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

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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.

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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.

Disclosures

- 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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- Commercial support was not received for this activity.

Learning Objectives

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

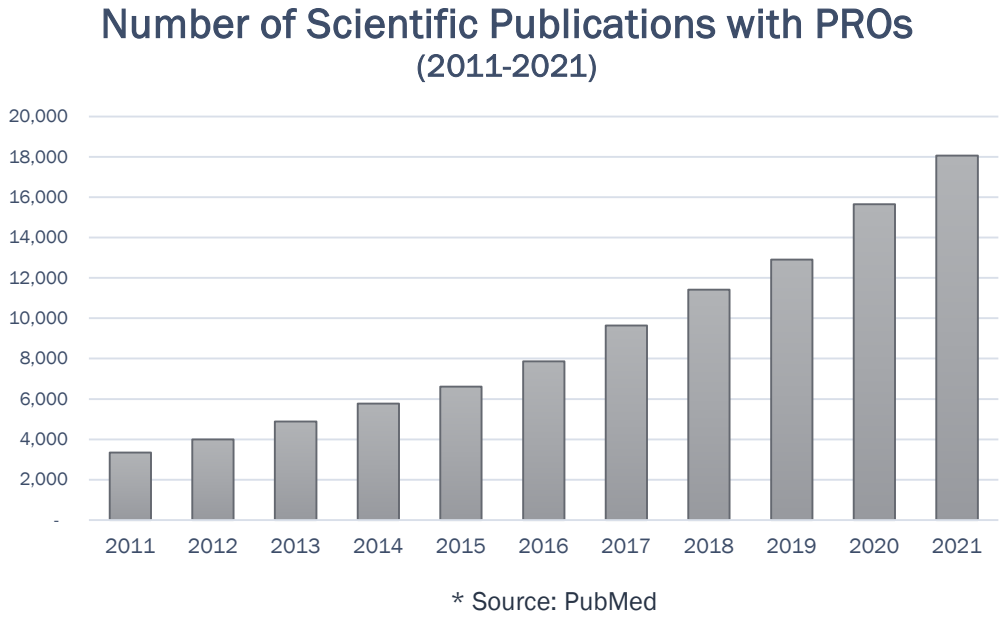
- Introduction to PROs
- Overview of PROs across Clinical Communities
  - ✓ Behavioral Health Community
  - ✓ Amputation Centers
  - ✓ Surgical Services Community
  - ✓ TBI Community
  - ✓ Pain Community
  - ✓ Musculoskeletal Community
- PRO Adoption
- MOTION/MSK Triage Lessons Learned*
- Conclusion

*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



* Source: PubMed

Terminology

PRO
Patient Reported Outcomes

What gets measured. Information on the patients told by the patients (i.e., symptoms, quality of life, etc..)

Example: Depression

PROM
Patient Reported Outcomes Measures

How PROs are measured. Way to collect information. The tools/instruments used to collect data (e.g., PROMIS, HOS, FOTO, NSI, etc...)

Example: PHQ-2

PRO-PM
Patient-reported outcomes-based Performance Measures

How PROs are calculated. A ways to aggregate the information for consumption. Aggreged PROs collected through PROMs.

Example: Total score and percentage of patients with MDD.

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.)

Factors to Affect Patients

- Disease-related (symptoms)
- Deployments
- PCS
- Readiness Trainings
- Treatment-related (toxicity, dosage)
- Socio-demographics (age, race, education, etc…)
- Psychological (attitudes, moods, cooperation, etc…)
- Access to care
- Finances
- Etc…

Key outcomes PROs can affect

- Return to duty
- Patient Satisfaction
- Enhanced patient-provider communication
- Improved Health-related quality of life
- Survival
- Compliance
- Early Detection of conditions

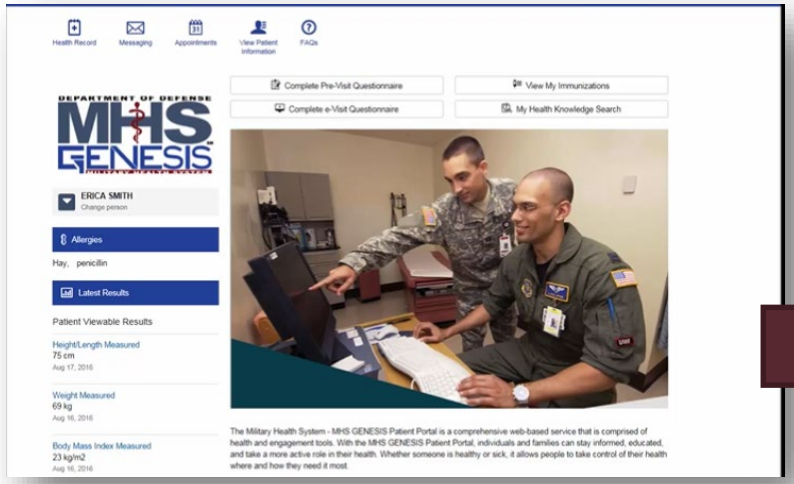
Framework for PROs utility in Clinical Care

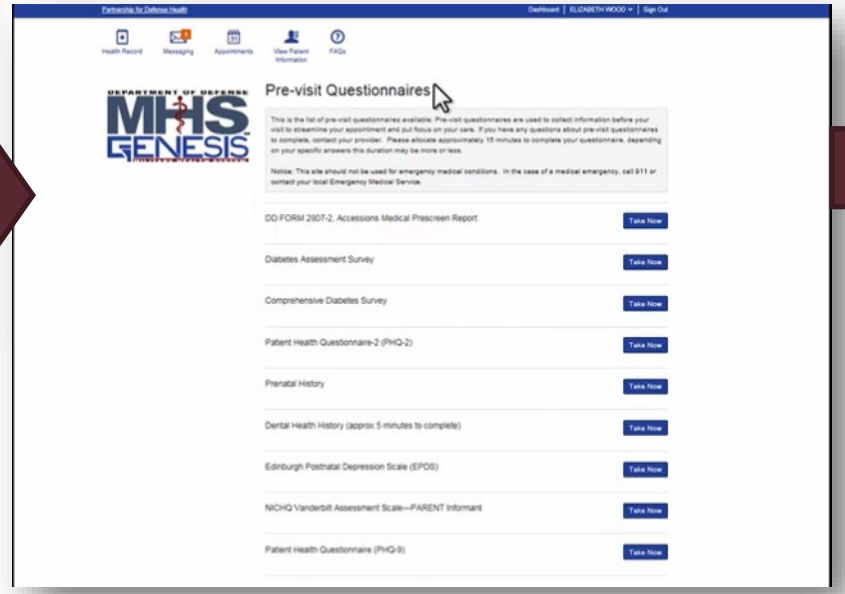
PROs across the Military Health System

- 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…

(MHS, n.d.)

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

- Specialty services have many <u>unique</u> requirements
  1. Adaptive questionnaires (e.g. PROMIS, TBI-QOL, etc…)
  2. Integration of Video and Images (e.g. refractive surgery)
  3. Advanced Skip and Branching logic for questions and questionnaires (e.g. trigger additional questionnaire based on results from current answers)
  4. Time-dependent questionnaires (e.g. measure time to complete, time to walk, etc…)
  5. Input method (e.g. mobile, kiosk, web, patient portal, transcribe, etc…)
  6. Flag patients and questionnaires based on responses (e.g. high-risk patients)
  7. Patient and family (e.g. patient and spouse completing questionnaire about sleep)
  8. Automatic follow-up not liked to appointment
  9. Summary patient report for clinical staff
  10. Compliance monitoring and tracking
  11. Order based on medical history and diagnosis (e.g. based on ICD or CPT codes)
  12. Etc…

(NICOE, n.d.)

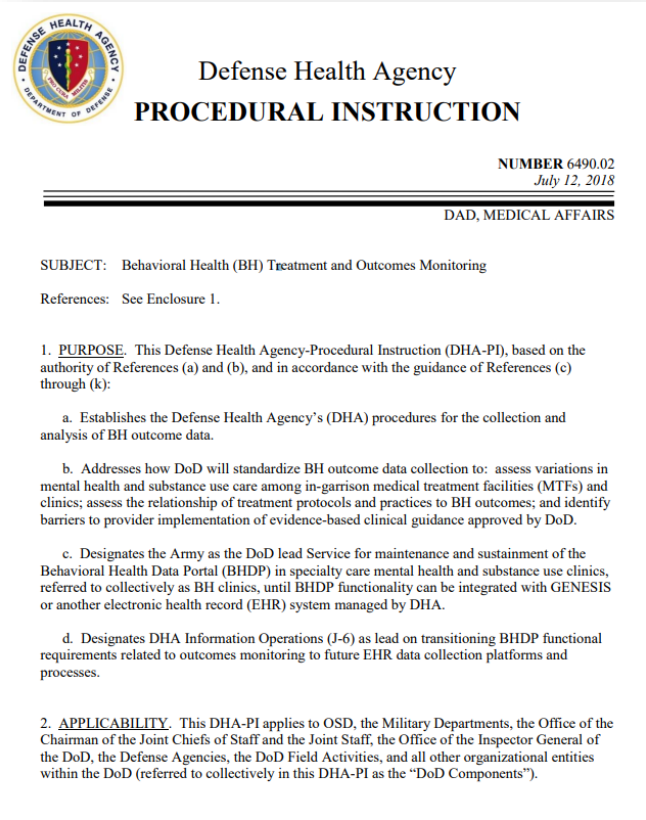
Behavioral Health Clinical Community (BHDP)

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



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.

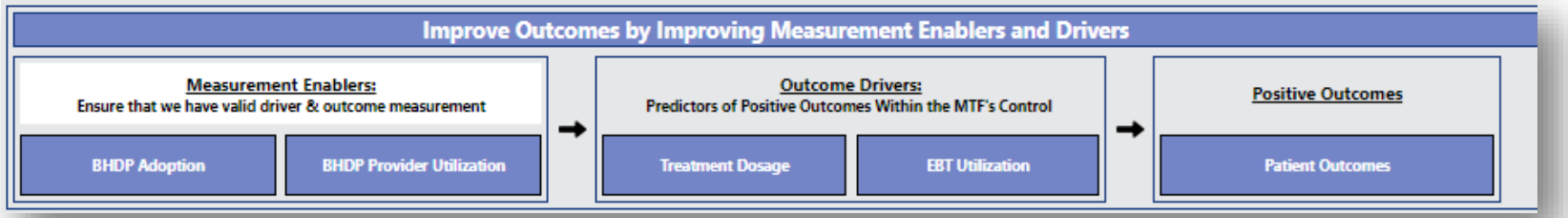
d. Designates DHA Information Operations (J-6) as lead on transitioning BHDP functional requirements related to outcomes monitoring to future EHR data collection platforms and processes.

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").

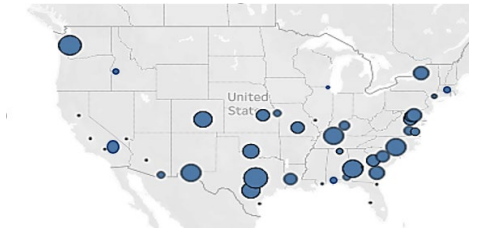
(DHA, 2018)

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).

Improving Behavioral Health Outcomes

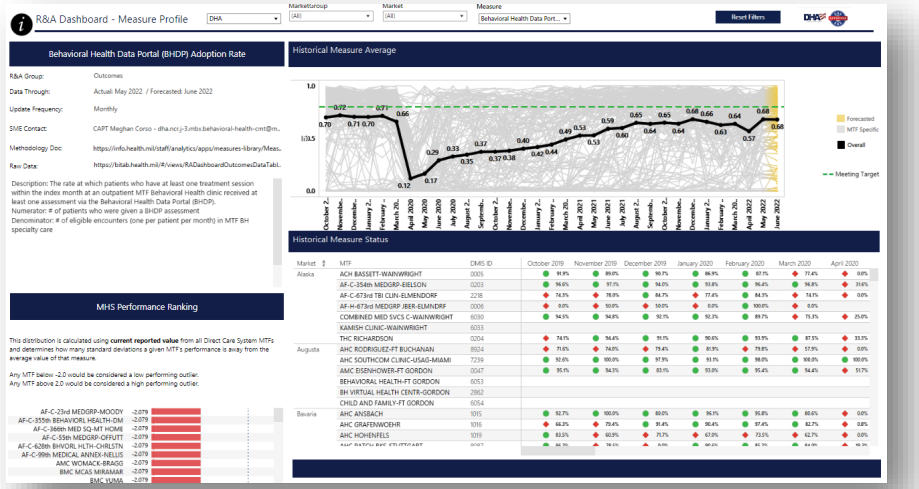


Behavioral Health Clinical Community (BHDP)



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

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.

