

Walter Reed National Military Medical Center

Bethesda, Md.

Walter Reed Bethesda, the world's largest military medical center, located on 243 acres, with more than 2.4 million square feet of clinical space, provides care and services to nearly 1 million beneficiaries per year.

- Walter Reed Bethesda, the flagship of military medicine, also known as the President's hospital, represents hope to those who enter its doorway.
- In the fall of 2011, after the congressionally mandated integration of Walter Reed Army Medical Center (WRAMC) and the National Naval Medical Center (NNMC), NNMC was renamed Walter Reed National Military Medical Center, Bethesda, Maryland (WRNMMC).
- As the construction and renovation was completed to create the Walter Reed National Military Medical Center, all quality of care, patient and staff satisfaction, and patient safety metrics were maintained at or above national bench marks.
- Our Patient and Family Centered Medical Home care model allows patients to take charge of their health. Family centered care is also vital to the healing process for our Wounded Warriors. From the moment a wounded warrior and their loved ones arrive and throughout their recovery and follow-up care, a number of clinical therapies, lodging, transportation, resources and programs are available to help ease their stay and transition.
- We also provide 24/7 support, guidance, clothing, and necessities to our wounded warriors and their family members. Our philosophy is to lift them up and support them from the minute they arrive at Walter Reed Bethesda so that they feel as if their feet never hit the ground.
- Functionally integrated with our Air Force and Army medical counterparts, WRNMMC is a military team of care providers moving toward a new horizon in health care - one that offers synergy and revolutionary collaboration.
- As important as the brick and mortar of these buildings is, it pales in comparison to the importance of the care and compassion within them.

STATISTICS:

- 243 Acres
- 345 Total Beds
- 9,837 admissions less births (2012)
- 1,133 Total Births (2012)
- 225 Average Daily Census (2012)
- 5.2 Average Length of Stay (2012)
- 19,028 Total Emergency Department Visits (2012)

WRNMMC's primary mission is to ensure the readiness of and provide care for the Uniformed Services and their families. WRNMMC also provides care for the President and Vice-President of the United States, Members of Congress, and Justices of the Supreme Court. In addition, when authorized, WRNMMC provides care for foreign military and embassy personnel.

INTEGRATED LEADERSHIP

WRNMMC is the first Military Treatment Facility that has a Navy Admiral as the Commander and an Army Colonel as the Chief of Staff. In addition, Army, Navy, and Air Force leadership is integrated throughout the entire Chain of Command.

JOINT COMMISSION ACCREDITATION

- WRNMMC received Joint Commission accreditation in recognition of the its safe and high quality care, treatment, and services on 9 February, 2011.
- The Joint Commission accredits and certifies more than 18,000 health care organizations and programs nationwide, ensuring health care provided is safe and effective.
- Evaluating the hospital's efforts to improve performance, the Commission also reviewed more than 1,500 standards, addressing areas such as medication management, emergency management, leadership, life safety, rights and responsibilities of the individual, treatment and services, and national patient safety goals.
- The Joint Commission also returned in mid April for a one-day life-safety survey of the hospital's new spaces, and awarded WRNMMC high marks for its performance.

LEED GOLD CERTIFICATION DETAILS

WRNMMC was awarded Leadership in Energy and Environmental Design (LEED) Gold certification for the recently constructed America and Arrowhead Buildings, the second highest rating possible. The LEED building rating system promotes design and construction processes that improve the health and well-being of building occupants, as well as reducing the negative environmental impacts of new construction. The America and Arrowhead Buildings were designed to achieve a minimum of LEED Silver certification and were able to achieve the higher rating of LEED Gold by incorporating the following:

- The site storm water system is 25 percent better in preventing flooding downstream than required by code, lessening the medical center's effects on local water pollution issues.
- Covered parking and new landscaping camouflage cars and reduce the amount of hot pavement, which can upset the circadian rhythm of natural habitats and systems.
- Light pollution controls prevent the interior and exterior lighting from illuminating the night sky and unnecessarily spilling light onto adjacent plazas and buildings.
- The heating, ventilation and cooling systems incorporate cutting edge technology such as efficient lighting systems, an Enthalpy heat recovery wheel that transfers energy between exhaust and incoming outside air, and high efficiency water cooled centrifugal chillers, saving 21 percent on energy needs to heat and cool the building.
- The Enthalpy wheel also allows occupants to enjoy 100 percent fresh air, rather than the typical re-circulated air, creating a more healthful environment with fewer infection control issues.
- All interior materials were selected based on analyses of toxicity, performance and environmentally friendly attributes.

AMERICA BUILDING – OUTPATIENT FACILITY

The new America Building includes facilities for radiation oncology treatment, the Cancer Centers of Excellence, and the Military Advanced Training Center, including orthopaedics and rehabilitation, prosthetics, physical and occupational therapy; the CAREN laboratory, the Gait Laboratory, and the Fire Arms Training System; a rehabilitation swimming pool; behavioral health for adults, adolescents and children; and other outpatient clinics such as dermatology, audiology, speech, allergy/immunology, ENT, endocrinology, internal medicine, neurology, satellite laboratory/phlebotomy, satellite pharmacy, and satellite radiology.

