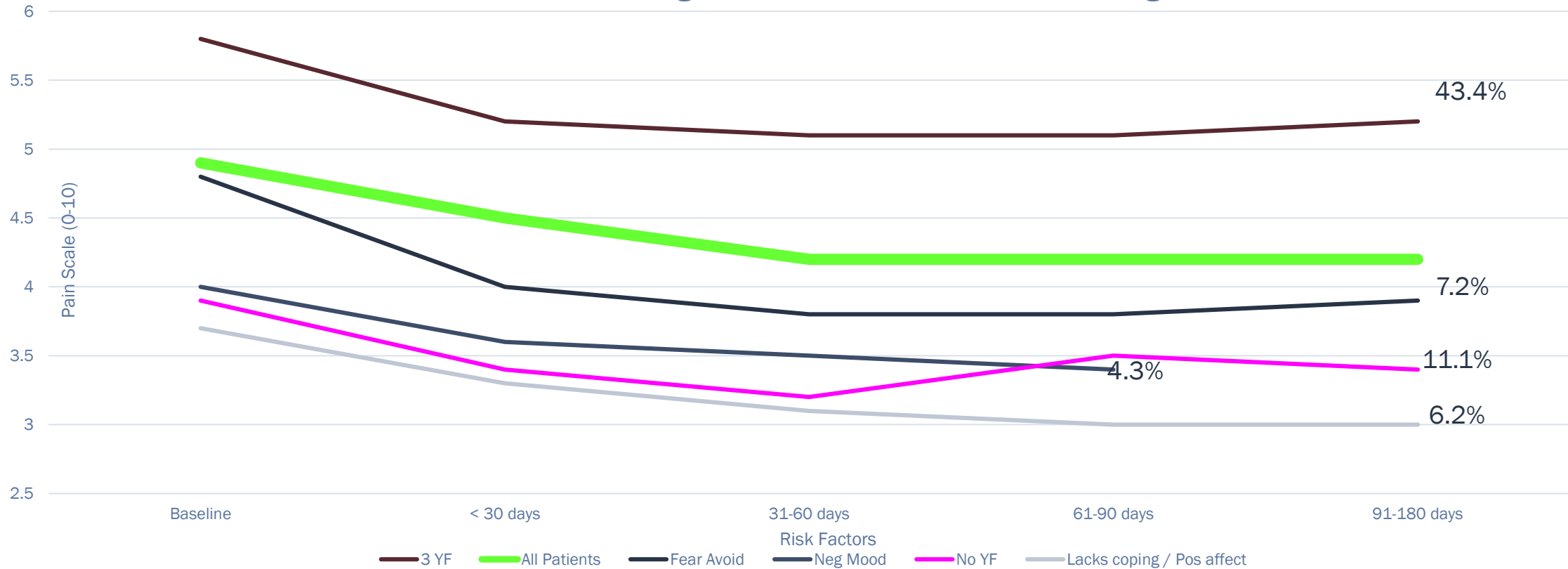
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# Patient Behavior

Impact of Biopsychosocial Factors / Yellow Flags (YF) on Baseline and Recovery from Musculoskeletal Pain using the Defense Veteran Pain Rating Scale



(MOTION, 2022)



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# Lesson #4: Improving Readiness

# Winning – Clinical Success and Returning Service Members to Duty

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- A Soldier failed out of SWCS due to a hip injury and was then assigned to another unit
- Began experiencing psychosocial concerns related to SWCS failure
- Sought initial care from the MTF for approx. six months with no improvement
- SM identified for possible IDES Enrollment
- SM enrolled in H2F; H2F team used the **MOTION / MSK triage tool**; participation in medical reconditioning; OT care; a physical & cognitive rehabilitation group; and started to receive BH support
- SM returned to duty as FMC & received recognition from a 3-star mission commander
- There is opportunity for DHA MTFs to use MOTION / MSK Triage to build better processes and stronger interdisciplinary teams working in synergy with unit-based teams