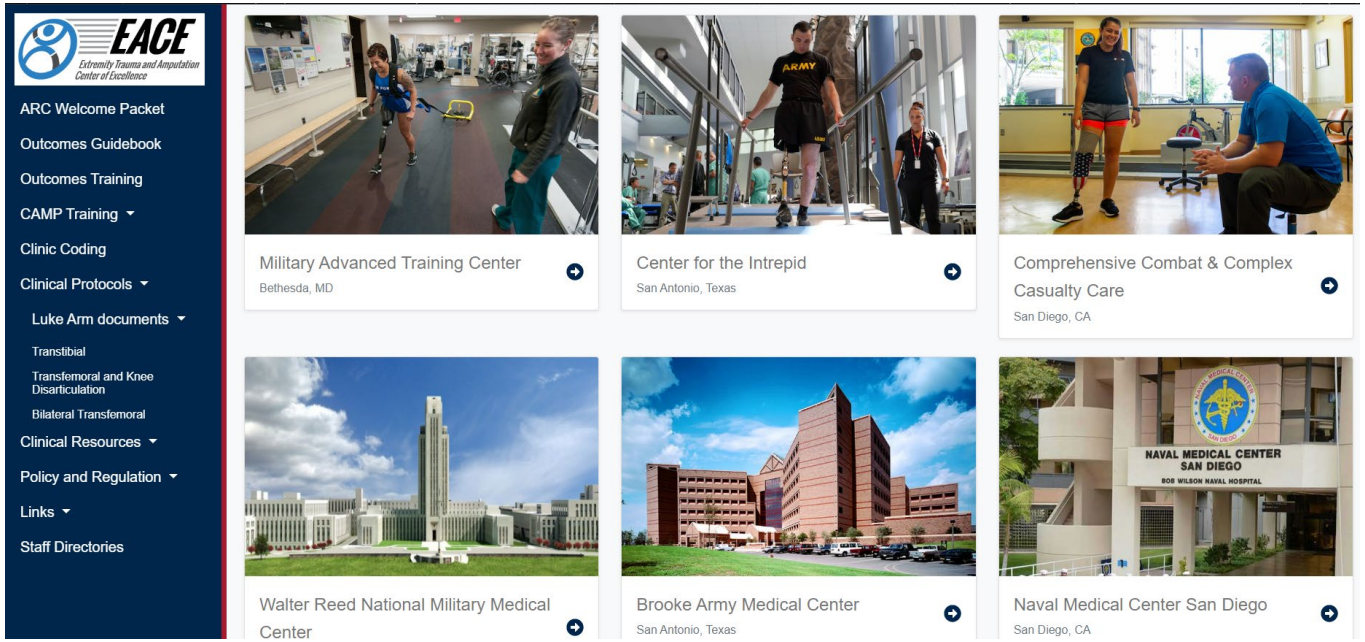
1. Are you able to walk a short distance in your home? — Without any difficulty
2. Are you able to step up and down curbs? — With a little difficulty
3. Are you able to walk across a parking lot? — With some difficulty
4. Are you able to walk over gravel surfaces? — With much difficulty
5. Are you able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

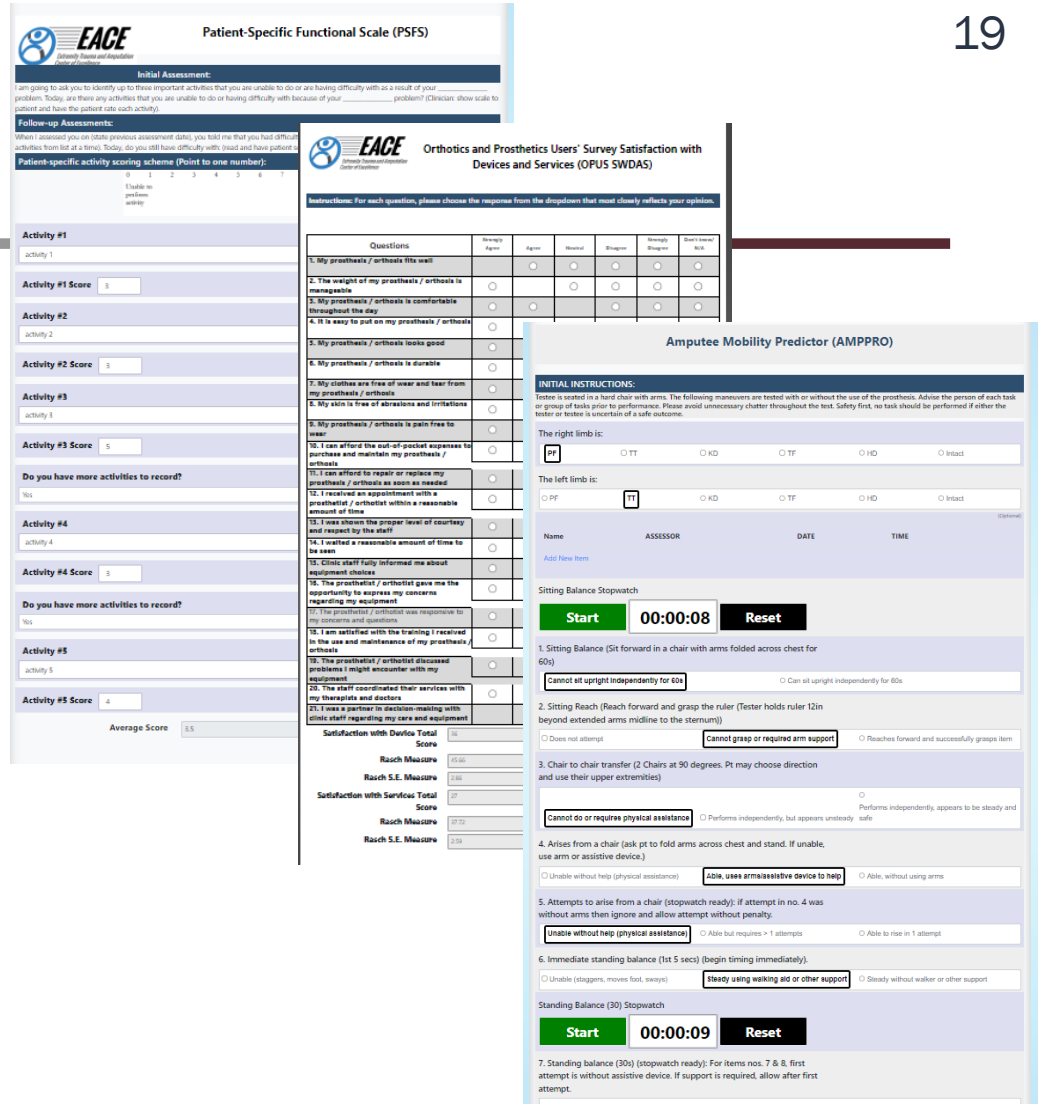
Raw Score
T-Score

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





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

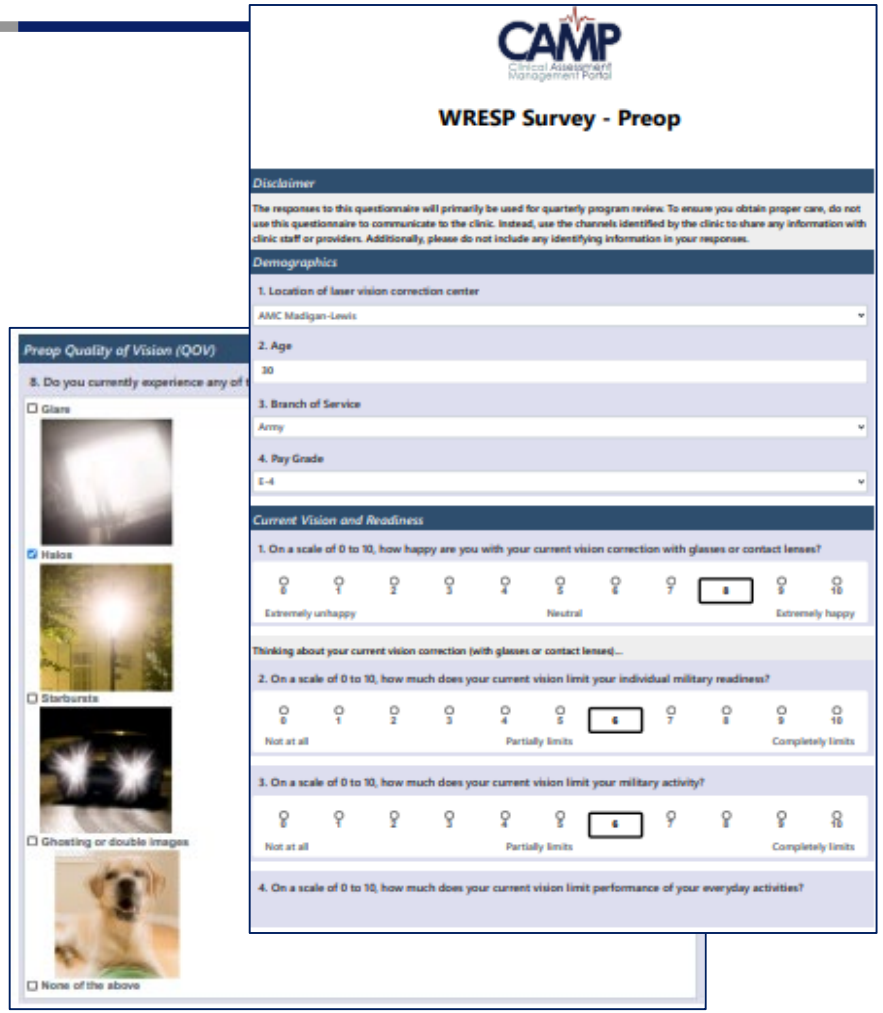
Refractive Surgery

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.

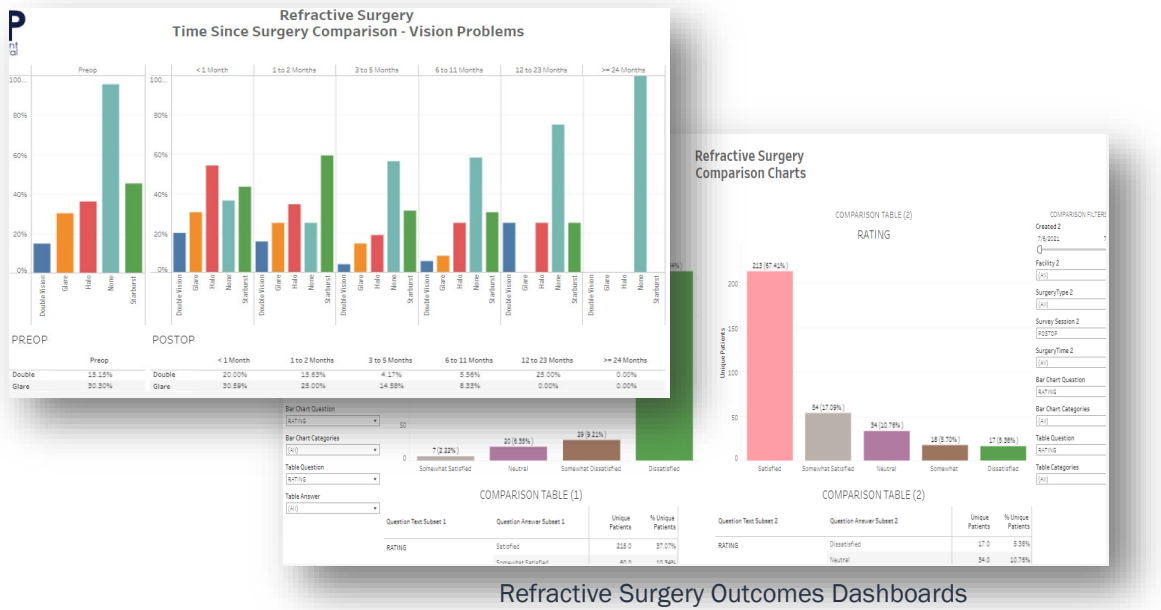


(tricare.mil, n.d.)

