A Mission-Ready Force: The Strategic Imperative of Measuring Readiness in the Military Health System

Air Force Col. Justin Fox, MD, MHS, FACS, CPE
Chief Medical Officer, Joint Knowledge, Skills, and Abilities Program Management Office
Professor of Surgery, Uniformed Services University

February 19, 2026

11:30 a.m. – 12:30 p.m.

Presenter

Air Force Col. Justin Fox, MD, MHS, FACS, CPE

Chief Medical Officer (CMO), Joint Knowledge, Skills, and Abilities (JKSA) Program Management Office, Defense Health Agency

Falls Church, Va.

Professor of Surgery, Uniformed Services University

Bethesda, Md.

Air Force Col. Justin Fox, MD, MHS, FACS, CPE

Col Justin Fox is a Professor of Surgery at the Uniformed Services University and the Chief Medical Officer of the Joint Knowledge, Skills, and Abilities (JKSA) Program Management Office. He leads the enterprise development and implementation of standardized clinical readiness metrics that inform Joint medical policy, workforce planning, and operational preparedness across the Department of Defense. As the Air Force Surgeon General's Plastic Surgery Consultant, Col Fox provides senior-level advisement on clinical practice, readiness requirements, and the professional development of Air Force plastic surgeons worldwide.

Disclosures

- Colonel Fox has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
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Learning Objectives

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

1. Explain the “peacetime effect” and describe how it compromises medical readiness.
2. Describe the Joint Knowledge, Skills, and Abilities (JKSA) Clinical Readiness Program framework and summarize the purpose of each line of effort (knowledge, skills, clinical activity).
3. Identify current measures of clinical readiness within the Military Health System (MHS) (including JKSA measures).
4. Summarize the key elements of a military-civilian partnership quality improvement program.
5. Compare and contrast data capture options across key care settings and structured self-report, including tradeoffs in completeness, burden, and credibility.

Polling Question 1

What are your current roles within the Military Health System (select all that apply)?

- Physician
- Surgeon
- Nurse
- Technician
- Healthcare Leadership within the Military Treatment Facility (MTF)
- Healthcare Administration outside the MTF
- Responsible for collecting or reporting readiness data
- Other: _____

Overview

- The Gap and Why We Measure
- Policy Foundation
- Clinical Readiness Program Focus
- Knowledge, Assessments, & Clinical Activity Evaluation
- Readiness measures, current state
- Data capture at scale
- Example: The Military Civilian Partnership Quality Improvement Program
- Ongoing work, Future directions

Why Do We Measure

The Walker Dip

- **Peacetime Effect**
  - Lessons from prior conflicts lost during interwar periods
- **Combating the Peacetime Effect**
  - Codifying specialty-specific, expeditionary scope of practice (ESP)
  - Identifying core Knowledge, Skills, and Abilities (KSAs) to fulfill the military medical mission

(Walker, 2018)

WW2- World War II
OEF/OIF- Operation Enduring Freedom/Operation Iraqi Freedom

The Walker Dip, in full

- Post-war military cuts fall disproportionately on medical services, leaving a mismatch between the size of forces that can be deployed and the ability to care for them when injured.
- Insufficient medical representation in military operational planning results in the neglect of medical logistics.
- Technical and procedural lessons are not adequately captured and incorporated into training and doctrine.

(Walker, 2018)

Documented challenges in direct care

GAO Highlights

Highlights of GAO-19-206, a report to congressional committees

February 2019

DEFENSE HEALTH CARE

Actions Needed to Determine the Required Size and Readiness of Operational Medical and Dental Forces

> Am Surg. 2023 Nov;89(11):4316-4320. doi: 10.1177/00031348221109451. Epub 2022 Jun 19.

Declining Military Surgical Cases and the Impact on Military Surgical Graduate Medical Education

Andrew B Hall [1], Michael Krzyzaniak [2], Iram Qureshi [3], Robert Cromer [4], Matthew D Tadlock [2], Danielle Patrick [5], Quinton Hatch [6], Maj Kyle Iverson [4], Avery Walker [5], Jacob Glaser [3]

An Analysis of the U.S. Department of Defense's Military Health Readiness Assessments

> Mil Med. 2021 Jul 1;186(7-8):646-650. doi: 10.1093/milmed/usaa543.

Trends in Surgical Volume in the Military Health System-A Potential Threat to Mission Readiness

Austin Haag [1], Eugene B Cone [2 3], Jolene Wun [1], Peter Herzog [2], Samuel Lyon [2], Junaid Nabi [2 3], Maya Marchese [2], David F Friedlander [2 3], Quoc-Dien Trinh [2 3]

June 2021

DEFENSE HEALTH CARE

Actions Needed to Define and Sustain Wartime Medical Skills for Enlisted Personnel

> J Trauma Acute Care Surg. 2022 Apr 1;92(4):e57-e76. doi: 10.1097/TA.0000000000003477.

Integrated military and civilian partnerships are necessary for effective trauma-related training and skills sustainment during the inter-war period

Joseph J Lee [1], Andrew B Hall, Matthew J Carr, Austin G MacDonald, Theodore D Edson, Matthew D Tadlock

Comment > J Am Coll Surg. 2017 Feb;224(2):218-219. doi: 10.1016/j.jamcollsurg.2016.10.038.

Addressing Low-Volume Surgical Practices in the Military

Mark Boston [1]

Combating the Walker Dip

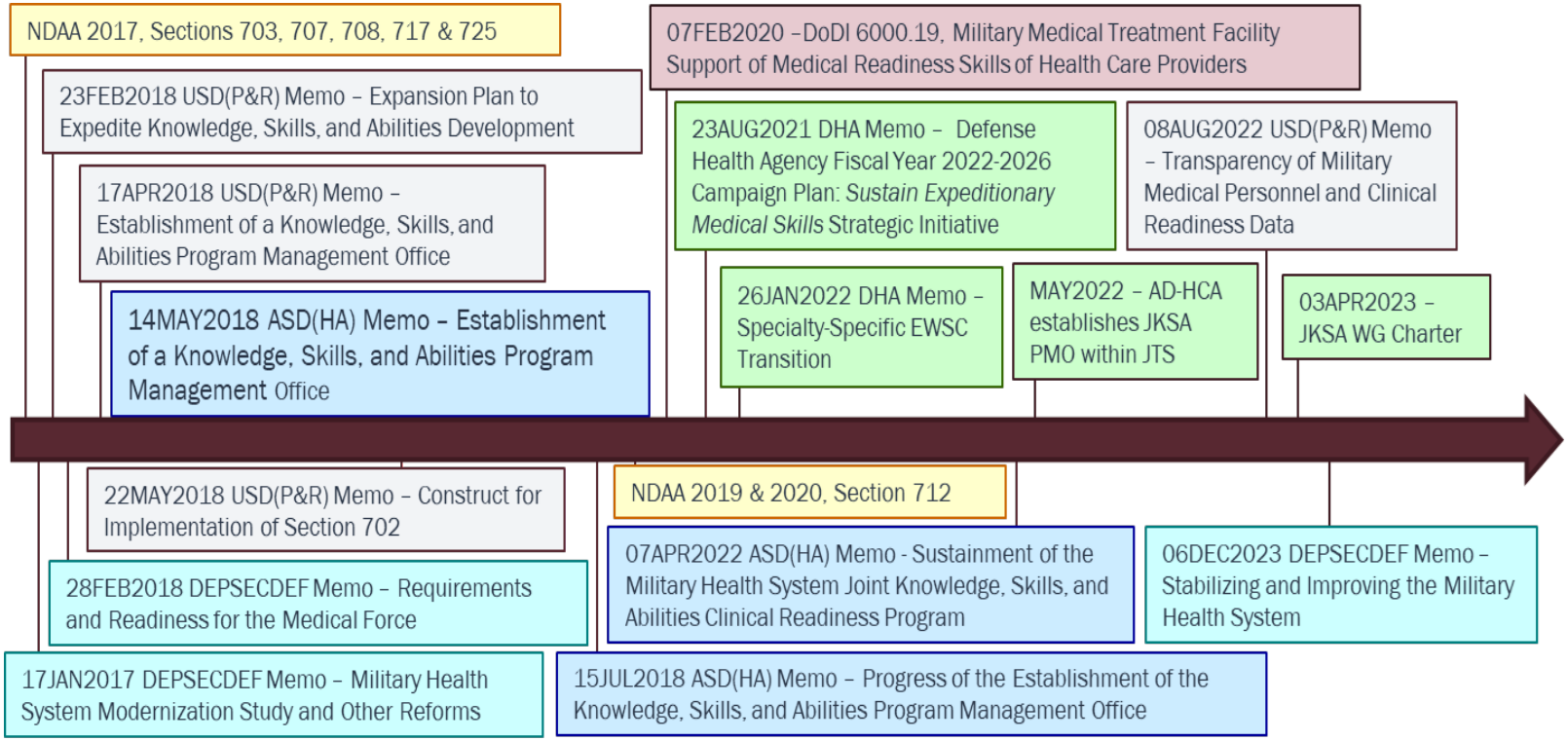
- Peacetime Effect
  - Lessons from prior conflicts lost during interwar periods