SWCS = Special Warfare Center and School

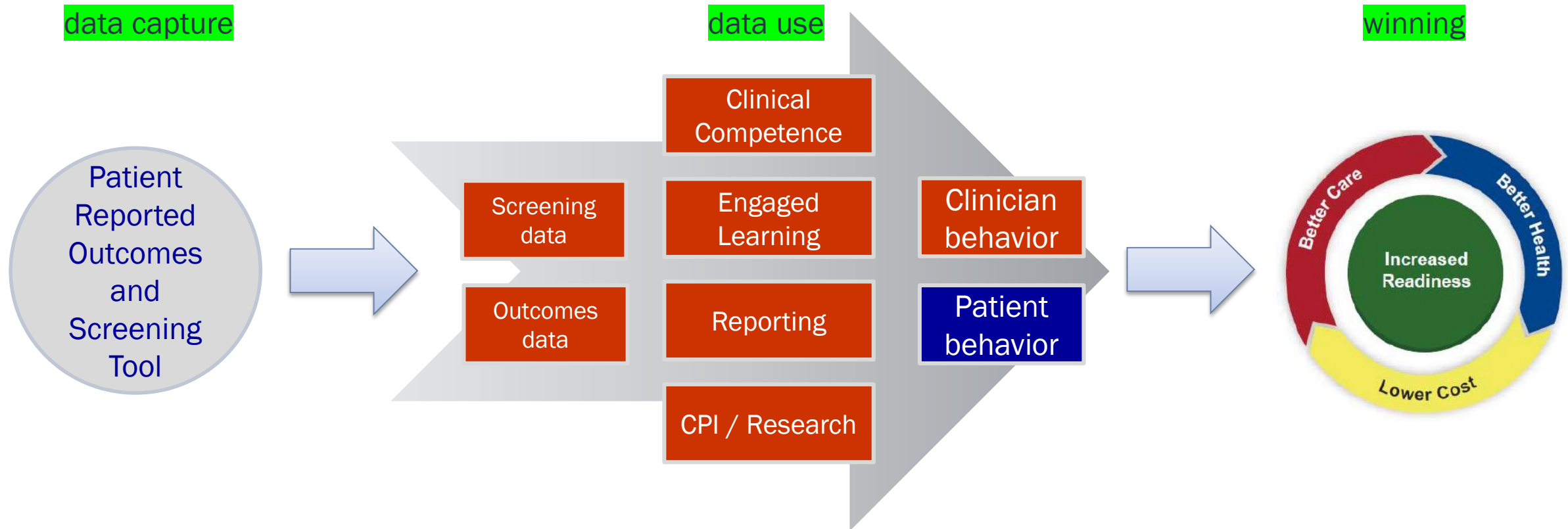
FMC = Fully Mission Capable



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# A Model for Data Driven Meaningful Improvement



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# Key Takeaways

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- Several clinical communities have embraced PROs
- Data collection is the first step
- Data use can drive meaningful improvement
- Existing enterprise capabilities such as CAMP, TBI Portal, and BHDP goes beyond outcomes collection to support relevant learning, patient engagement and clinical staff behavior change



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# How to Obtain CE/CME Credits

To receive CE/CME credit, you must register by 0800 ET on 28 October 2022 to qualify for the receipt of CE/CME credit or certificate of attendance. You must complete the program posttest and evaluation before collecting your certificate. The posttest and evaluation will be available through 27 November 2022 at 2359 ET. Please complete the following steps to obtain CE/CME credit:

1. Go to URL: <https://www.dhaj7-cepo.com/content/oct-2022-ccss>
2. Search for your course using the Catalog, Calendar, or Find a course search tool.
3. Click on the REGISTER/TAKE COURSE tab.
  - a. If you have previously used the CEPO CMS, click login.
  - b. If you have not previously used the CEPO CMS click register to create a new account.
4. Follow the onscreen prompts to complete the post-activity assessments:
  - a. Read the Accreditation Statement
  - b. Complete the Evaluation
  - c. Take the Posttest
5. After completing the posttest at 80% or above, your certificate will be available for print or download.
6. You can return to the site at any time in the future to print your certificate and transcripts at: <https://www.dhaj7-cepo.com/>
7. If you require further support, please contact us at: [dha.ncr.j7.mbx.cepo-cms-support@health.mil](mailto:dha.ncr.j7.mbx.cepo-cms-support@health.mil)