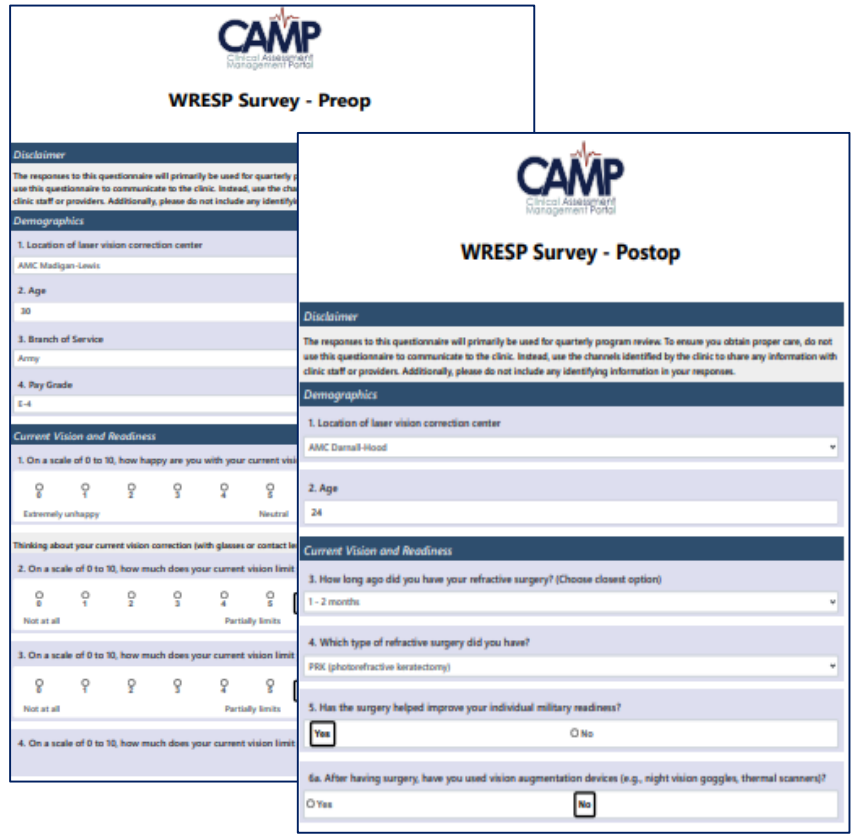
Surgical Services Clinical Community – Refractive Surgery

- **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 Outcomes Dashboards



TBI Community

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

POC: Dr. Carrie Storer and Dr. Jesus Caban

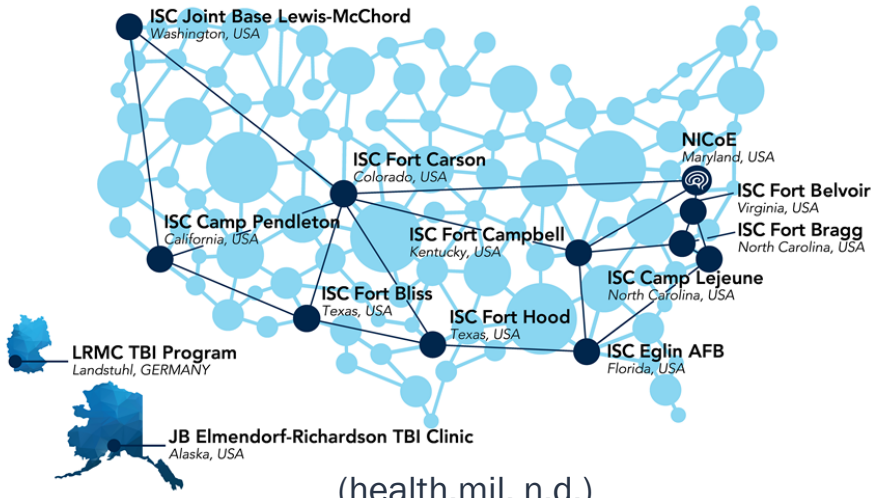
TBI Community & Intrepid Network

- 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



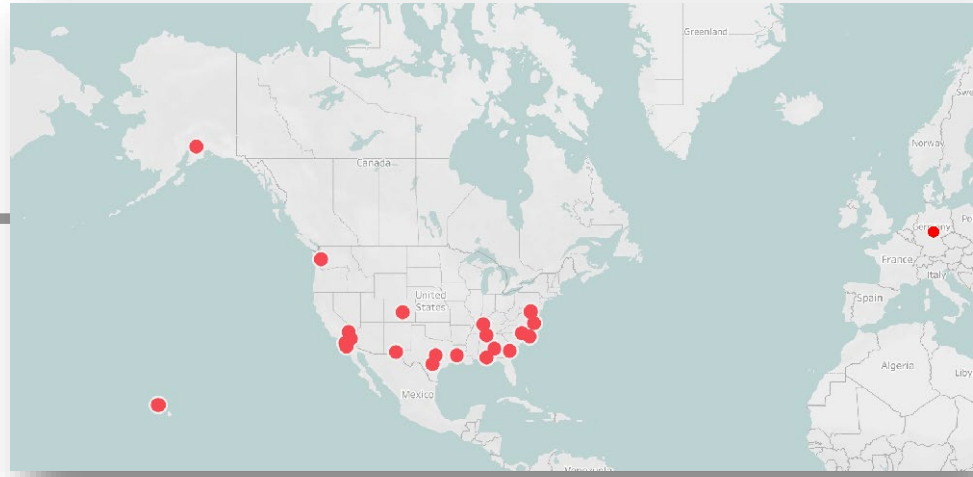
(health.mil, n.d.)

TBI Community

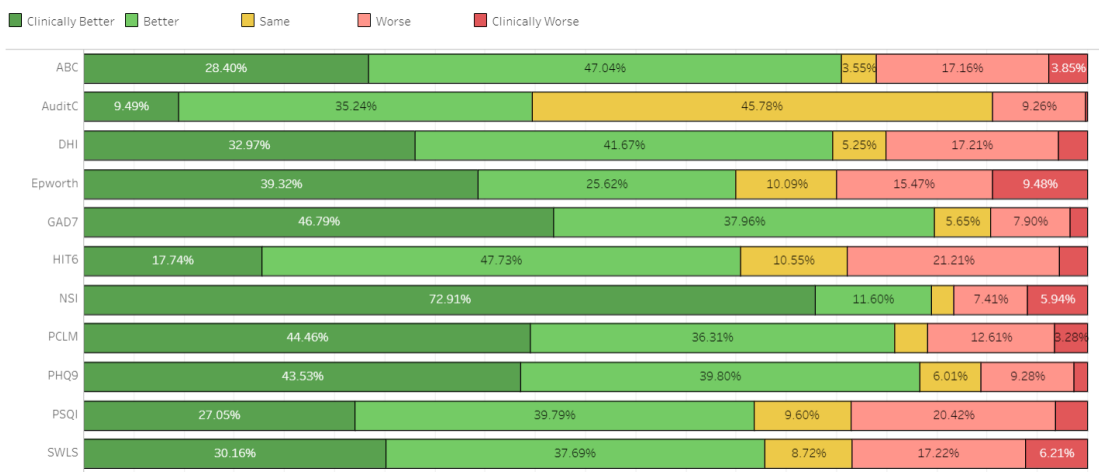
- To screen and evaluate different clinical domains, multiple PROs are dynamically used including (but not limited to):

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



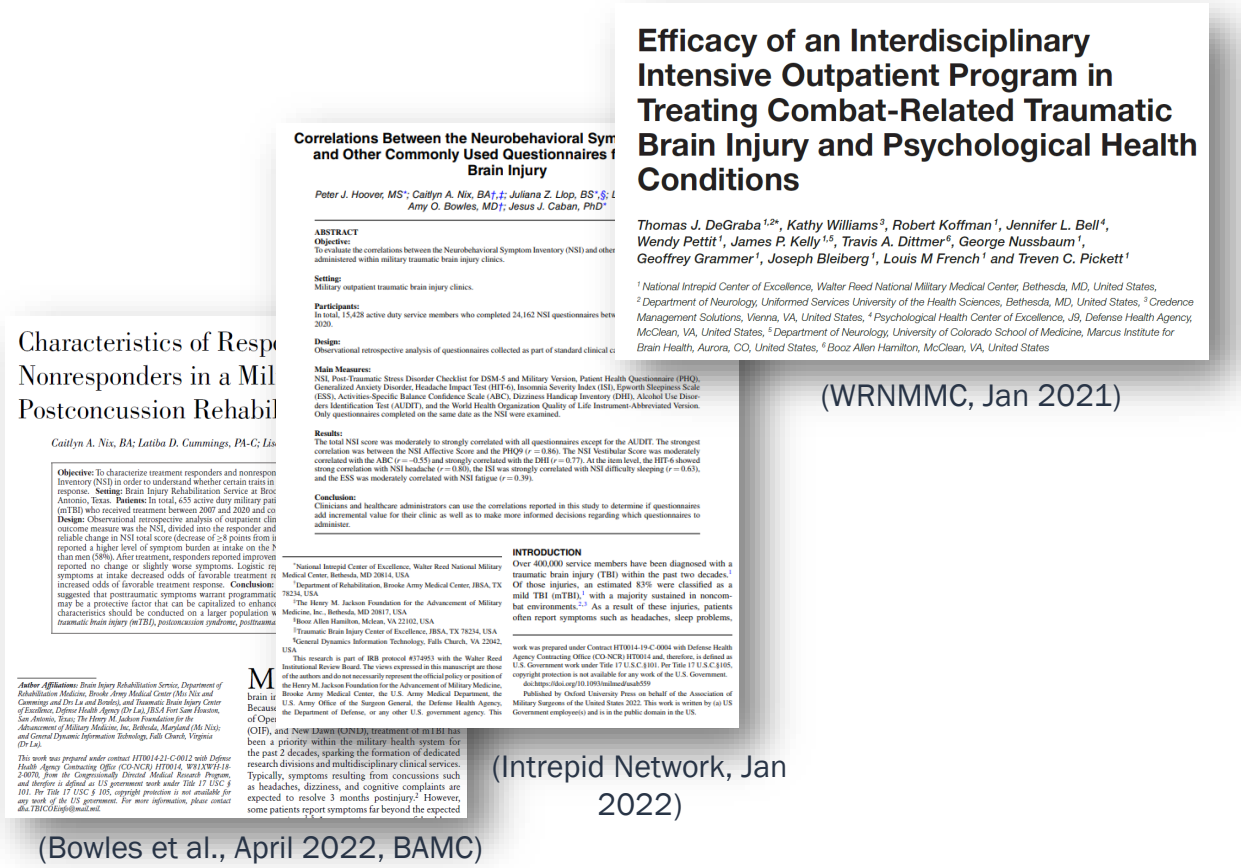
TBI Clinics and Centers that have adopted PROs



TBI Dashboards include Outcomes report

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[1,2], Kathy Williams[3], Robert Koffman[1], Jennifer L. Bell[4], Wendy Pettit[1], James P. Kelly[1,5], Travis A. Dittmer[6], George Nussbaum[1], Geoffrey Grammer[1], Joseph Bleiberg[1], Louis M French[1] and Treven C. Pickett[1]*

[1] National Intrepid Center of Excellence, Walter Reed National Military Medical Center, Bethesda, MD, United States, [2] Department of Neurology, Uniformed Services University of the Health Sciences, Bethesda, MD, United States, [3] Credence Management Solutions, Vienna, VA, United States, [4] Psychological Health Center of Excellence, J9, Defense Health Agency, McClean, VA, United States, [5] Department of Neurology, University of Colorado School of Medicine, Marcus Institute for Brain Health, Aurora, CO, United States, [6] Booz Allen Hamilton, McClean, VA, United States

(WRNMMC, Jan 2021)

Correlations Between the Neurobehavioral Sym and Other Commonly Used Questionnaires f Brain Injury

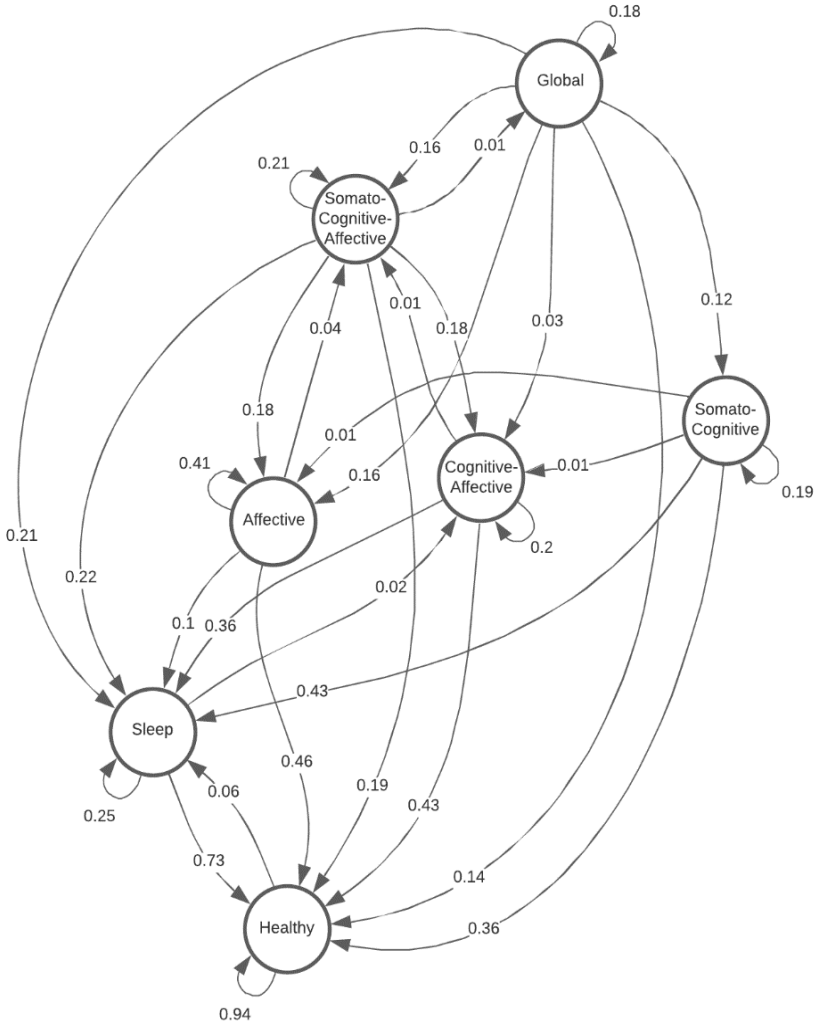
Peter J. Hoover, MS*; Caitlyn A. Nix, BA†,‡; Juliana Z. Llop, BS*,§; Amy O. Bowles, MD†; Jesus J. Caban, PhD*

