



**ARMY MEDICINE**  
*One Team... One Purpose*  
*Conserving the Fighting Strength Since 1775*

**BROOKE ARMY MEDICAL CENTER**

**Brigadier General George N. Appenzeller**

Commanding General

**Command Sergeant Major Thomas R. Oates**

Command Sergeant Major

3 December 2018



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# MISSION & VISION

## MISSION

We protect the Nation by ensuring Total Force Readiness through innovative, high quality care and the development of elite healthcare Professionals.

## VISION

To be the pinnacle of military healthcare - Anytime, Anywhere!



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# BAMC BROOKE ARMY MEDICAL CENTER



1886

**1886** First hospital built on Fort Sam Houston



1907

**1907** Station hospital built with 84 beds



1938

**1938** Original BAMC opens; named for BG Brooke in 1942

**1996** Current BAMC opens



1996



2011

**2011** Consolidated Tower opens; increases bed capacity to 483

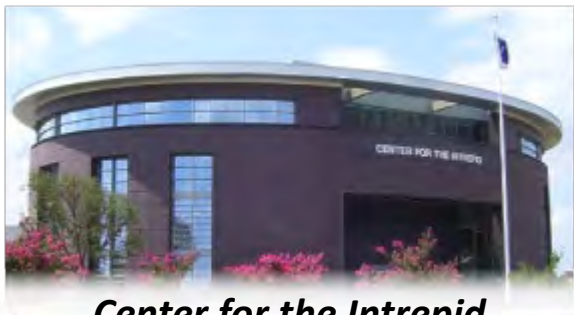




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# BROOKE ARMY MEDICAL CENTER