- **Combating the Walker Dip**
  - Codifying specialty-specific, expeditionary scope of practice (ESP)
  - Identifying core Knowledge, Skills, and Abilities (KSAs) to fulfill the military medical mission

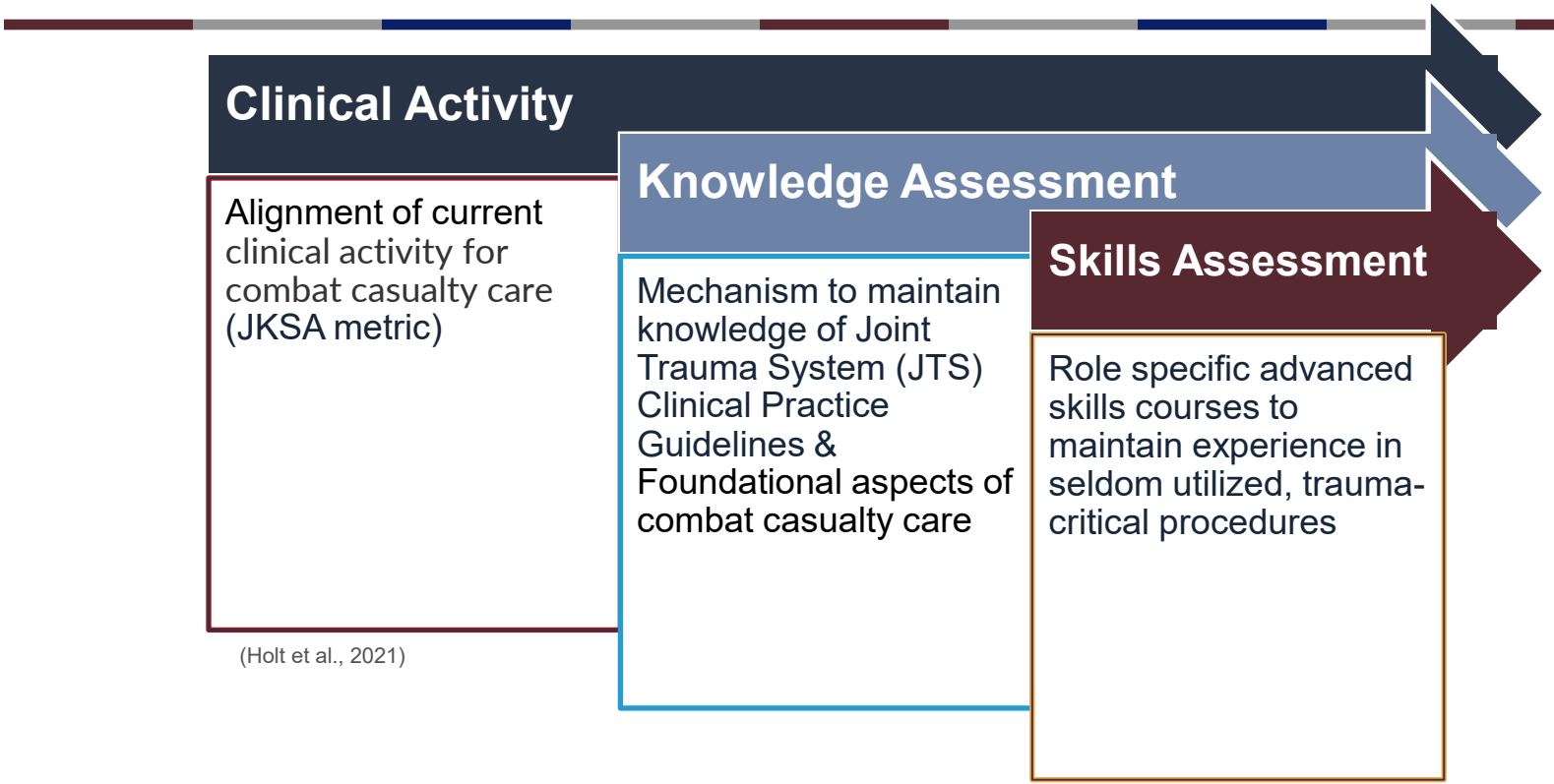
(Walker, 2018)

Policy, Program, & Outcomes

Policy Foundation for a Clinical Readiness Program



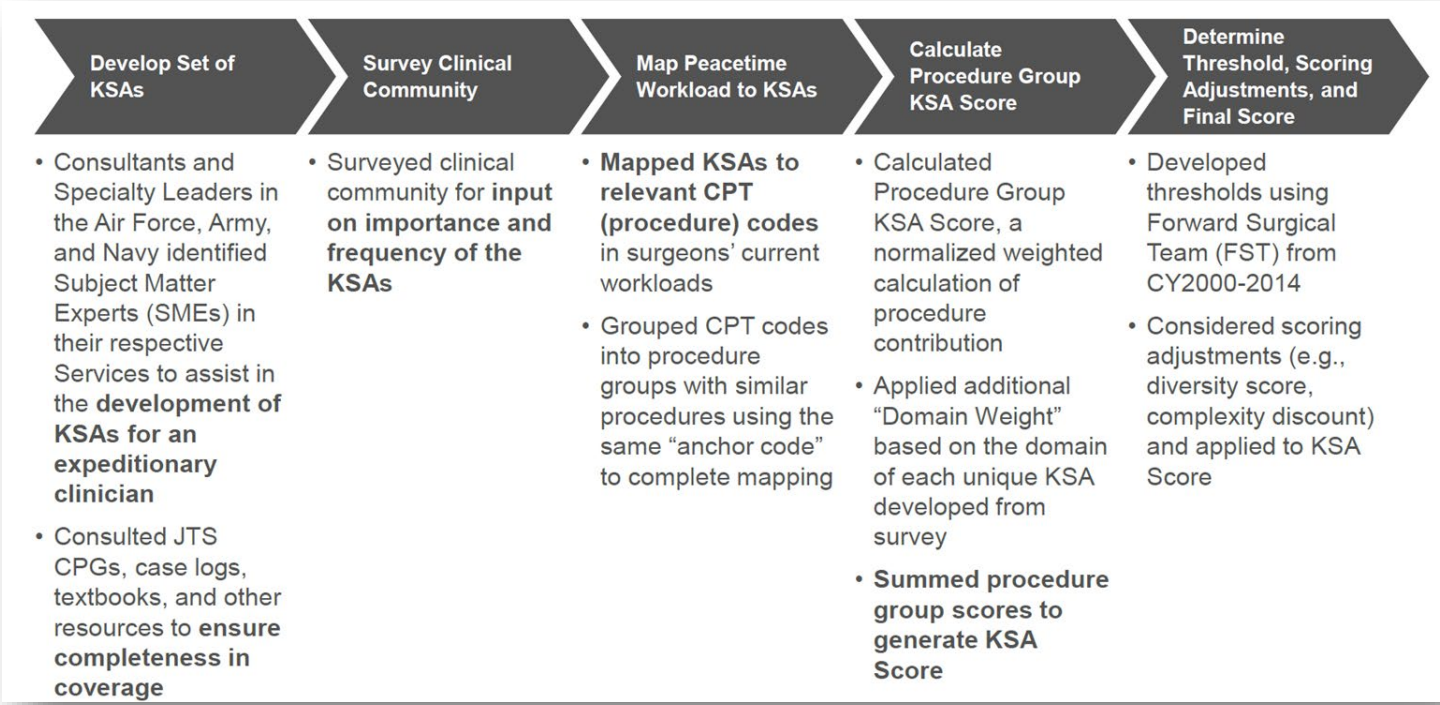
Clinical Readiness Program Lines of Effort



JKSA: Defining readiness measures

Specialty	Joint ESP	KSA Mapping	Activity Threshold	Dashboard
General Surgery	■	■	■	■
Orthopedic Surgery	■	■	■	■
Emergency Medicine	■	■	■	■
Critical Care Medicine	■	■	■	■
Trauma Surgery	■	■	■	■
Ophthalmic Surgery	■	■	■	■
Cardiothoracic Surgery	■	■	■	■
Plastic Surgery	■	■	■	■
Urologic Surgery	■	■	■	■
Neurosurgery	■	■	■	■
Oral Maxillofacial Surgery	■	■	■	■
Vascular Surgery	■	■	■	■
Otolaryngology Surgery	■	■	■	■
Obstetrics/Gynecology Surgery	■	■	■	■
Anesthesia/CRNA	■	■	■	■