(Intrepid Network, Jan 2022)

Characteristics of Respo Nonresponders in a Mil Postconcussion Rehabil

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

(Bowles et al., April 2022, BAMC)



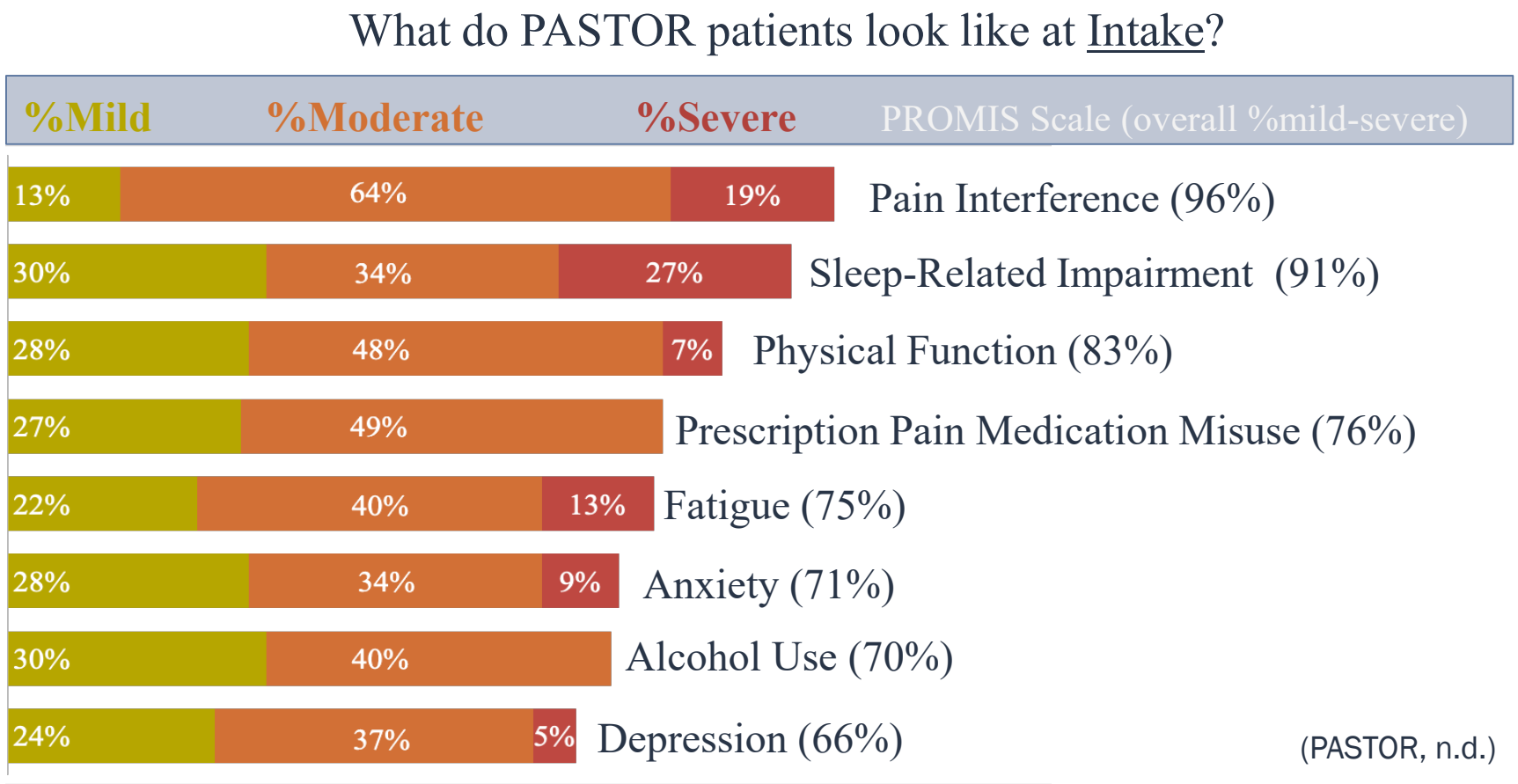
What's next? Outcomes analysis based on phenotypes

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



(PASTOR, n.d.)

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.)

Pain Management Outcomes

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

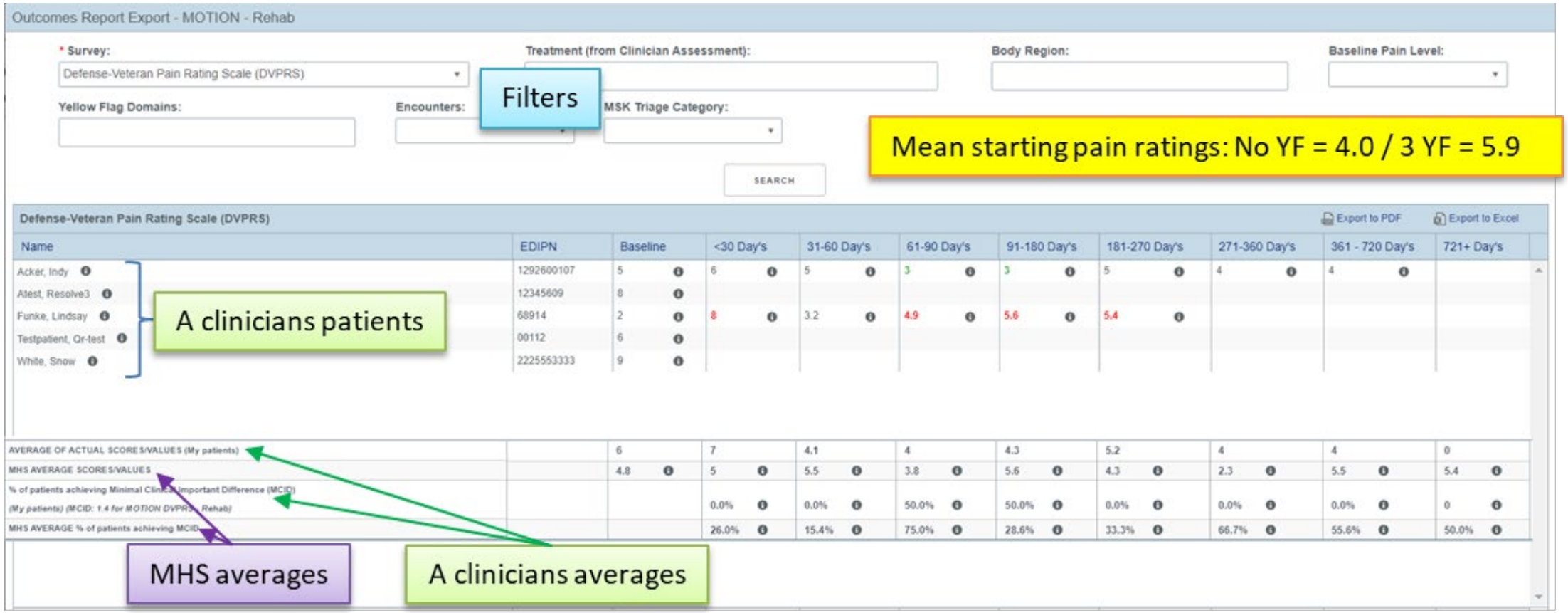
Musculoskeletal Community (MOTION)

POC: Dr. Carrie Storer and COL Lee

Musculoskeletal Community

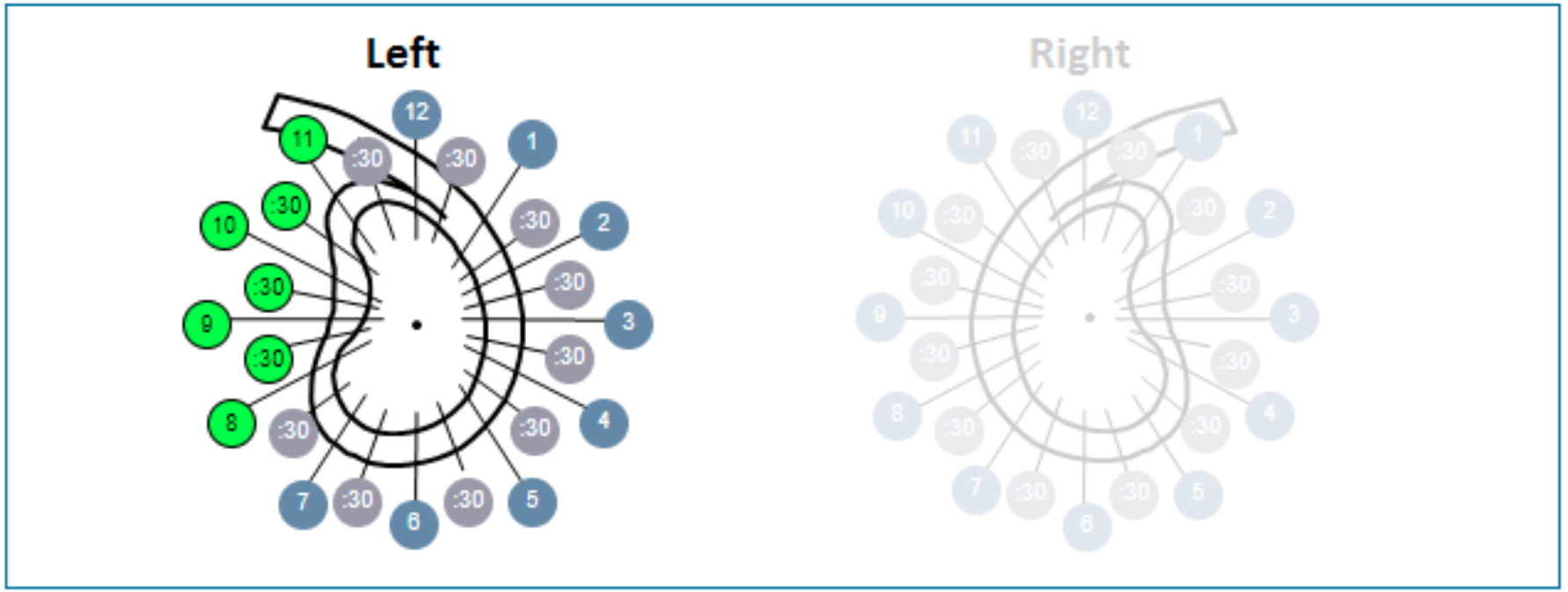
- Small Market and Standalone MTF Organization (SSO) and several large markets choosing MOTION/MSK Triage
- Focus on information tools designed to improve therapeutic alliance and align practice behavior with most effective care
- Ortho intra-ops

Outcomes Report



NOTE: Names and data on this slide are fictional

Precision Documentation in Intraops



(MOTION, n.d.)