**Patient Centered**



*Center for the Intrepid*



*Westover Medical Home*

**Extended Hours**



*Taylor Burk Clinic*



*McWethy Troop Medical Clinic*



*Corpus Christi CC Health Clinic*



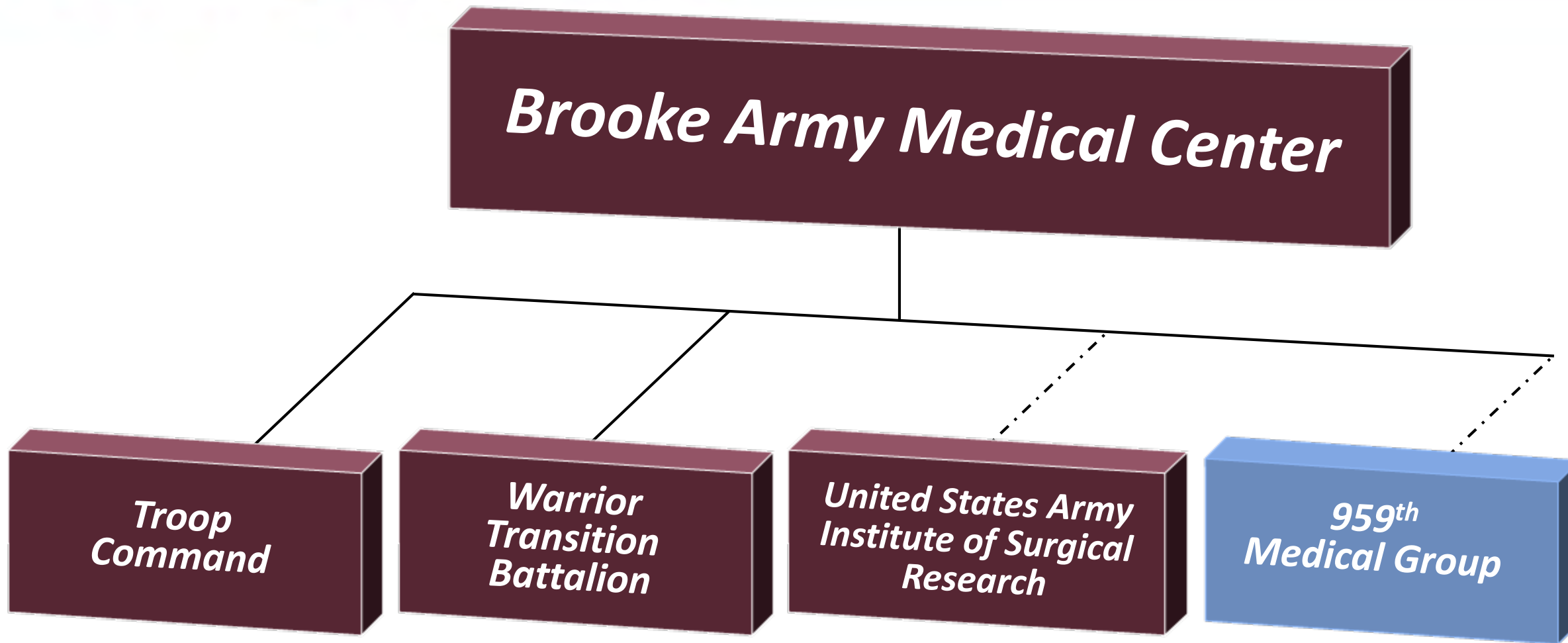
*CPT Moreno Primary Care Clinic*

**Enhanced Access**



*Schertz Medical Home*

**Increased Convenience**





# Readiness Achieved Daily

4,268  
 Outpatient Visits

65  
 Inpatient Admissions

10  
 Trauma Patients

218  
 Emergency Room Visits

12,719  
 Lab Procedures

760 Trainees

7,027  
 Meals Served

59 Surgeries

4,843  
 Prescriptions

850  
 Radiology Scans

15 Patient  
 Safety Reports

\$210,455  
 Third Party Collections

220,997 Gallons  
 Of Water Used

\$1,415,644  
 Production Value

177  
 Wounded Warriors

27,454 lbs. Log  
 Requisitions







- **Integrated staff comprised of Active Duty military, Federal Civilians & Contractors**
- **35 Primary & Specialty Care Services**
- **32 Sub-Specialty Clinics**
- **Unique Capabilities**
  - Level 1 Trauma Center
  - Extracorporeal Membrane Oxygenation (ECMO)
  - Center for the Intrepid (CFI)
  - USAISR Burn Center
  - Cancer Center
  - Autologous Bone Marrow Transplant Center
  - Virtual Medical Center (V-MEDCEN)
- **Simulation Center**
  - Accredited through both American College of Surgeons (ACS) and the Society for Simulation in Healthcare (SSH)
- **24 Main Operating Rooms plus dedicated operating room suites for OB, OMFS & Burn**
- **483 Inpatient beds**
- **3 million sq. ft. clinical/admin space**
- **66 Critical Care beds**
- **4 Fisher Houses**





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# Graduate Health Education

- **Trains 27% of Air Force GME and 20% of Army GME**
- **600 Army and Air Force residents, 100 GAHE residents**
  - EM, Surgical Specialties, Critical Care / Trauma Surgery program
  - Emergency Medicine PA, Gen Surgery PA, Ortho PA, USAGPAN, Chaplains
- **900+ medical student rotations a year (USU, HPSP, Civilian)**
- **Board pass rate exceeds national average at 96% (national average 87%)**
- **Military/Readiness curriculum (LEAD 2.0, EMX, etc.)**
- **Civilian Partnerships: Military Health Institute/UT Health, San Antonio hospital systems**
  - 28 Training Affiliation Agreements across MTFs, VAMCs, civilian hospitals
- **In the last year, the education program produced:**
  - 345 peer-reviewed publications (53% directly military-health-related topics)
  - Over 800 national or regional presentations







**15,305 student training days per year**

<b>STUDENT TYPE</b>	<b>TOTAL #</b>
<b>Registered Nurse</b>	<b>245</b>
Critical Care / Emergency Trauma	77
Peri-Operative	33
Neonatal (AF only)	3
Perinatal (AF only)	1
DNP	6
MSN	12
CNTP / NTP / NSTP	113
<b>LVN (68C)</b>	<b>100</b>
<b>Medic</b>	<b>1980</b>
Hosp Corpsman Basic	1500
4NO	480
<b>Specialty Medics</b>	<b>19</b>
Critical Care Flight Paramedic (Army only)	9
Expeditionary Combat Medic (Army only)	10

<b>STUDENT TYPE</b>	<b>TOTAL #</b>
<b>Ancillary</b>	<b>1046</b>
Surgical Tech	145
Resp Therapy Tech	120
Lab Tech	135
Cytotechnology Tech	2
Histo Technician	72
Rad Tech	64
Sonography	8
Nuc Med Tech	8
Pharm Tech	32
Phys Therapy Asst	102
Occ Therapy Asst	51
Ortho Tech	60
Neuro Diagnostic Tech	12
Beh Health Tech	144
ENT	24
Cardiovascular Tech	6
Urology Tech	10
Dental Spec	51
<b>Sustainment / Proficiency</b>	<b>181</b>