JKSA: Defining readiness measures, continued



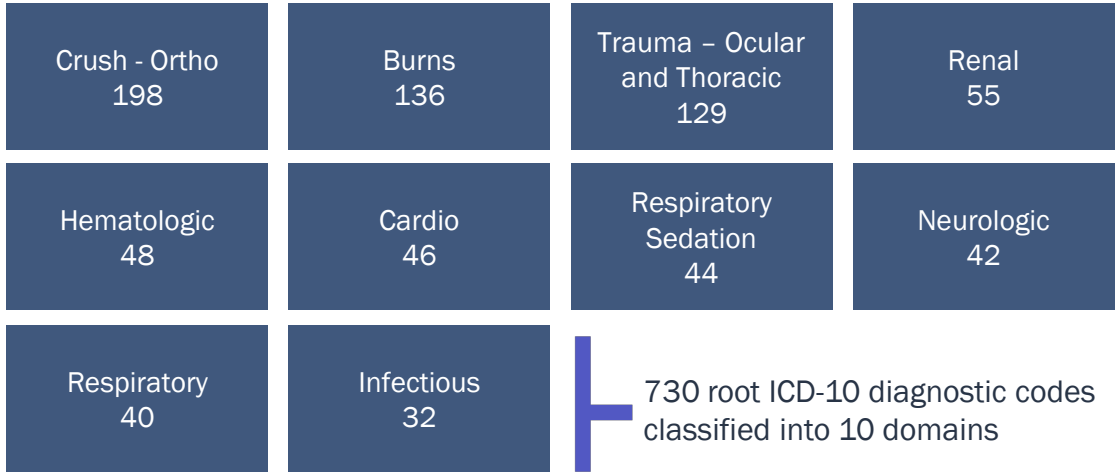
Trauma Surgery: JKSA procedural domains

Amputation 27880	Major Vascular 35103	Burn – High C5274	Cardiac Trauma 33300	Craniectomy 61312	Cervical Open 60240	Hepatect-omy 47130
Cardiac 39220	CRRT 33946	Pneumo-nectomy 32440	Ex Lap 49000	Other Extremity 11042	Thoracic-Cardiac 43108	Pancreas 48153
Upper GI 43632	Intra-Abdomen 44120	Urologic 50220	Complex Colorectal 44145	Trachea 31600	Thoracic-Lung 32659	Burn-Low 15100
CV-Endo 34800	Chest Wall 21610	External GU 54670	Kidney Transplant 50360	Endoscopy 43235	Ultrasound 76937	Cardio-version 92960
Airway 31603	Mastectomy 19303	Intra-Abd Lap 47562	Catheter / Lines 36002	Ab Wall 49560	Myo-cutaneous 15734	Bypass / Valve 33405
Minor Excision 11446	Facial Trauma 11646	Sedation 99144				

2,463 CPT codes classified into 38 domains which generate JKSA points

(jts.health.mil)

Trauma Surgery: JKSA diagnostic domains



(jts.health.mil)

Trauma Surgery: Unadjusted JKSA Calculation

Surgeon Case Log

CPT Code	CPT Count
44145	3
44970	4
32551	2
36556	2

Crosswalk Merged

CPT Code	Description	JKSA Score	Total Score
44145	COLECTOMY, PARTIAL; WITH COLOPROCTOSTOMY	196	588
44970	LAPAROSCOPY, SURGICAL, APPENDECTOMY	73	292
32551	INSERTION OF CHEST TUBE	69	138
36556	INSERTION OF NON-TUNNELED CENTRAL LINE	69	138

16.5K
Threshold

1,156
JKSA Points

(jts.health.mil)

Scope of Current Readiness Measures

Site Specific | Local measures of importance

Army | Individual Critical Tasks (ICT)

Navy| Clinical Activity Data Capture (CADC)

Air Force| Comprehensive Medical Readiness Program (CMRP)

DHA| Joint Knowledge, Skills, and Abilities Metric

Data, data, data

Polling Question 2

From your perspective, what is the **biggest challenge** in collecting clinical readiness data?

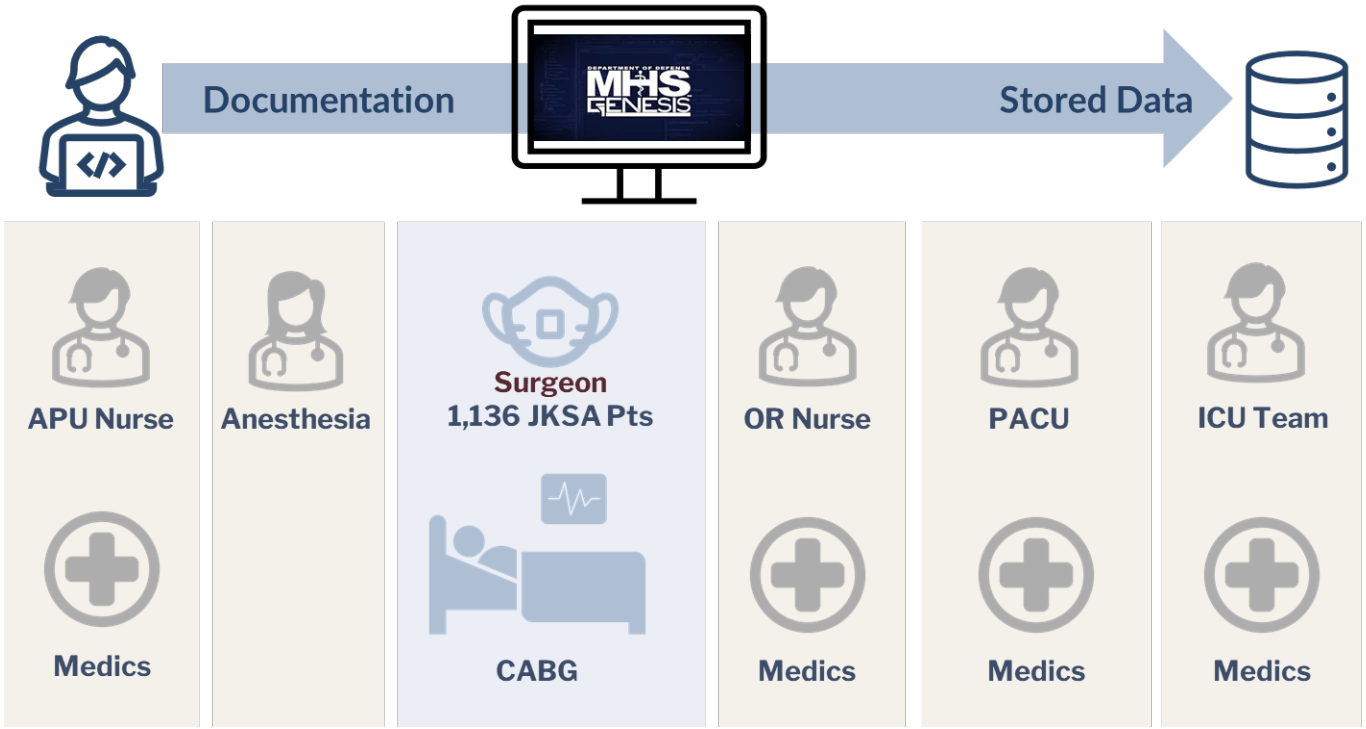
Military healthcare providers work across several clinical domains

- **Military Treatment Facilities**
- External Resource Sharing Agreements
- VA Resource Sharing Agreements
- Training Agreements
- Off Duty Employment
- Operational Medicine

Most domains require have their own data source

- **Military Treatment Facilities | MHS Genesis**
- External Resource Sharing Agreements | Referrals Tables
- VA Resource Sharing Agreements | VA Informatics and Computing Infrastructure
- Training Agreements | Health Record, Billing, Self-Report
- Off Duty Employment | Self Report via MCART 2.0
- Operational Medicine | Self Report via MCART 2.0

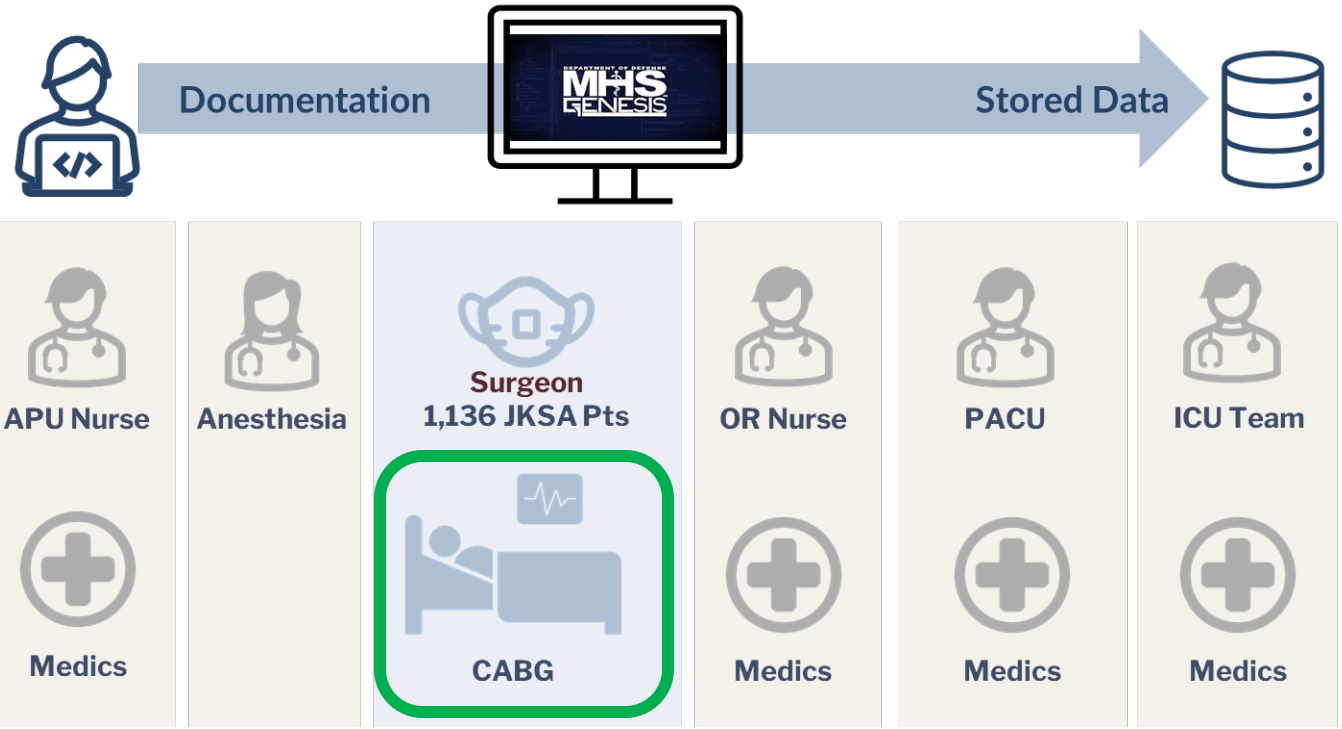
Evolving data capture in the military health system