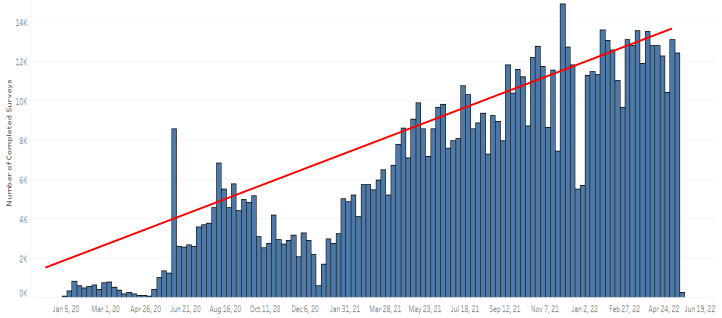
Adoption of PROs across the MHS

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

Jan 2020 – Jun 2022



Effect of COVID-19 in adoption of PROs

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% ↑

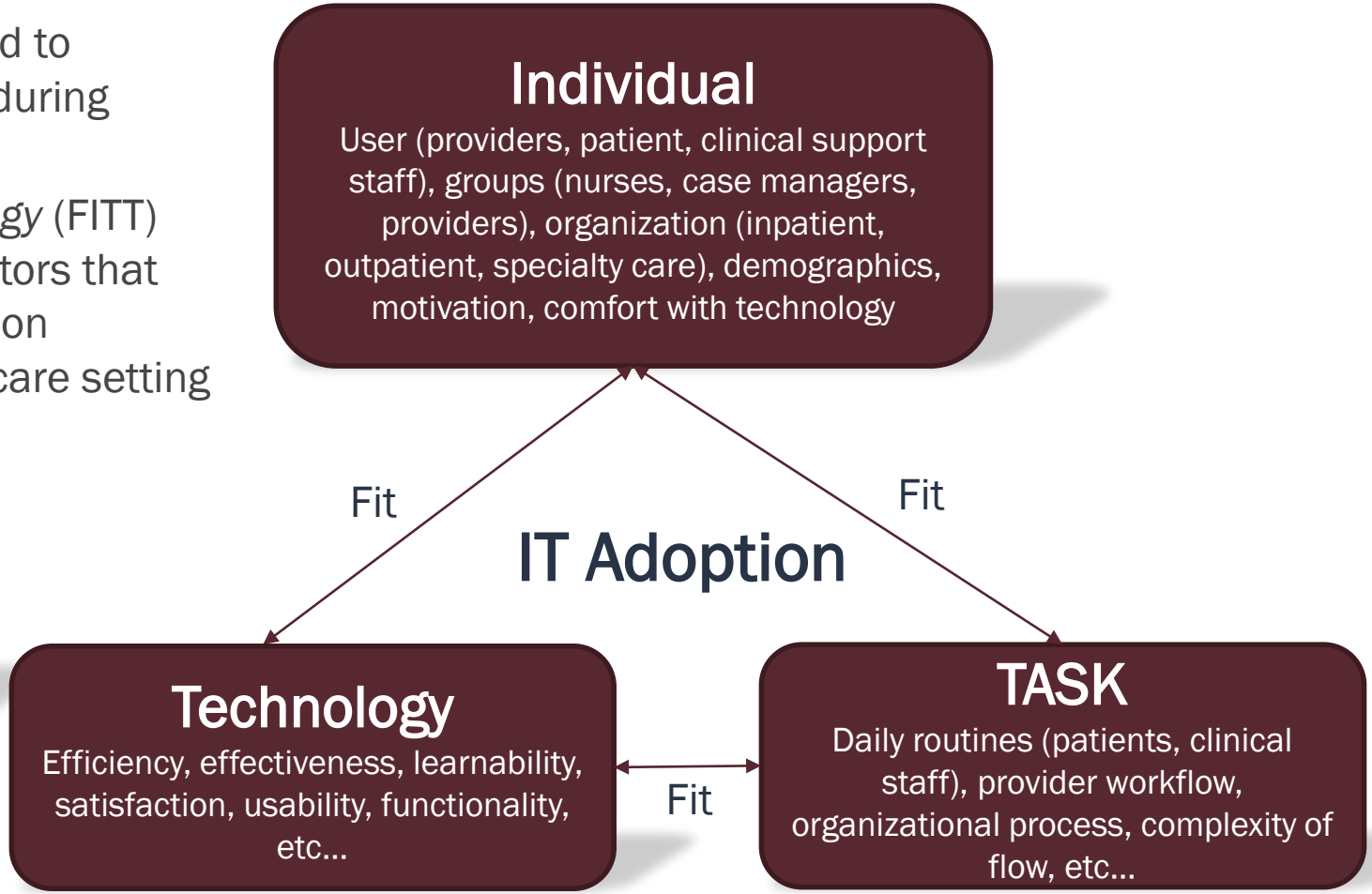
5) **Surgical Services CC / Refractive Surgery:** N/A (New community, thus no YoY data)

(DHA, 2022)

FITT Framework for IT Adoption

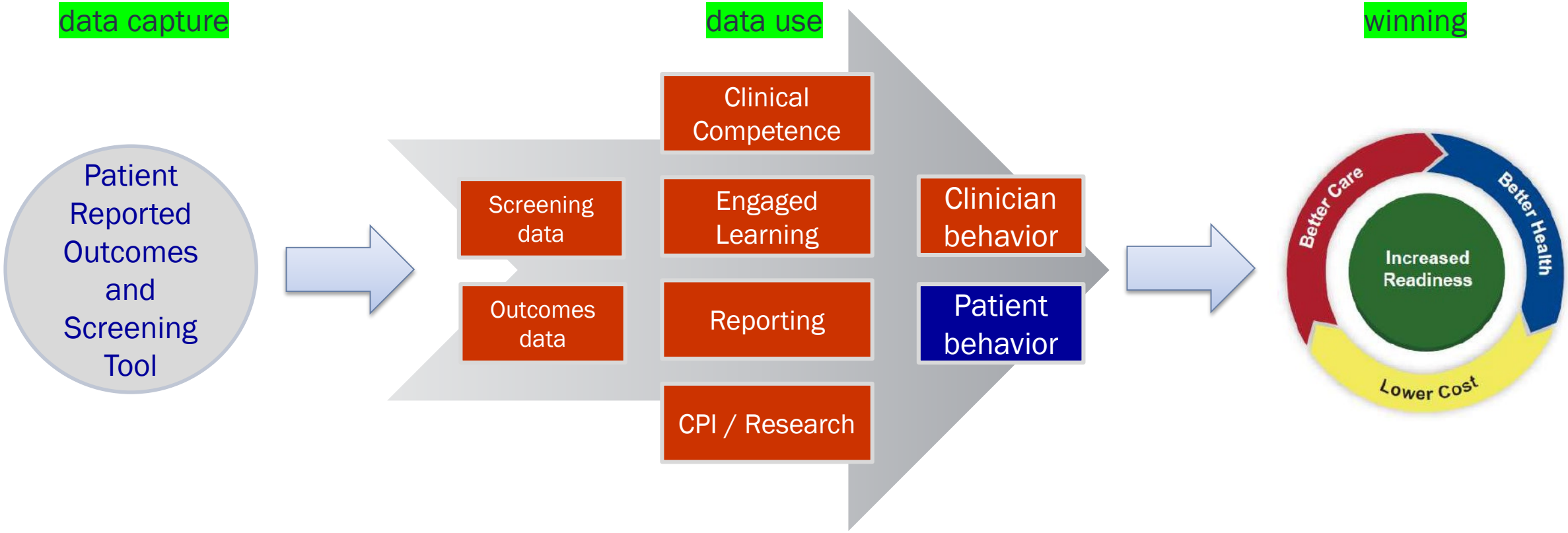
- Several implementation models can be used to analyze barriers and facilitators that occur during implementation.
- *Fit between Individuals, Task, and Technology* (FITT) framework developed helps analyze the factors that influence the success or failure of information technology (IT) implementation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



Lesson #1:
Data Capture

Data Capture (QR Auto-Registration)

Survey Order: **General**

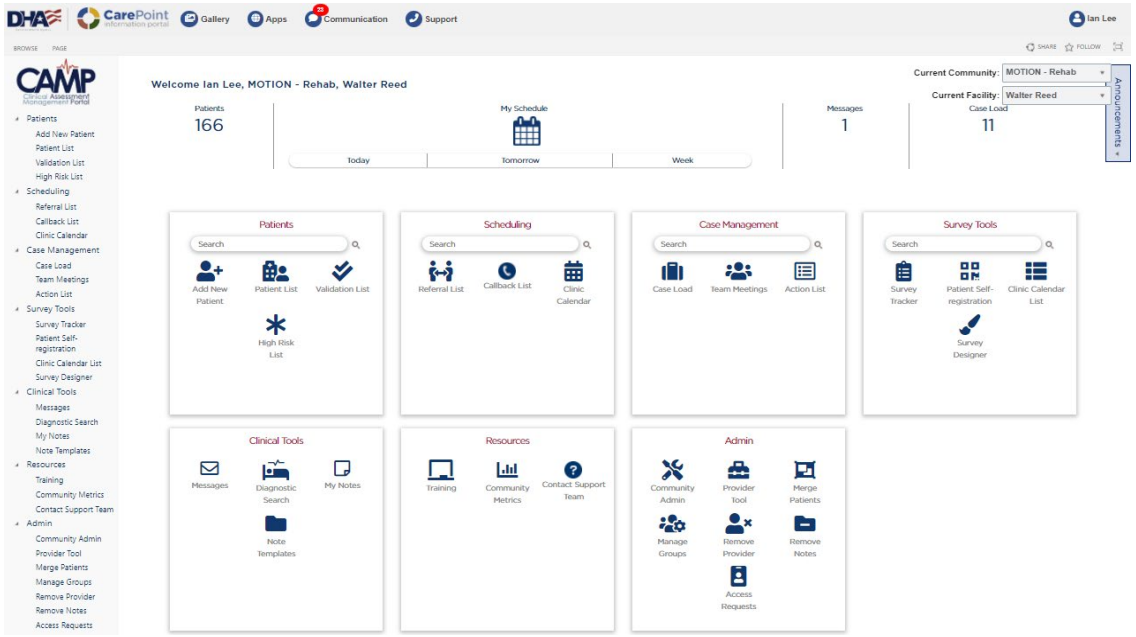
Session Name: **Baseline**

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.**



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

(DHA, n.d.)

Data Capture – Incentivizing (proposed)

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

Lesson #2: Data Use

Data Use – Screening

CPGs for Optimized Work Participation After Injury or Illness

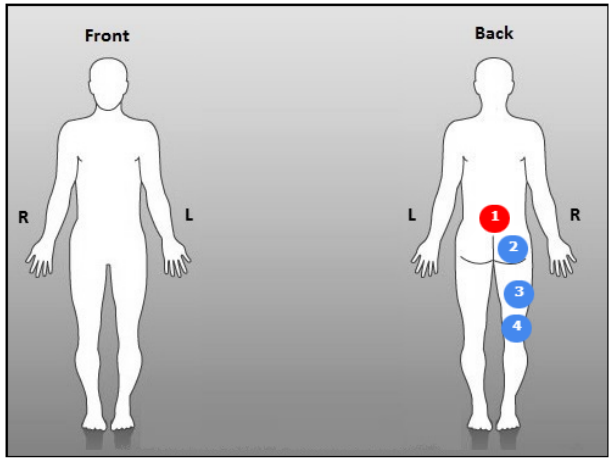
RISK FACTORS – CLIENT PRESENTATION

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.

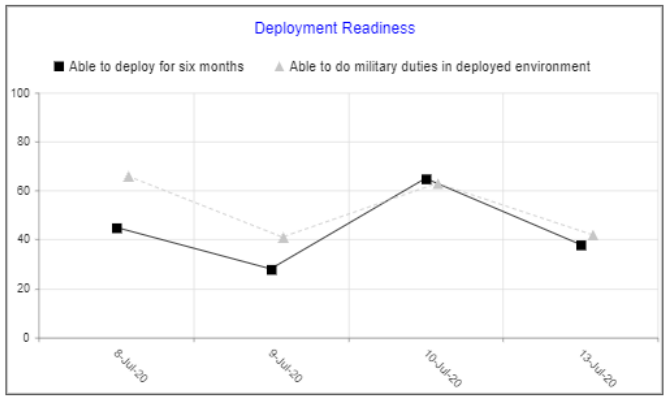
A Physical therapy providers should treat workers with estimated high risk of delayed RTW with a combination of clinic-based work-focused interventions and jobsite interventions to improve work status.

MOTION - Rehab Provider Report

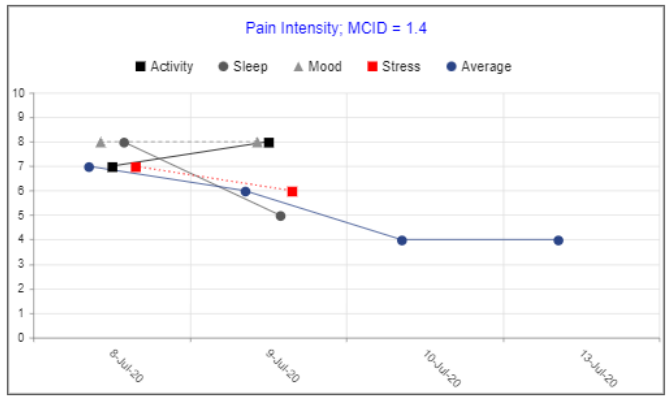
!	Impaired deployment readiness	07/13/2020	Patient reports impaired readiness
	Severe pain score	07/13/2020	Negative Screen
	Major change in health	07/10/2020	Negative Screen
!	Negative mood	07/13/2020	Patient responses indicate negative mood present
!	Positive affect/coping	07/13/2020	Patient responses 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

Data Use - Outcomes

Deployment Readiness

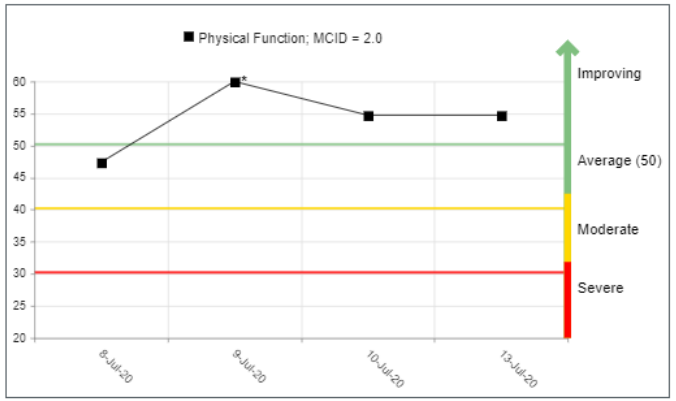


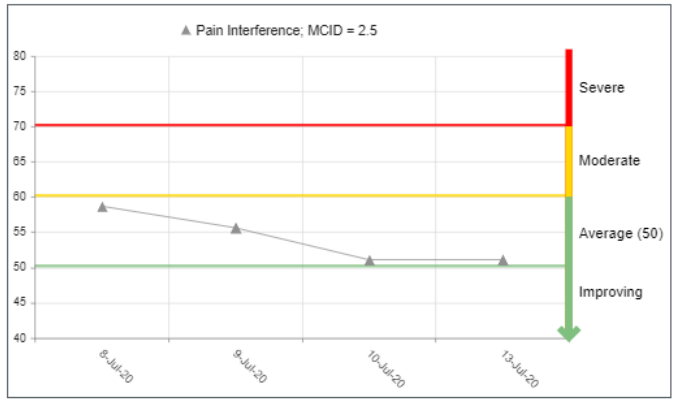
Defense & Veterans Pain Rating Scale (DVPRS)