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# THANK YOU





# Backup Slides

# Enterprise Applications to enable PROs

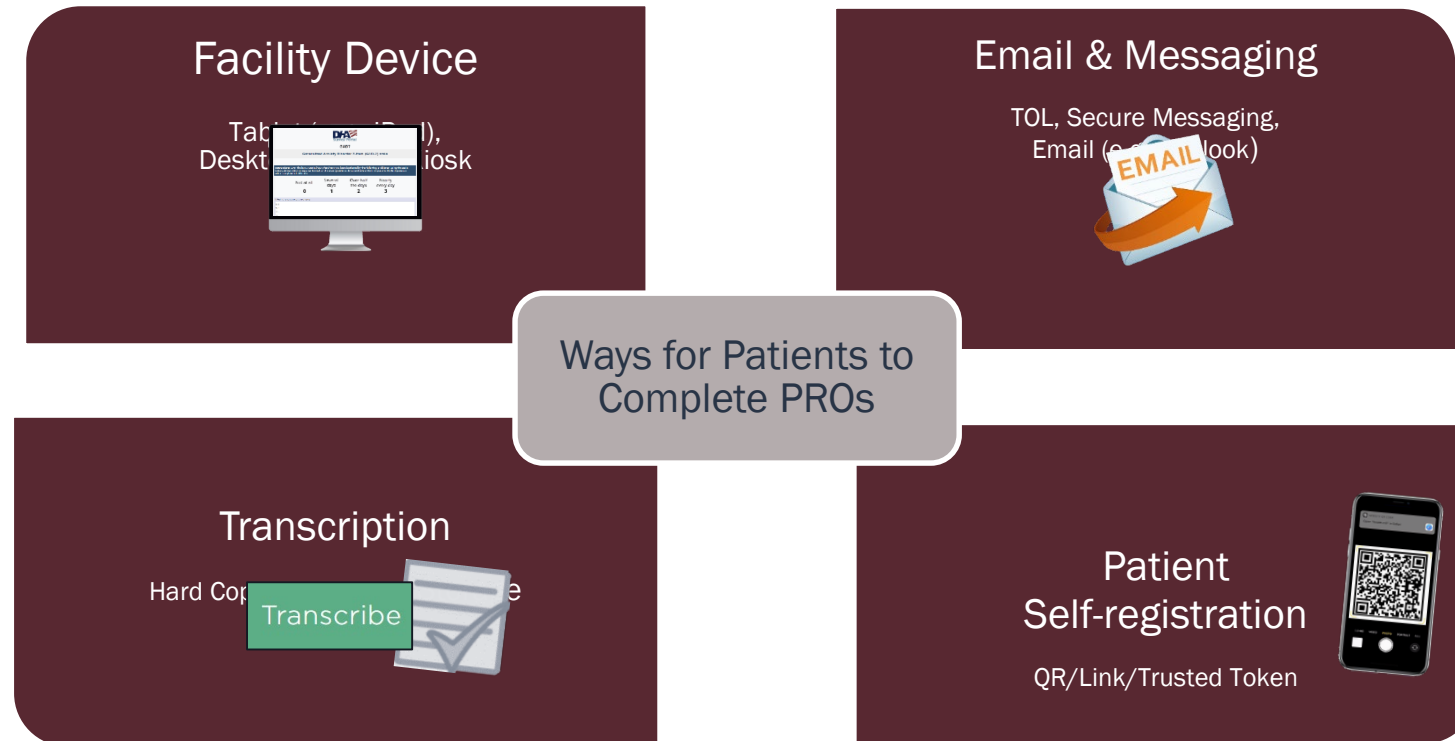
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# Patient Experience - Completing PROs



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# *Try It Yourself!* Patient Experience - Completing PROs



1

Scan QR code and register  
(test system, use test data)

**CAMP**  
Clinical Assessment Management Portal

**MANDATORY DOD NOTICE AND CONSENT BANNER**

You are accessing a U.S. Government (USG) Information System (IS) that is provided for USG-authorized use only.

By using this IS (which includes any device attached to this IS), you consent to the following conditions:

- The USG routinely intercepts and monitors communications on this IS for purposes including, but not limited to, penetration testing, COMSEC monitoring, network operations and defense, personnel misconduct (PM), law enforcement (LE), and counterintelligence (CI) investigations.
- At any time, the USG may inspect and seize data stored on this IS.
- Communications using, or data stored on, this IS are not private, are subject to routine monitoring, interception, and search, and may be disclosed or used for any USG-authorized purpose.
- This IS includes security measures (e.g., authentication and access controls) to protect USG interests-not for your personal benefit or privacy.
- Notwithstanding the above, using this IS does not constitute consent to PM, LE or CI investigative searching or monitoring of the content of privileged communications, or work product, related to personal representation or services by attorneys, psychotherapists, or clergy, and their assistants. Such communications and work product are private and confidential. See User Agreement for details.

☒ Accept DoD Notice

Please enter the following information to register or click [here](#) to scan your CAC.