Leveraging MHS Genesis for an expanded view of readiness

 Anesthesia	x2	General anesthesia, intubation, cell saver, and 18 medications given include antibiotics, tranexamic acid (TXA), insulin ggt, and vasoactive agents
 Nursing	x15	Preoperative, intraoperative, post-operative, ICU: Pacemaker mgmt., chest tube mgmt., advanced cardiovascular monitoring including arterial line mgmt., ventilator mgmt., medication ggt including insulin drip,
 Technicians	x18	Lab, Respiratory Therapists (7), Surgical Technician performing vital sign assessment, ventilator mgmt., respiratory medications
 Other Providers	x3	Pharmacy, Dietician

VA Resource Sharing Agreement (VARSA): VA beneficiaries treated in MTFs



VARSA: DOD providers working in VA facilities

DOD-VA RSA Listing

connect.gov

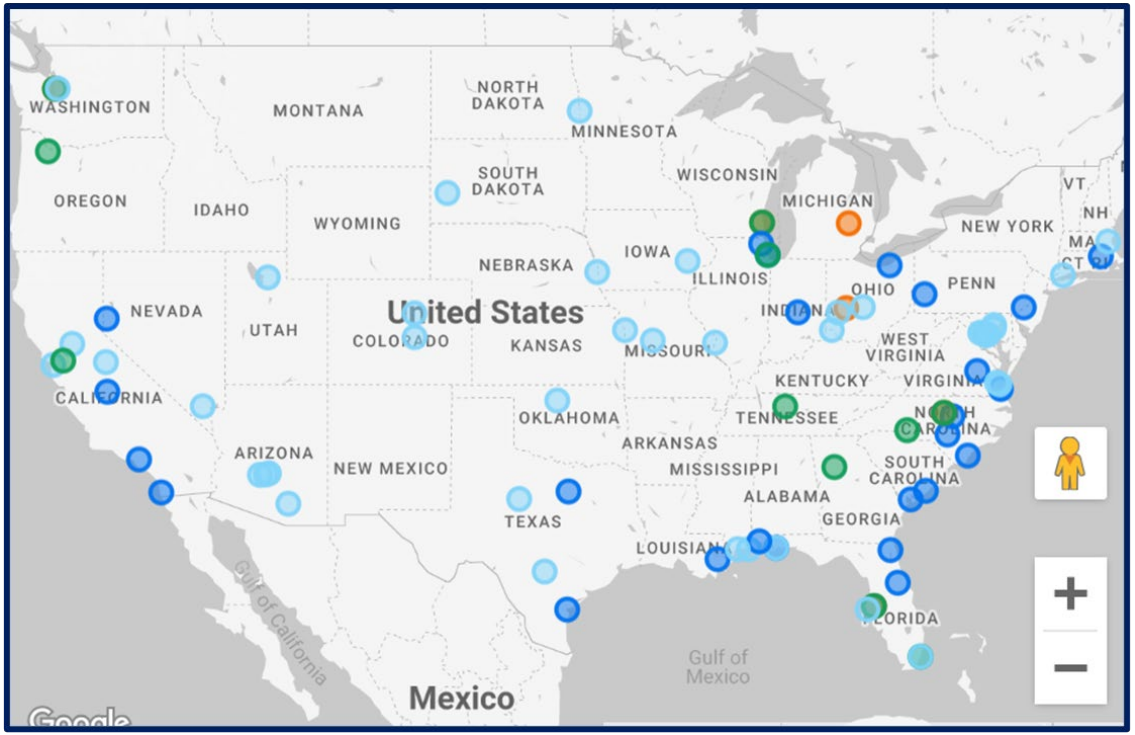
DOD Providers by NPI

Defense Medical Human Resources System-Internet (DHMRSi)/M2

VA Data Tables

VA Corporate Data Warehouse (CDW) or VINCI Data

Training Agreements (MCPs)