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)

Data Use - Clinical Competence

- Traditional
  - Training
  - Evidence based practice (literature, experience, patient values)
  - **Qual**itative feedback, not aggregated, without comparison

- Data use opportunity
  - **Quant**itative feedback learning loop, individual and aggregated w/ comparison
  - Every patient a learning opportunity; hypothesis, confirmation, adjust cycle
  - Mentorship tool

Data Use – Musculoskeletal Triage

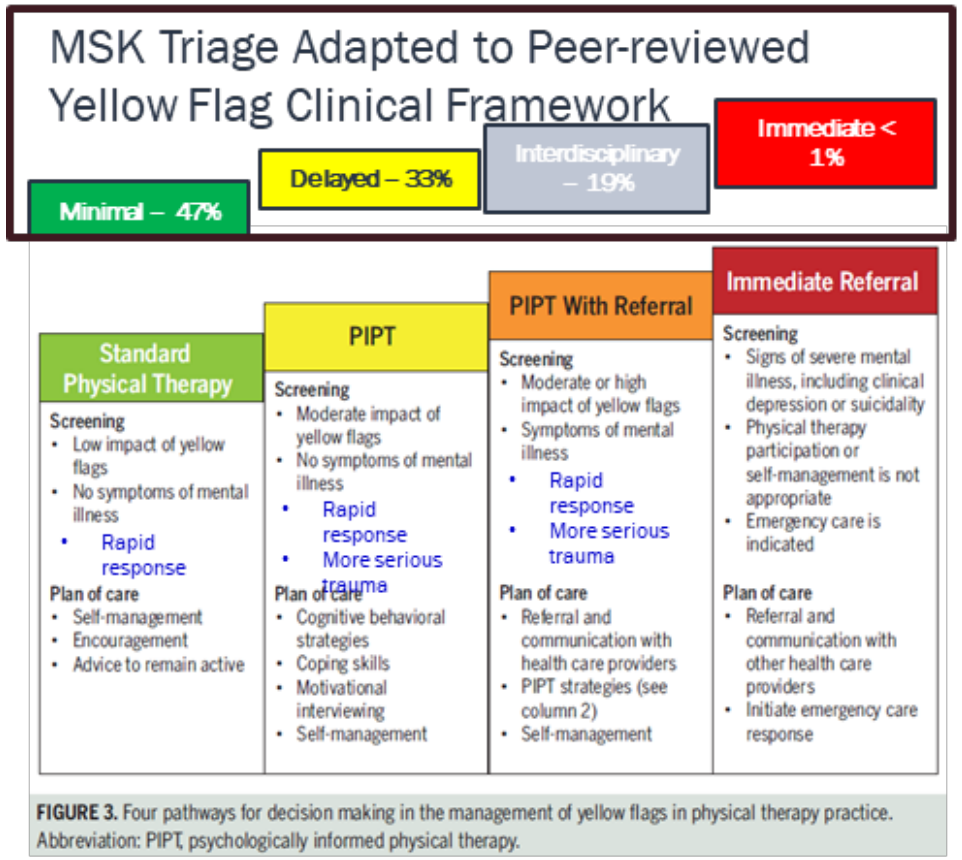


FIGURE 3. Four pathways for decision making in the management of yellow flags in physical therapy practice. Abbreviation: PIPT, psychologically informed physical therapy.

Stearns et al, 2021

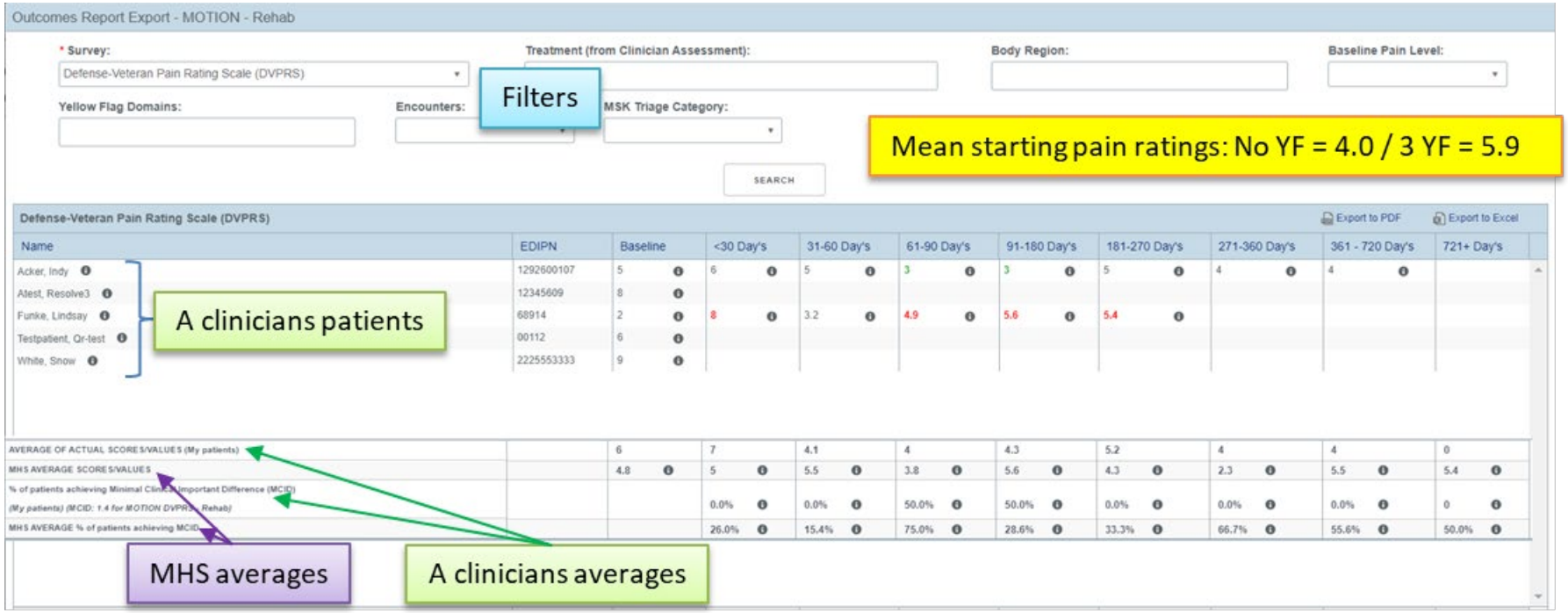
Minimal – The clinician predicts their patient will return to duty / life within 90 days of 1st visit with "standard," evidence-based rehab care. SM has a well-established readiness issue that is expected to resolve promptly.

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

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.)

Data Use – Reporting - Adoption

Table | **Graph**

Year	Month	Facility Name	MEPRS3	MEPRS4	Specialty
(All)	(All)	(All)	(All)	(All)	(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 LYSTE..																13.98%

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.)

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

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.

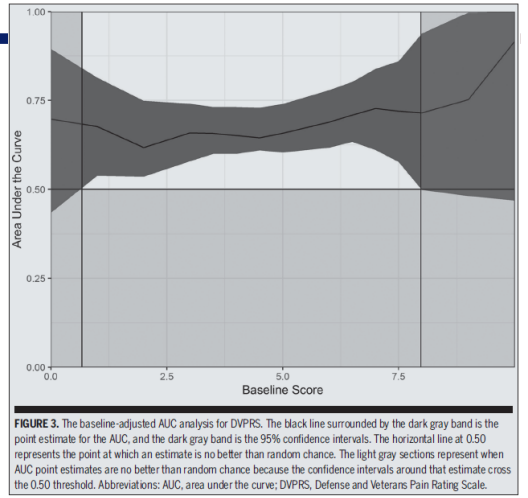


FIGURE 3. The baseline-adjusted AUC analysis for DVPRS. The black line surrounded by the dark gray band is the point estimate for the AUC, and the dark gray band is the 95% confidence intervals. The horizontal line at 0.50 represents the point at which an estimate is no better than random chance. The 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.

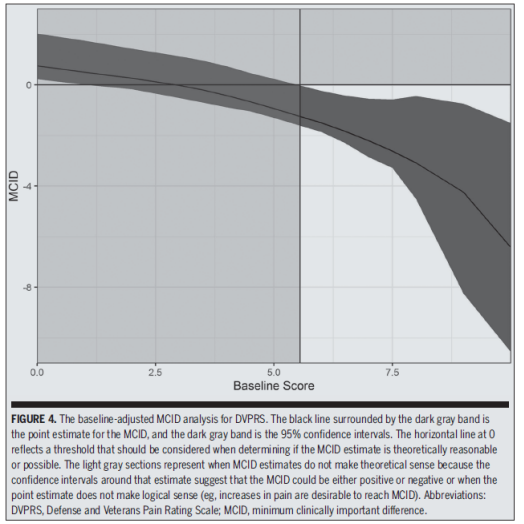
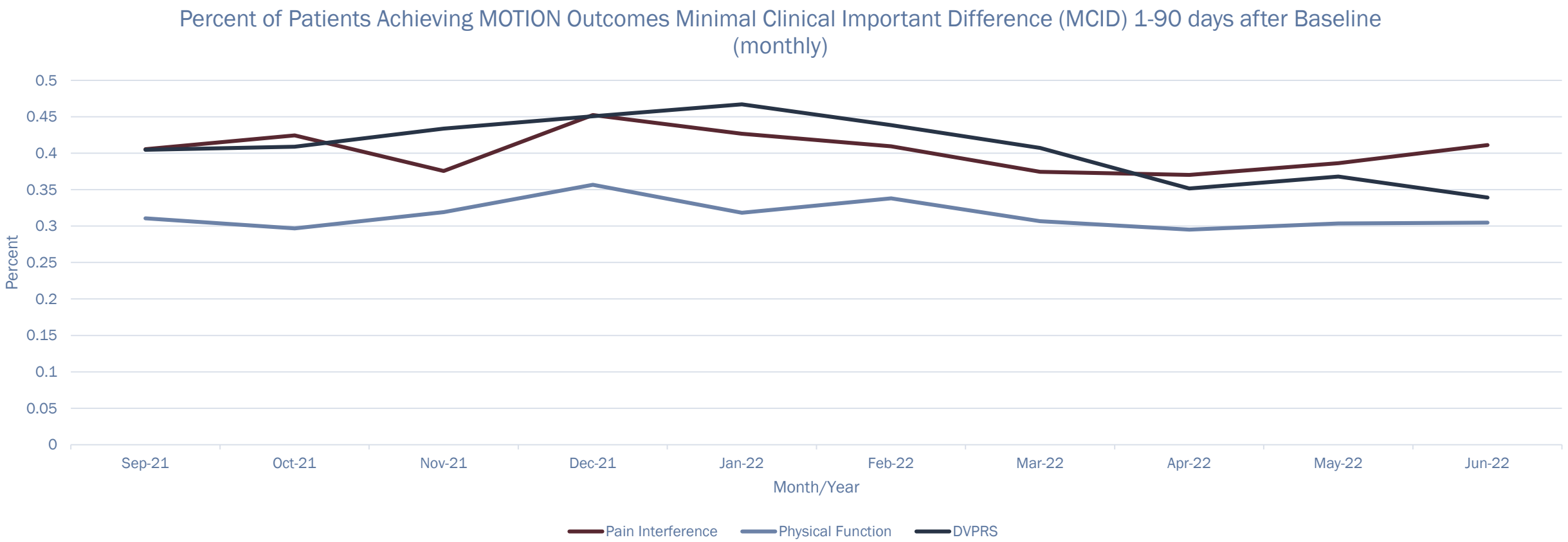


FIGURE 4. The baseline-adjusted MCID analysis for DVPRS. The black line surrounded by the dark gray band is the point estimate for the MCID, and the dark gray band is the 95% confidence intervals. The horizontal line at 0 reflects a threshold that should be considered when determining if the MCID estimate 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.