First Name \*

Last Name \*

Primary Email Address \*

Secondary Email Address

Primary Phone Number \*

DoD ID Number (EDIPN) \*

Date of Birth \*

**Register**

\* EDIPN must be 10-digits long

2

Review list of PRO-M to complete

**Patient Reported Outcomes**

Please complete the following:

|                                      |       |               |
|--------------------------------------|-------|---------------|
| PHQ8                                 | Today | <b>Select</b> |
| GAD7                                 | Today | <b>Select</b> |
| PROMIS Bank v1.1 - Pain Interference | Today | <b>Select</b> |

3

Complete and submit

**Patient Health Questionnaire (PHQ-8)**

Instructions: Over the last 2 weeks, how often have you been bothered by any of the following problems? Use the following scale to choose the most appropriate answer for each situation.

|   | Not at all<br>1       | Several days<br>2                | More than half the days<br>3 | Nearly every day<br>4 |
|---|-----------------------|----------------------------------|------------------------------|-----------------------|
| 1. Little interest or pleasure in doing things  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 2. Feeling down, depressed, or hopeless   | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 3. Trouble falling or staying asleep, or sleeping too much  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 4. Feeling tired or having little energy  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 5. Poor appetite or overeating  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 6. Feeling bad about yourself or that you are a failure or have let yourself or your family down  | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 7. Trouble concentrating on things, such as reading the newspaper or watching television.   | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |
| 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. | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/>        | <input type="radio"/> |

**Level of Difficulty**

9. If you checked off any problem, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

|                      |                       |  |   |  |
|----------------------|-----------------------|--|---|--|
| Not at All Difficult | <input type="radio"/> | <input checked="" type="radio"/> <b>Somewhat Difficult</b> | <input type="radio"/> <b>Very Difficult</b> | <input type="radio"/> <b>Extremely Difficult</b> |
|----------------------|-----------------------|--|---|--|

**Submit**

**Cancel**

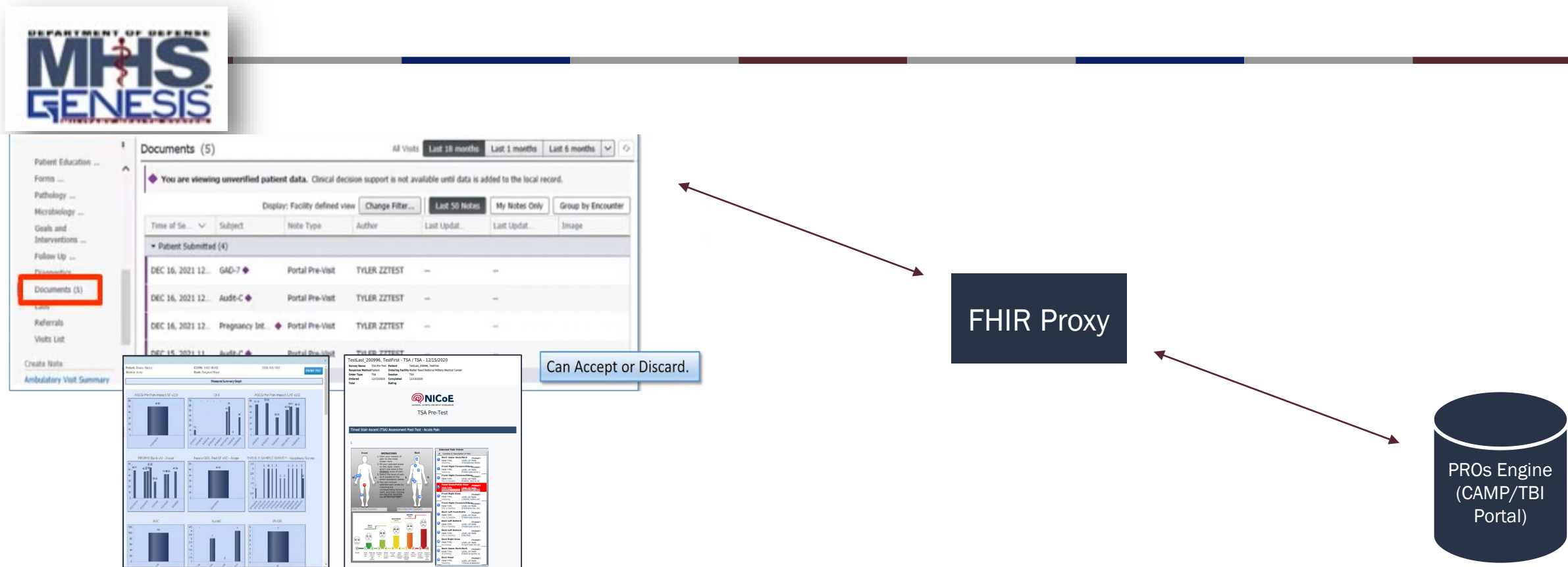


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# Integration of Enterprise Applications with GENESIS



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