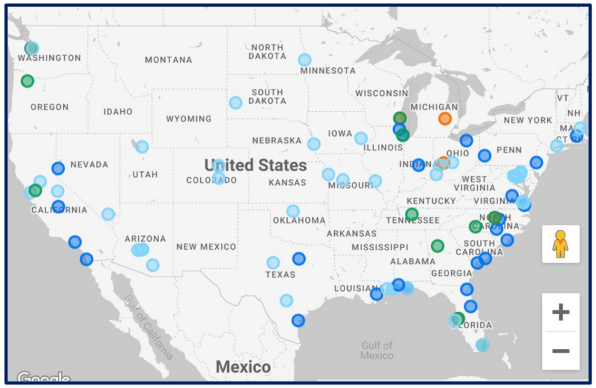


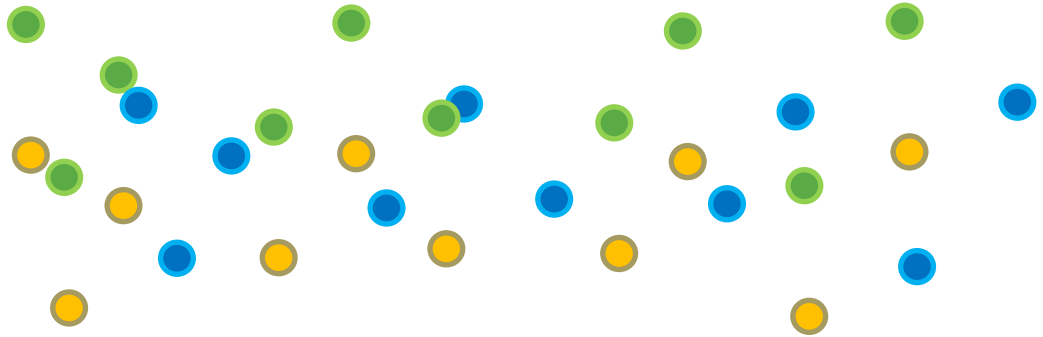
53
Military Units

142
Military Civilian Partnerships

40
States

Training Agreements (MCPs), continued





Process for Data Management at Scale

Local Data

Data Transfer

Automated Processing

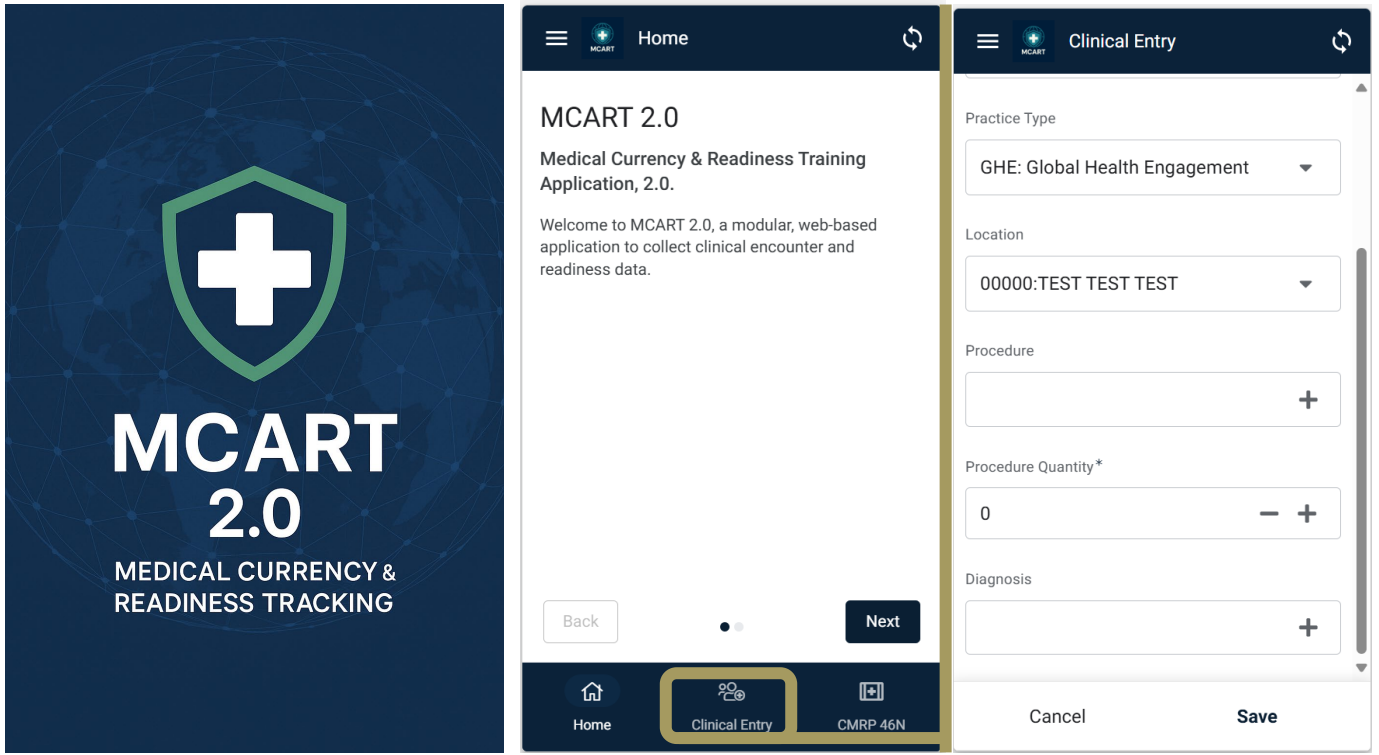
Central Storage

Analysis and Visualization

MCART 2.0: TriService Self-Reporting Readiness

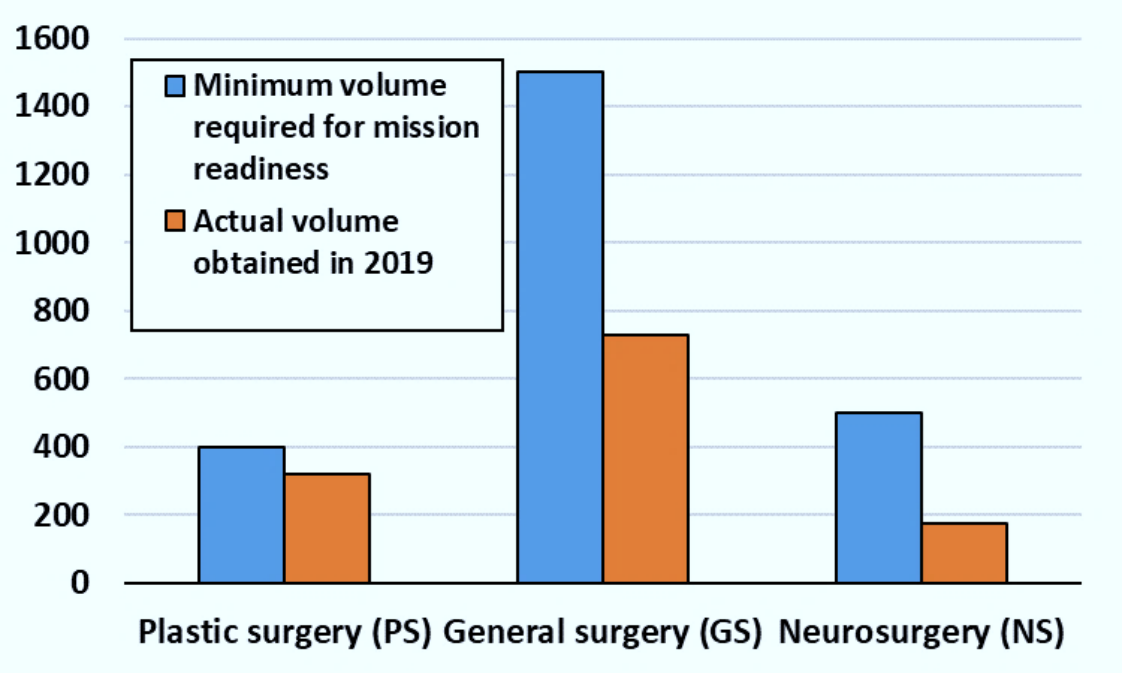
- Mission: To support clinical readiness data collection across clinical domains that is
  - Module based
  - Customizable
  - Inclusive of data management and analytics

MCART 2.0: Interface



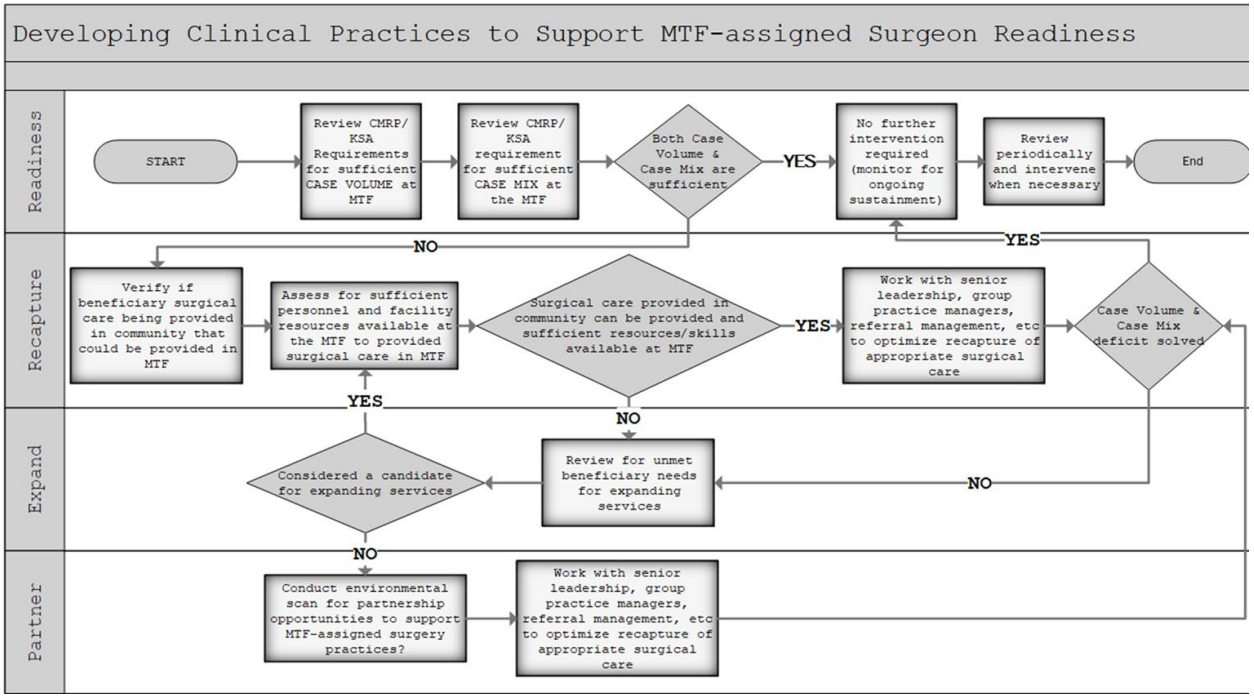
An example in Plastic Surgery

DHA Quadruple Aim Performance Process (QPP) (2019), Blended practices for readiness



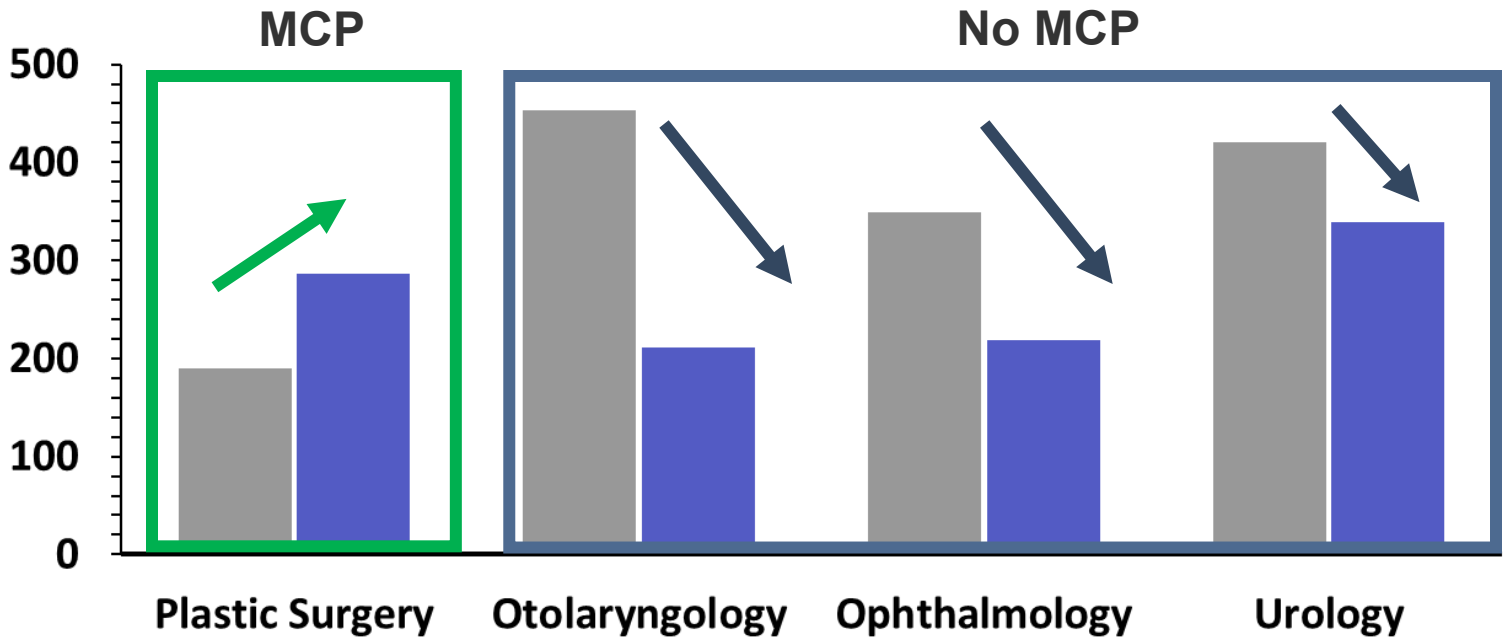
- 2.4x more appointments than demand
- 13 pts deferred to network across 3 services
- 632 more procedures/yr needed for readiness