CONCLUSIONS

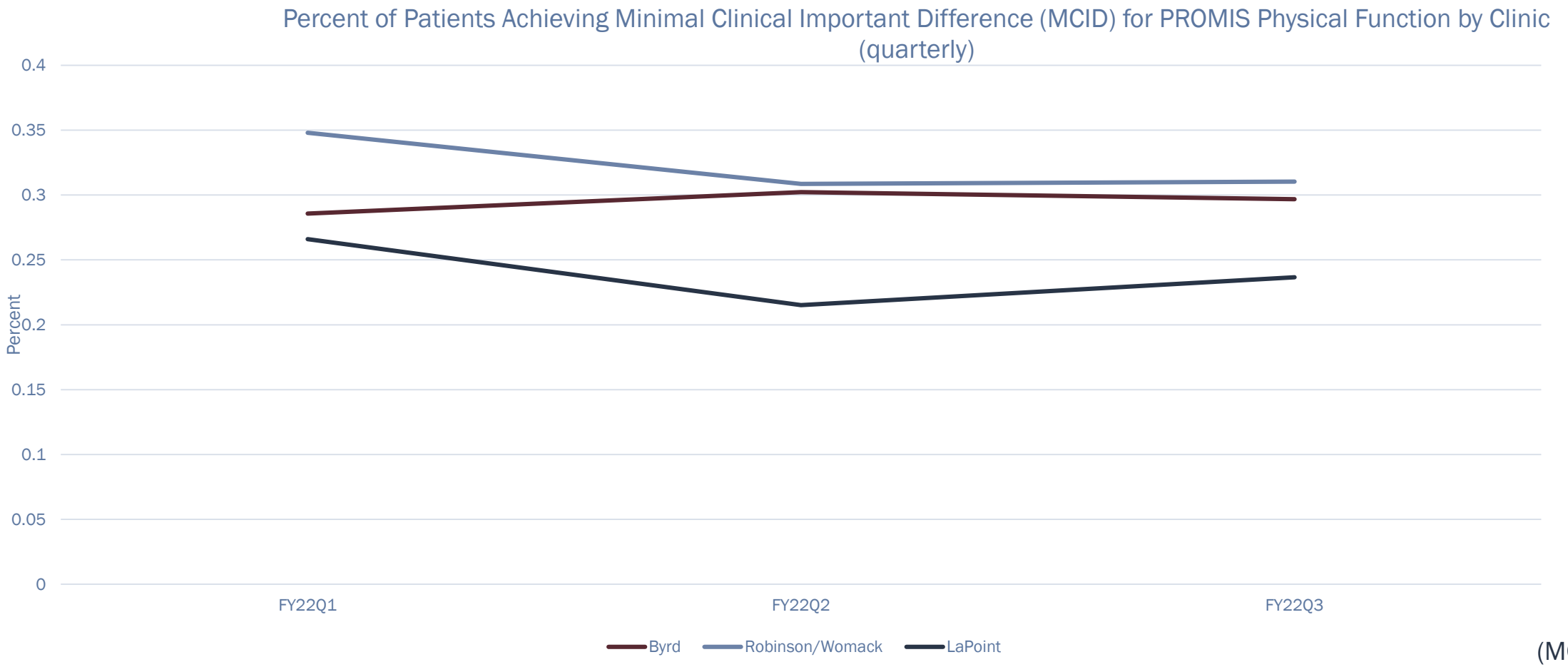
- ***Baseline*** values influence ***MCID*** and ***accuracy*** of MCID
- MCIDs only ***statistically*** and ***theoretically valid*** for a ***discrete range*** of ***baseline scores***
- Logic built into CAMP for MOTION and PASTOR

Data Use – Reporting - Clinical Effectiveness



(MOTION, 2022)

Data Use – Reporting - Clinical Effectiveness



(MOTION, 2022)

Lesson #3:
Behavior Change

54

Clinician Behavior

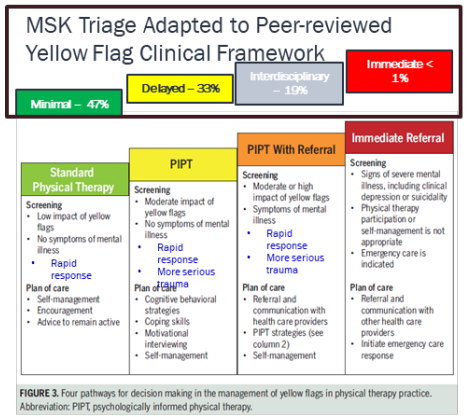
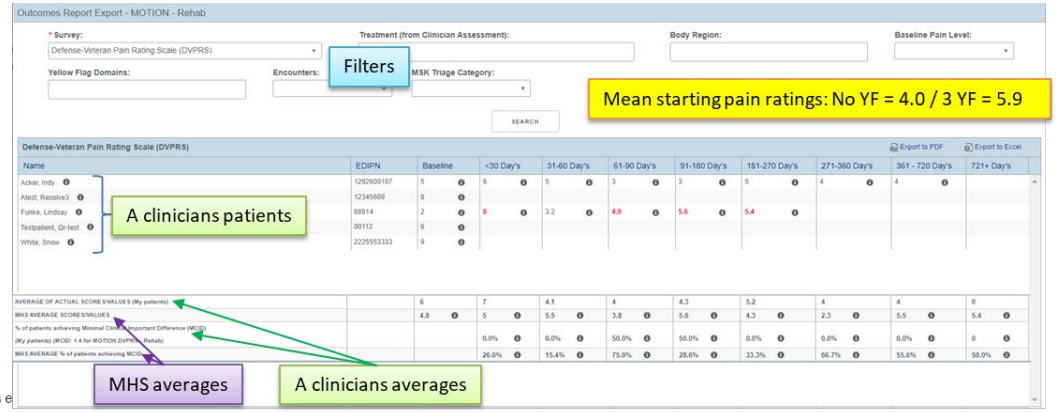


FIGURE 3. Four pathways for decision making in the management of yellow flags in physical therapy practice.
Abbreviation: PIPT, psychologically informed physical therapy.

Stearns e



- 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

NOTE: Names and data on this slide are fictional

(MOTION, 2022)

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.[1,2,3,6]

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.

Registered Dietitian

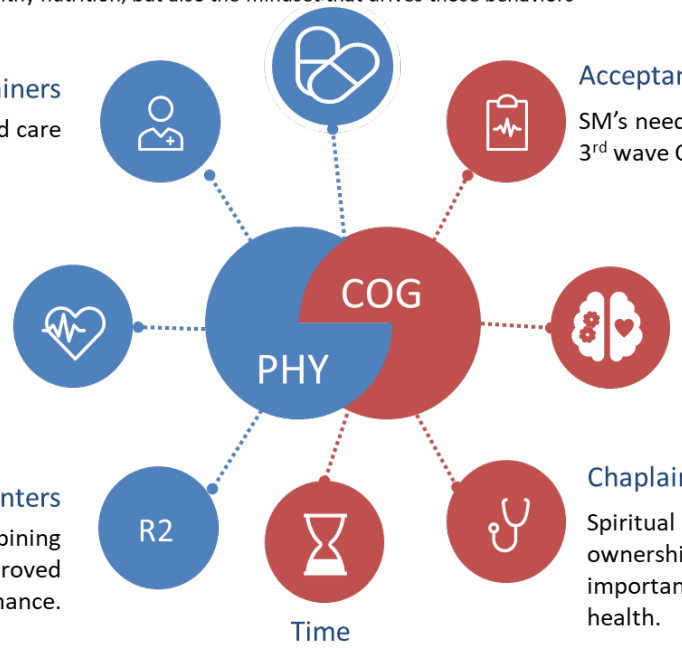
Our culture tends to look for "quick fixes". RD's are uniquely qualified to discus strategies not only for healthy nutrition, but also the mindset that drives those behaviors

Physical Therapy & Athletic Trainers

Experts at Bio-anatomical assessment and care

Acceptance & Commitment Therapy

SM's need a framework for accepting their current self, 3rd wave CBT accomplishes this



Strength and Conditioning Coaches

Highly motivating, excel at educating general population on stress reactions and building rapport

Occupational Therapy

Experts with helping individuals succeed in their environment

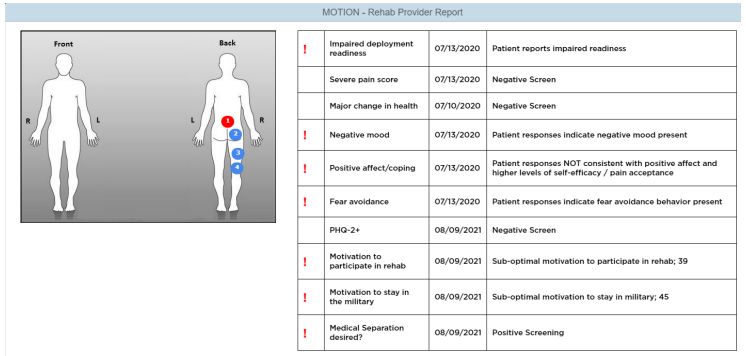
Ready & Resilient centers

Organic resources to installation focused on combining the physical and cognitive domains for improved performance.

Chaplains

Spiritual health, and a strong sense of ownership in self and purpose is just as important as physical and cognitive health.

Patient Behavior



!	Impaired deployment readiness	07/13/2020	Patient reports impaired readiness
	Severe pain score	07/13/2020	Negative Screen
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!	Negative mood	07/13/2020	Patient responses indicate negative mood present
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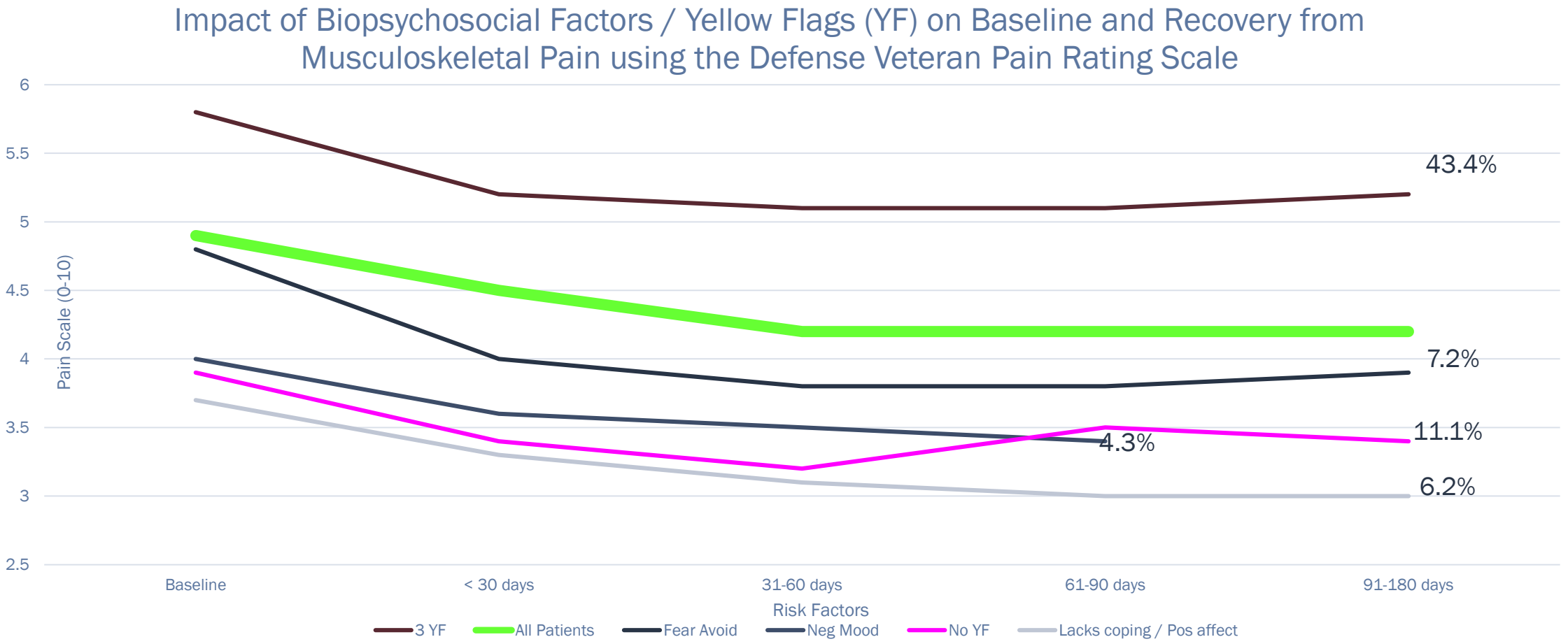
	PHQ-2+	08/09/2021	Negative Screen
!	Motivation to participate in rehab	08/09/2021	Sub-optimal motivation to participate in rehab; 39
!	Motivation to stay in the military	08/09/2021	Sub-optimal motivation to stay in military; 45
!	Medical Separation desired?	08/09/2021	Positive Screening

- 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

Patient Behavior



(MOTION, 2022)