Data from FY18



**Point of Injury**



**Emergency Department**



**Surgery**



**Inpatient Ward**



**Patient injury severity at BAMC matches combat injuries**

**TCCC from point of injury to hospital evaluation & stabilization**

**Life-saving damage control surgery staged to complex reconstructive surgery**

**3% mortality - multidisciplinary care to ensure maximal functional recovery**

**Improved Explosive Device**



**Battalion Aid Station**



**Field Hospital**



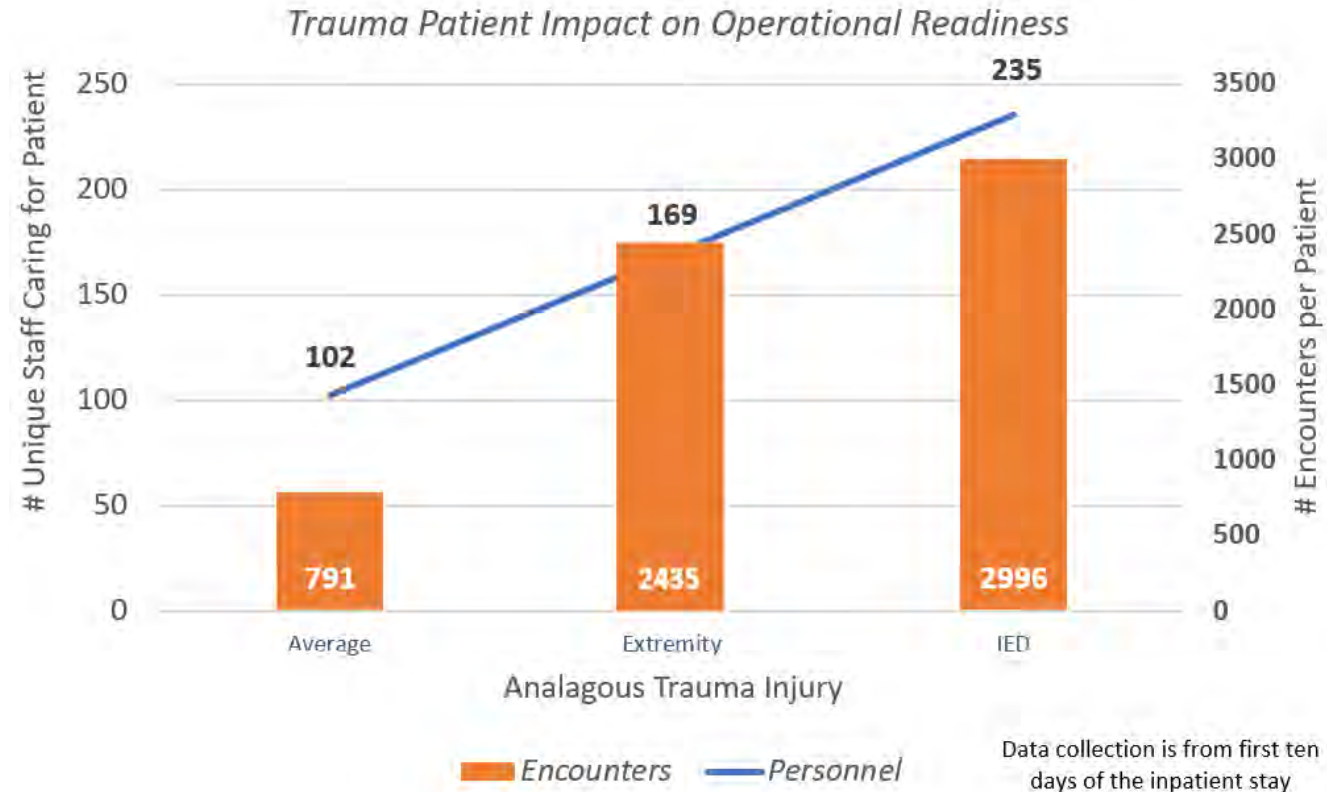
**Inpatient Ward**







- ACS Level I Trauma Center partnering with University Health System & Southwest Texas Regional Advisory Council to serve the 2.8M people in San Antonio & Southwest Texas, covering over 26,000 square miles
- Evaluates 4,500 & admits 3,200 civilian trauma patients per year sustaining readiness training for a multidisciplinary team of 3,471 Active Duty Service Members
- 2100+ trauma cases generating 7,200 OR procedures each year (84% civilian patients)
- Build “local knowledge and capacity” every day = improved combat care, national trauma care\*
- BAMC is DOD’s leading edge to Zero Preventable Deaths on the battlefield and at home\*



\*Referenced in the 2016 National Academies of Science Engineering and Medicine Report





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# ECMO

## Extracorporeal Membrane Oxygenation

- **Extracorporeal Membrane Oxygenation (ECMO)**
  - Heart-lung machine adapted for use in ICU
  - Cutting edge therapy for the most critically ill/injured
  - Proven effectiveness in combat casualties
- **BAMC ECMO Program**
  - Only ECMO program in DoD
  - Established in 2012
- **Inpatient ECMO Care**
  - Provides full spectrum of ECMO therapy (respiratory, cardiac, bridge to transplant)
  - Over 100 patients / 1500 days of ECMO therapy
  - Outcomes exceed national benchmarks
- **ECMO Transport**
  - Projects ECMO capability globally
  - 66 transports including multiple intercontinental (Iraq, Afghanistan, Japan, S Korea, Germany)
- **ECMO capability sustains operational readiness by caring for civilian patients under SECDES program**