Example, Blended practice approach: Recapture, expand, partner



1. Maximize care within and across MTFs
2. Optimize provider clinical templates to meet beneficiary demand
3. Determine time available for clinical care outside the MTF

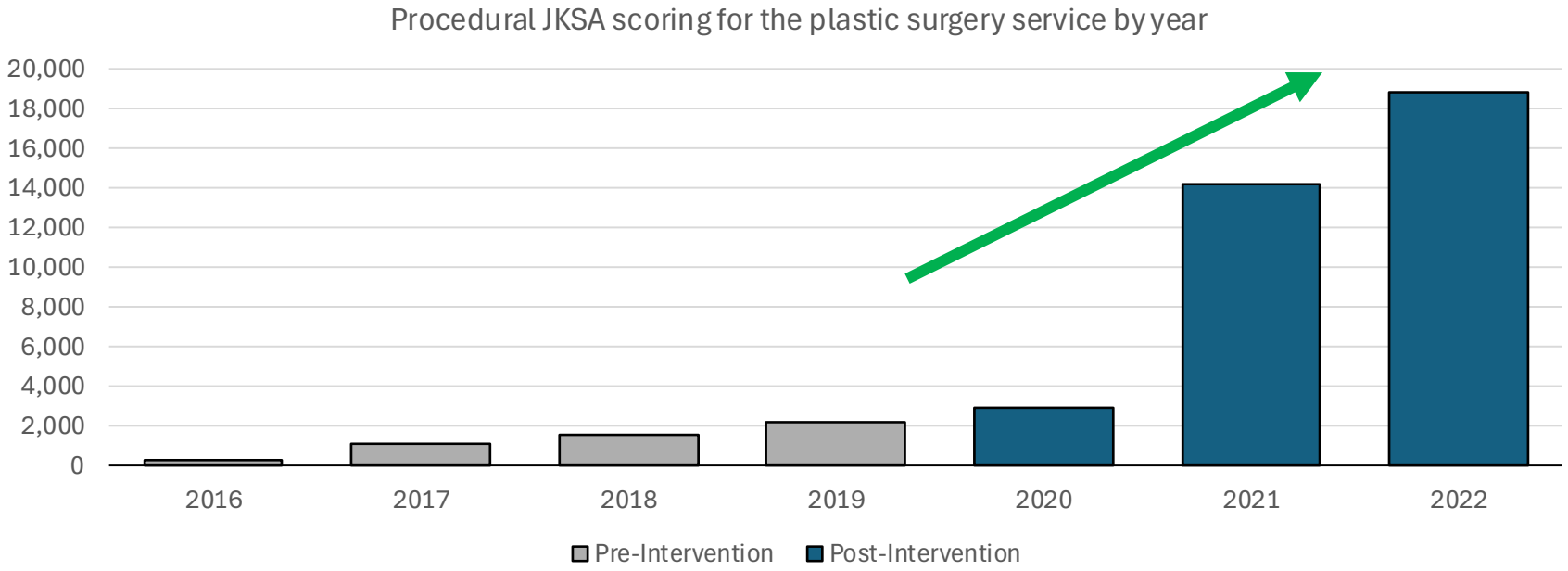
Example Results, Blended practices led to 62% increase in case volume



(Anderson et al., 2025)

MCP- military-civilian partnership

Example Results, Blended practices led to increase in JKSA scoring



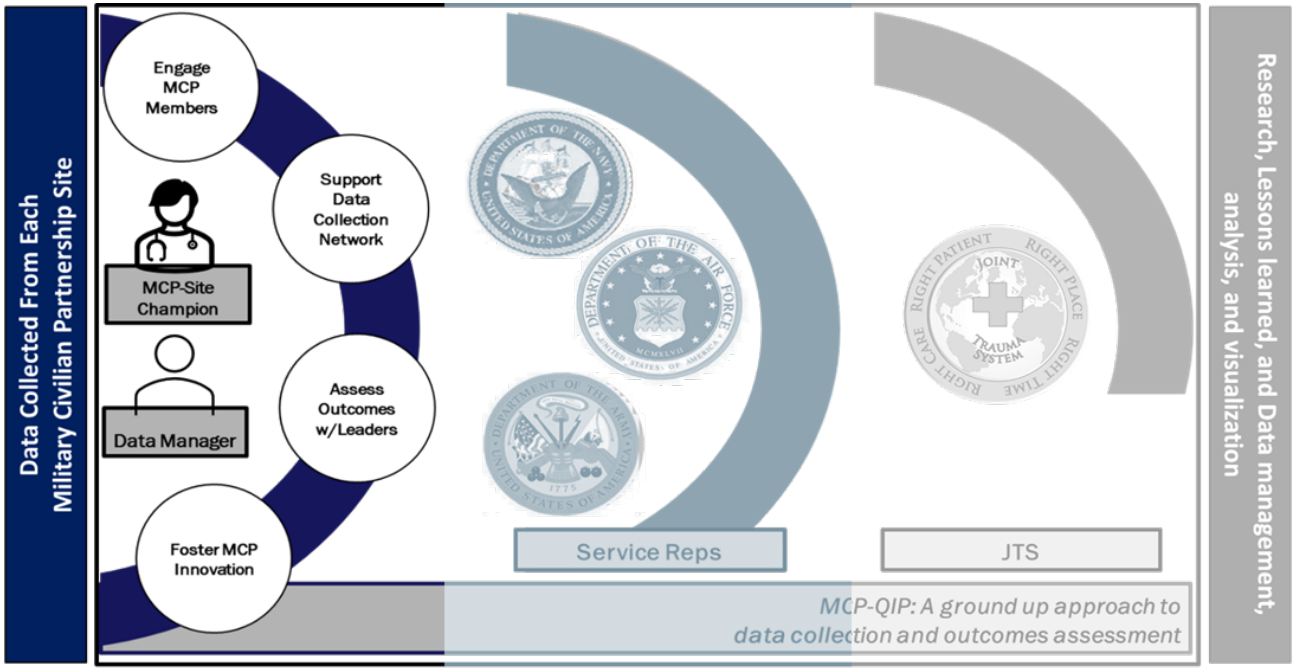
(Anderson et al., 2025)

Lessons learned, large and small

Codifying the lessons learned

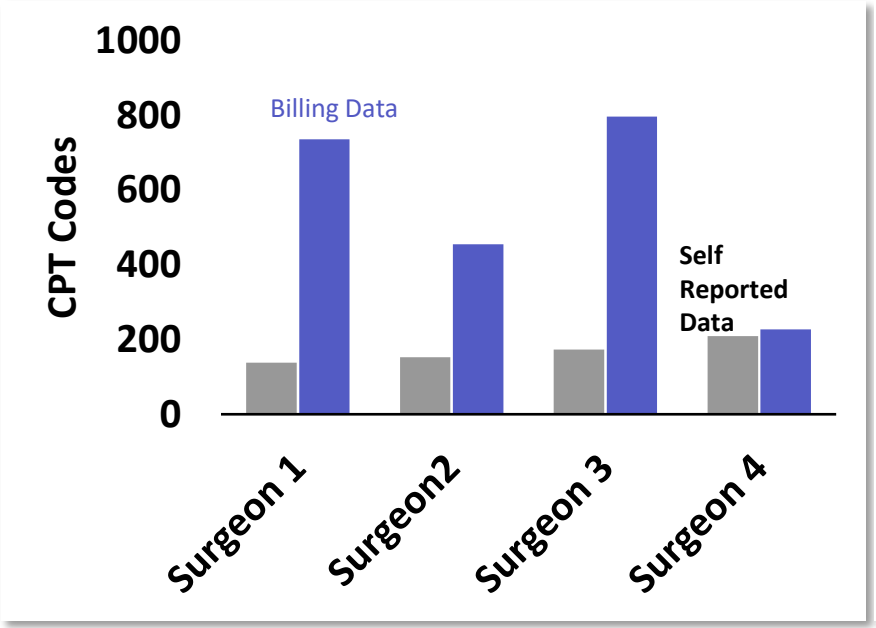
Fox JP, Earnest RE, Sams V. The Military-Civilian Partnership Quality Improvement Program Concept: A Process to Improve Data Collection and Outcomes Assessment. Mil Med. 2024 Mar 30:usae117. doi: 10.1093/milmed/usae117.