Lesson #4:
Improving Readiness

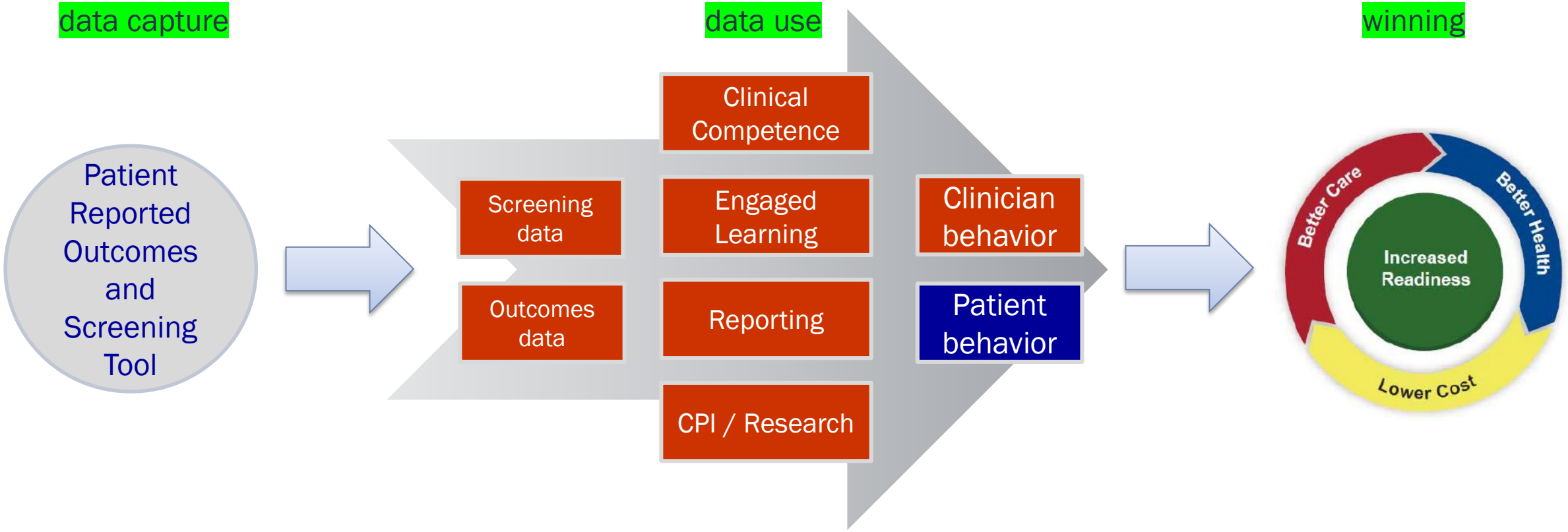
Winning – Clinical Success and Returning Service Members to Duty

- 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

A Model for Data Driven Meaningful Improvement



Key Takeaways

- 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

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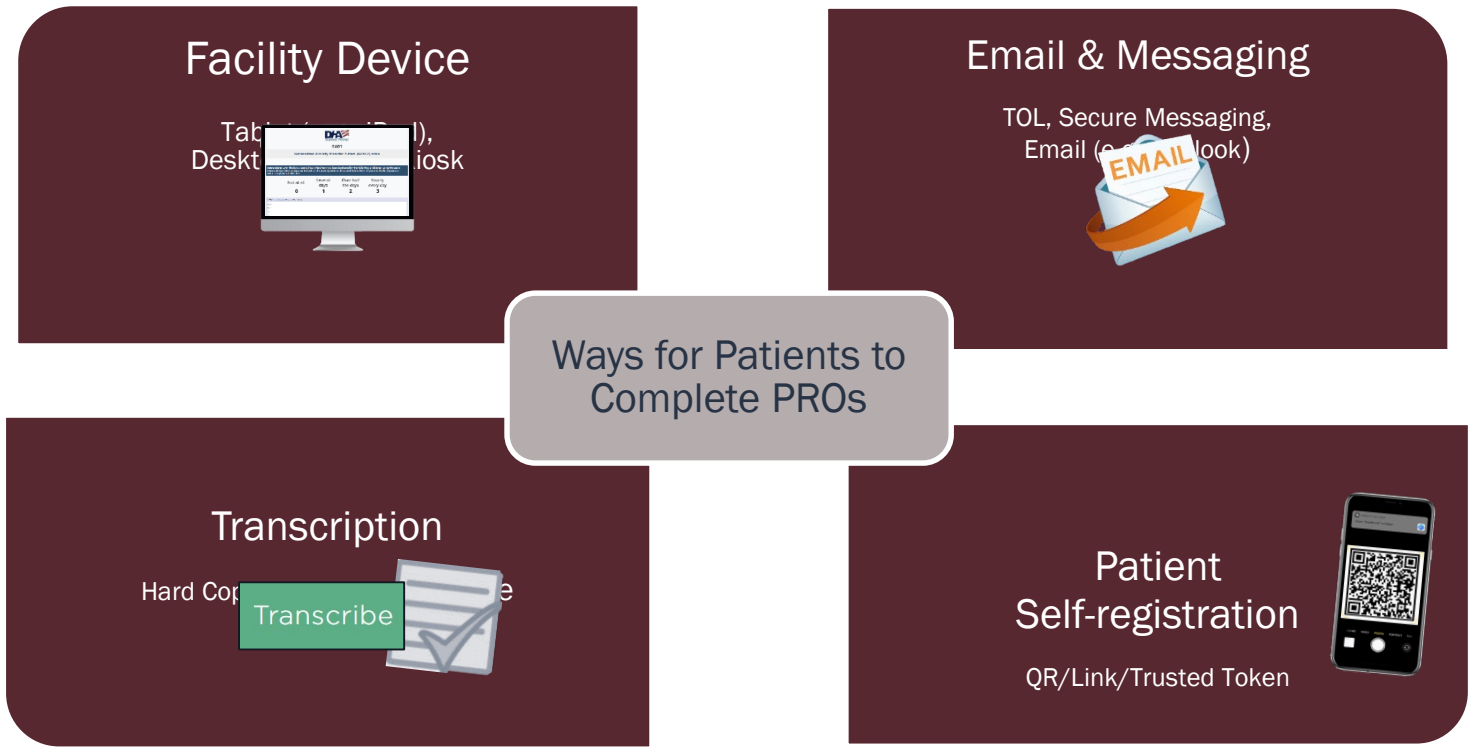
THANK YOU

Backup Slides

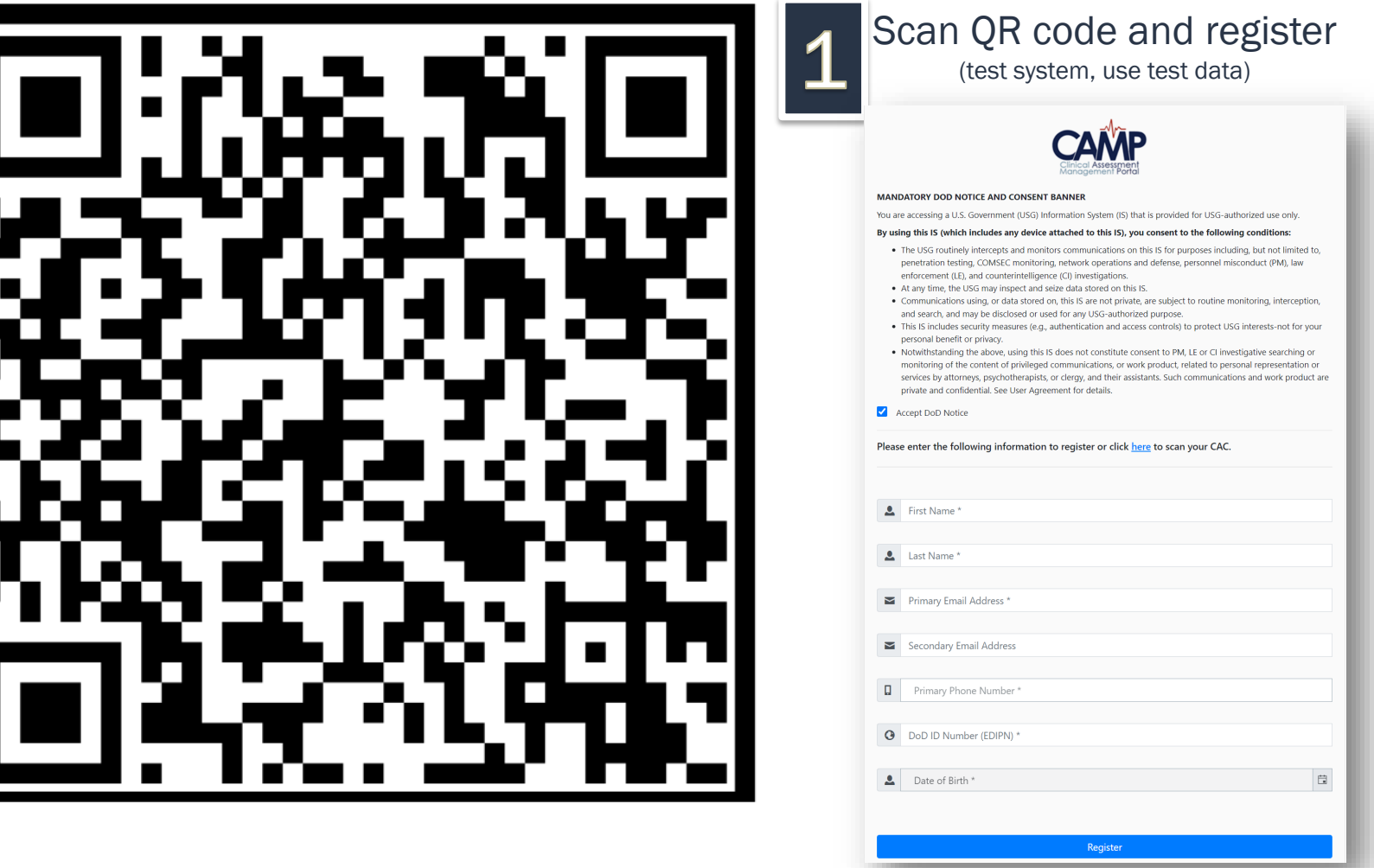
Enterprise Applications to enable PROs

Patient Experience - Completing PROs



Try It Yourself! Patient Experience - Completing PROs

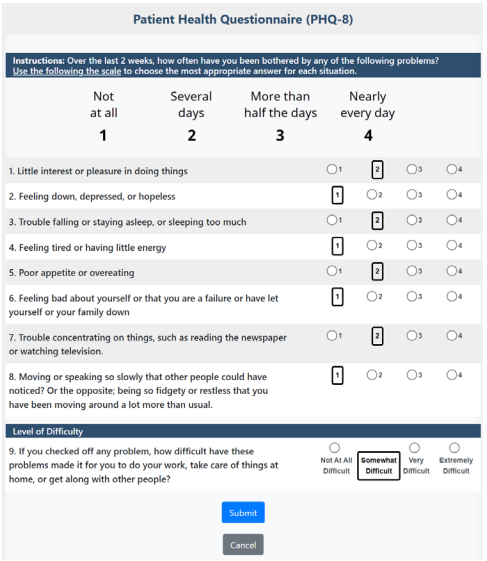
1 Scan QR code and register
(test system, use test data)



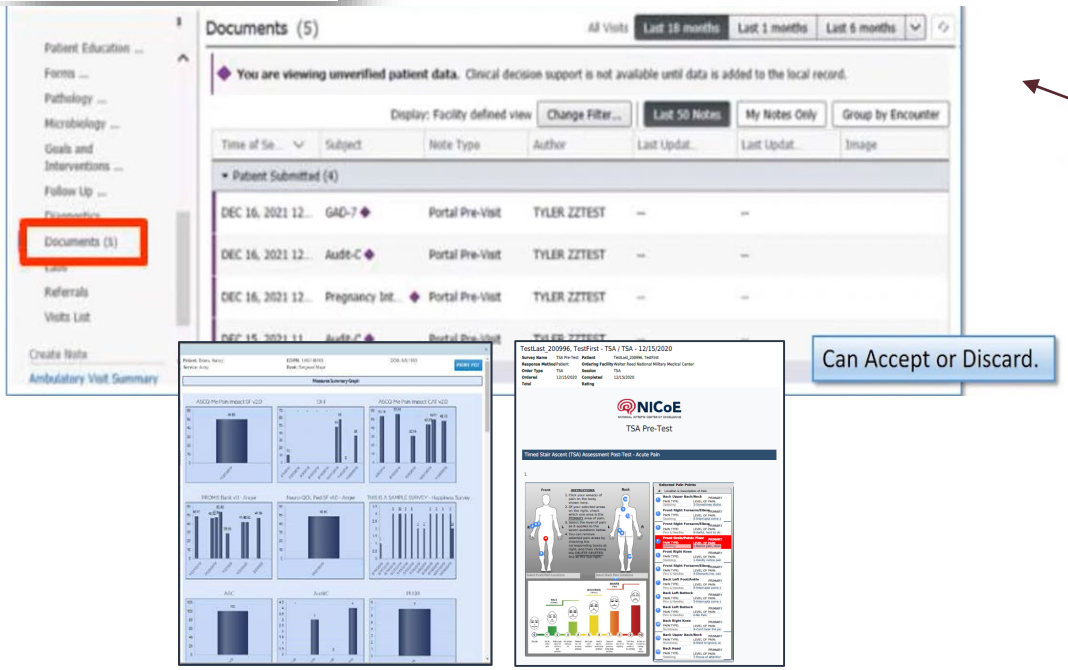
* EDIPN must be 10-digits long

2 Review list of PRO-M to complete

3 Complete and submit



Integration of Enterprise Applications with GENESIS



FHIR Proxy

PROs Engine (CAMP/TBI Portal)