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# CFI Center for the Intrepid

- **More than 2000 patients seen at the CFI in 8 years**
  - Complex Extremity Trauma due to explosive mechanisms and burns
  - Amputees and Limb Salvage Patients
  - Sports injuries / Trauma patients
- **Intrepid Dynamic Exoskeletal Orthosis (IDEO)**
- **\$25M in Research Funding**
- **P.O.W.E.R. Program**
  - Performance Optimization Warrior Enhanced Rehabilitation
- **Only DoD Prosthetic & Orthotic Fabrication Shop - ships to APOs in combat zones**
- **Enhances operational readiness for all services returning to duty**







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# US Army Institute of Surgical Research

## "Optimizing Combat Casualty Care"



### USAISR Burn Center

- Sole DoD Burn Center • Second in the US / 1949
- 1 of 70 ABA verified • Leaders in burn research
- Texas Regional Burn Center • Burn Flight Team

### USAISR Research

- Material solutions & knowledge • Evidence-based
- Best clinical practice • More effective combat casualty care

## 13 CAPABILITY AREAS

- Endovascular Hemorrhage Control & Resuscitation
- Clinical Division Support & Automation Research Branch
- Damage Control Resuscitation
- Coagulation & Blood
- Extremity Trauma Regenerative Medicine
- Multi-Organ Support Technology
- Tactical Combat Casualty Care
- Combat Trauma and Burn Injury
- Prolonged Field Care
- Dental & Maxillofacial Trauma
- Sensory Trauma
- Battlefield Pain Management
- Medical Effect of Directed Energy

### Combat Casualty & Burn Research



## OPERATIONALLY RESPONSIVE CLINICAL RESEARCH



**Operational Employment**

*The Essential Synergy of  
 Clinical Care  
 & Laboratory Research*



**Clinical Care & Research**





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# BAMC Cancer Center

- Enhanced clinical readiness of the entire healthcare team through complex medical and surgical care that can be directly applied to critically ill and injured on the battlefield
- Accounts for 20% of the referrals to CFI, and provides many of the long-term CFI patients
- Longest continuous accreditation held by a DoD facility by the Commission on Cancer, held since 1949
- Treat > 1000 patients with newly diagnosed cancer annually
- Commendation received from Commission on Cancer





- **59th Medical Wing (Lackland AFB)**

- Wilford Hall Ambulatory Surgical Center
- Randolph AFB Clinic

- **Medical Research and Material Command**

- Institute of Surgical Research
- Battlefield Health and Trauma Research Institute
- Burn Center

- **Medical Education and Training Campus**

- **Army Medical Department Center & School**

- **South Texas Veterans Health Care System**

- VA Polytrauma Rehabilitation Center

- **University of Texas Health Science Center**

- **University Health System**

- **Southwest Texas Regional Advisory Council on Trauma**

- **45 Training Affiliation Agreements for Nursing and Allied Health and 28 for Graduate Health Education**



Wilford Hall Ambulatory Surgical Center



Battlefield Health and Trauma Research Institute



Medical Education & Training Campus



VA Polytrauma Rehabilitation Center



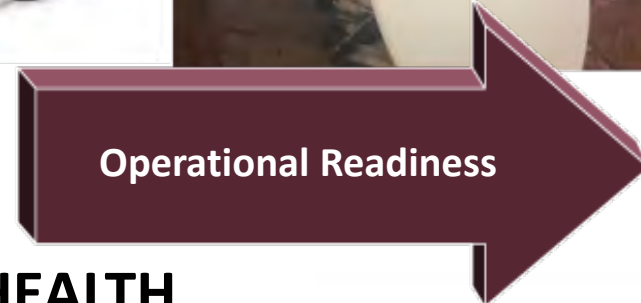
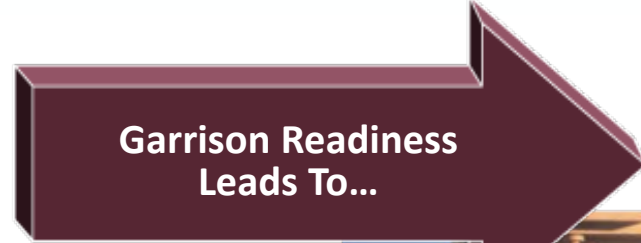


# Virtual MEDCEN Overview

*V-MEDCEN Synchronizes medical services across the Enterprise supporting garrison and operational forces anytime, anywhere.*



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**TELEHEALTH = TELEMEDICINE = VIRTUAL HEALTH**





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# Questions