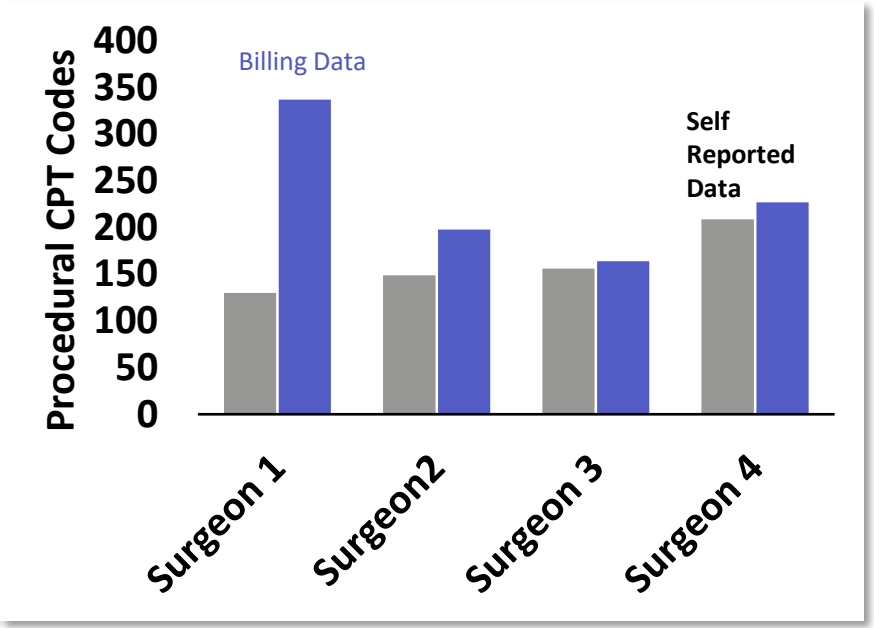
1. Designate an MCP Champion



Fox JP, Earnest RE, Sams V. The Military-Civilian Partnership Quality Improvement Program Concept: A Process to Improve Data Collection and Outcomes Assessment. Mil Med. 2024 Mar 3:usae117. doi: 10.1093/milmed/usae117.

2. Passive > Active Data Collection

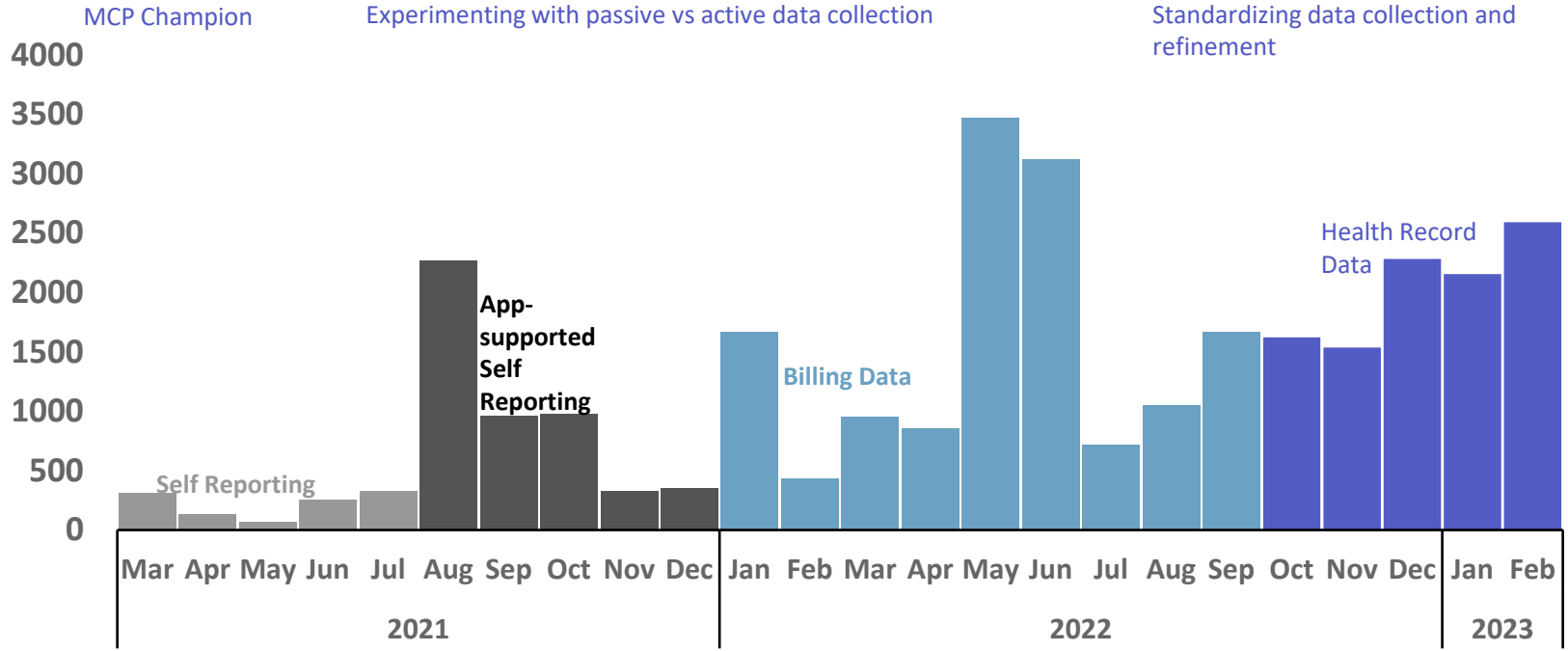




3. Collect little, be flexible

Number	Variable	Description
1	AGREEMENT	Type of agreement (e.g., Mission Zero, MTF-TAA-MOU-MOA, etc)
2	SERVICE	Branch of the military service (e.g., Army, Navy, Air Force)
3	SPECIALTY	Medical specialty (e.g., Orthopedic Surgery, Trauma Surgery, etc)
4	PROVIDER	Name of the healthcare provider
5	PROVIDERNPI	Unique identifier for healthcare providers (NPI)
6	FACILITY	Name of the healthcare facility
7	FACILITYNPI	Unique identifier for healthcare facilities (Facility NPI)
8	RECORDID	Unique identifier for each record (if applicable).
9	ENCDATE	Date of the encounter or service
10	CPT	Current Procedural Terminology code for E&M or medical procedures
11	CPTCOUNT	Count of CPT codes (if applicable)
12	ANETIME	Anesthesia time, minutes (if applicable)
13	DX1 - DX20	ICD-10 Diagnosis codes (up to 20)
14	PR1 - PR4	ICD-10-PCS Procedure codes (up to 4)

MCPQIP results: Impact on data reporting



Sharing the outcomes

- Communicate early and often
- All stakeholders, from unit level to DHA
- Speak the appropriate readiness measure(s)

Current (Ongoing) Efforts

Polling Question 3

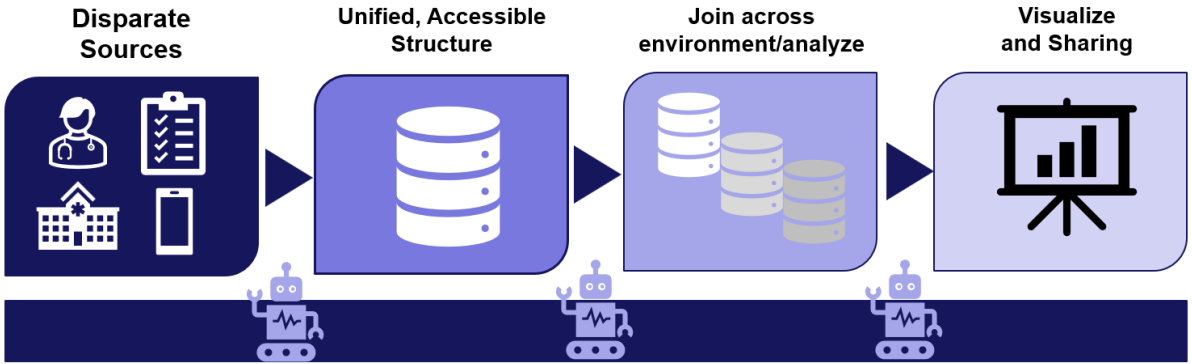
From your perspective, what is the **biggest gap** in clinical readiness assessment?

Standardize across domains

- **Military Treatment Facilities**
- External Resource Sharing Agreements
- VA Resource Sharing Agreements
- Training Agreements
- Off Duty Employment
- Operational Medicine

Simulation

Sustainability, Sharing, & Integration



We are building a sustainable process to bring together varied data sources into a common structure and environment which will allow sharing across analytic groups and end users.

Key Takeaways

Key Takeaways

1. The peacetime effect is predictable: without deliberate exposure to high-acuity, expeditionary-relevant care, clinical readiness decays even when routine care continues.
2. Clinical readiness is distinct from competence and admin readiness—it is the measurable ability to deliver mission-relevant care under operational constraints.
3. Readiness must be managed as a system, not a single metric: knowledge, skills, and clinical activity are complementary and should be assessed together.
4. Data capture is a design choice with tradeoffs: passive feeds improve completeness and reduce burden, while structured self-report fills unavoidable gaps but requires governance and accountability to remain credible.
5. Implementation barriers are known and manageable—but they require deliberate resourcing, governance, and standardization to avoid fragmented tools and non-comparable metrics.

Questions?

Policy & Academic References (1 of 4)

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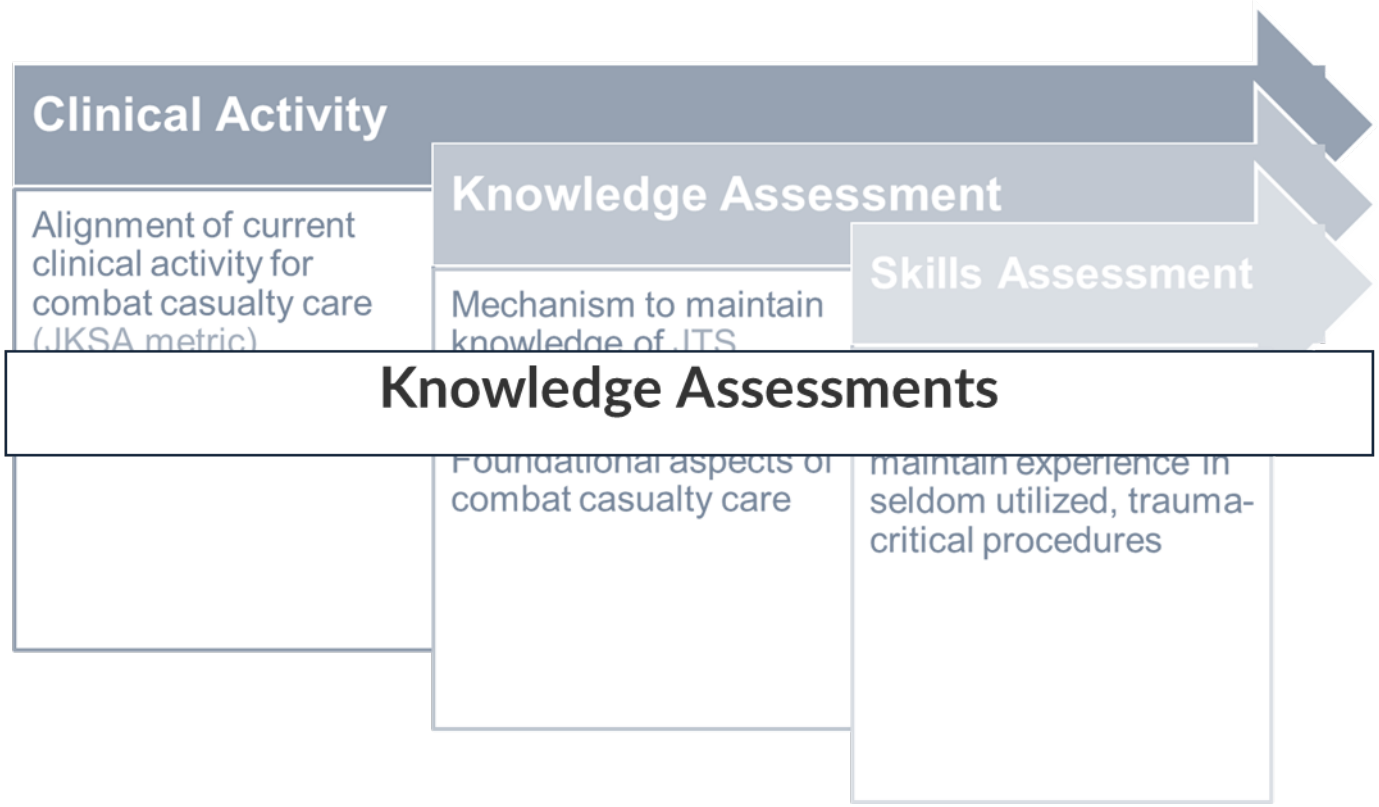

Clinical Activity
Knowledge Assessment
Skills Assessment
Alignment of current clinical activity for combat casualty care (JKSA metric)
Mechanism to maintain knowledge of JTS
Foundational aspects of combat casualty care
maintain experience in seldom utilized, trauma-critical procedures
Knowledge Assessments

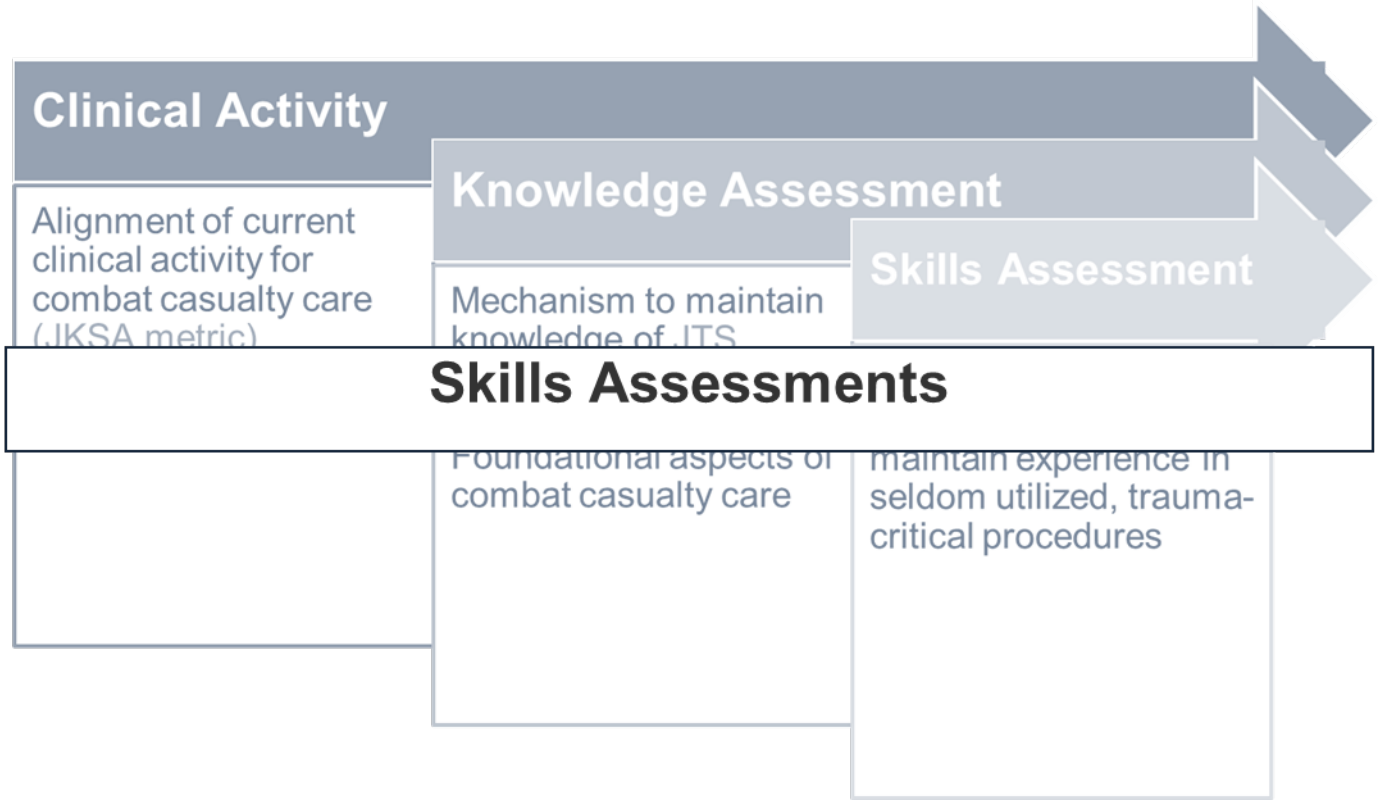
Exam Availability

- **Format**: 200 multiple choice questions
  - Free, on-demand resource for asynchronous completion
  - Assesses knowledge of specialty based on JTS CPGs
- Completion earns 102 CME (AMA PRA Category 1 Credits)
- Available Knowledge Assessments:

Register Here:

https://medschool.usuhs.edu/jksa/knowledge-assessment-courses

- Anesthesiology
- Craniomaxillofacial
- Critical Care
- Emergency Medicine
- General Surgery
- Orthopedic Surgery
- Trauma Surgery


Clinical Activity
Knowledge Assessment
Skills Assessment
Alignment of current clinical activity for combat casualty care (JKSA metric)
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Skills Assessments

Skills Assessment Availability

- ASSET+
- JOTS+ Surgical Trauma Teams
- CCTS+ Craniofacial Trauma
- CEOS+ Ocular Trauma
- COTS+ Orthopedic Trauma Surgery
- Critical Skills for Expeditionary Medicine

More information:

https://medschool.usuhs.edu/jksa/procedural-skills-courses/about