- 515,000 sq. ft. – the largest outpatient pavilion in the Department of Defense's (DoD) inventory
- The building has 100% fresh air exchange all of the time and is 1/3 more efficient than if recycled air were used
- Light well
 - Evidence-based designed environment
 - Common way-finding area
 - Serves as a point of reference
 - Resiliency and wellness support
 - Provides natural light to the entire building

ORTHOPAEDICS AND REHABILITATION

The Department of Orthopaedics and Rehabilitation at Walter Reed National Military Medical Center is composed of seven clinical specialty services: Orthopaedic Surgery, Physical Medicine & Rehabilitation, Physical Therapy, Occupational Therapy, Orthotics & Prosthetics, Traumatic Brain Injury, and Amputee Care Services.

- It is the largest Department of its type within the DoD, providing surgical and non-surgical care in all aspects of musculoskeletal and neuro-rehabilitation to military beneficiaries, including children and retirees.
- Since September 11, 2001, the department has been heavily engaged in the comprehensive and holistic care of service members and families with combat related injuries.
- In addition, the department has robust educational and research programs, which have received national prominence in health care.
- Strong partnerships with other federal and non-federal agencies provide even greater opportunities for optimal clinical care, cutting-edge research, and advanced education.

PHYSICAL THERAPY

Physical therapists provide evaluation, diagnosis, treatment, and rehabilitation for patients who have sustained trauma and/or illness. For the patient with amputation, physical therapists employ multiple interventions focusing on the patients' interests and abilities, not their disabilities. To help patients accomplish total rehabilitation, the physical therapists provide strengthening activities, pre-prosthetic training focused on dynamic balance, proprioception, endurance, residual limb care, fit awareness, and gait training on a variety of surfaces.

Physical and occupational therapists follow the service members from their initial evaluations through their discharge from the hospital and return to active duty or civilian life.

OCCUPATIONAL THERAPY

Occupational Therapy (OT) provides recovering wounded warriors with purposeful activities designed to increase functional independence in self-care, work and leisure activities, such as bathing, dressing, cooking, shopping, childcare tasks and driving. The OT team provides evaluation and treatment for conditions including amputation, fracture, nerve injury, and soft tissue injury. Additionally, OT facilitates activities to help patients regain their range of motion, increase muscle strength, decrease pain and perform functional tasks to reach their maximum potential and independence.

GAIT LAB

The Gait Lab utilizes a large open space where patients can walk and/or run and do various forms of physical activity and range of motion exercises in order to evaluate their gait, balance, and walking patterns via Pixar type image data capture and analysis. It houses a Bertec instrumented elevating treadmill, floor embedded force plates and Vicon

motion capture cameras. All instrumentation is linked to software which provides real time data with graphic representations to the operators and therapists.

MAIN FEATURES:

- The complex biomechanics of walking and running can be recorded and analyzed.
- Rehabilitative treatments can be analyzed and compared to historical data.
- Prosthetic limbs are fine tuned and aligned to bring the patient to their most natural gait and walk cycle.
- Force plates in the floor and treadmill provide pressure data from the patients' feet which is combined with the motion capture for a comprehensive study.

CAREN LAB

The CAREN system (Computer Assisted Rehabilitation Environment) is designed by the Dutch firm Motek Medical. It consists of a circular platform with a dual belt instrumented treadmill attached to a hydraulic motion base able to provide yaw, pitch, and roll individually or in combination. The motion platform combined with a 180 degree projection screen, surround sound system, and Vicon motion capture system provide immersion into virtual environments developed to achieve rehabilitation assessments and goals.

- Virtual scenarios are developed to achieve rehabilitation goals for mobility, balance, and cognitive deficits.
- Can be used to treat a number of patient populations at various stages of their rehabilitation, including patients with amputations, traumatic brain injury, vestibular deficits, and other orthopedic and neuromuscular injuries.
- Applications are designed with immediate feedback and video game-like aspects to increase motivation and help patients look past their limitations.
- Vicon motion capture is incorporated to allow the patient to interact with and/or control the virtual environment.
- More extensive motion data can be captured with the Vicon cameras and the force plates embedded in the treadmill for evaluation and research purposes.
- There are at least 15 CAREN systems in the world, 9 that are as advanced as this system, 5 of which are in the US (all at military medical centers).
- Similar technologies are used in entertainment/animation industries.

FATS LAB

The FATS (Fire Arms Training Simulator) lab is a computer-based system designed to train students in weapons operation and proficiency. The system exposes students to realistic training situations and also provides advanced diagnostics tools for the instructor. The system includes training exercises in marksmanship and computer-

generated imagery (CGI). All exercises may be replayed to de-brief students and to critique their performance at the end of training.

- Two main features: firearms training system as well as outdoor physical training (teaching service members to sport hunt as a hobby).
- Addresses physical, cognitive, psychological and operational needs of the patient.
- Engages and benefits neuromuscular skeletal, balance, neurocognitive, visual and psychological deficits
- Prepares warriors for return to active duty or transition to civilian life.

RADIATION ONCOLOGY

The Walter Reed Bethesda Department of Radiation Oncology has the most advanced radiation treatment systems in the DoD health care system, including three linear accelerators and a brachy therapy after loader. A PET/CT scanner and 1.5 Tesla MRI provide imaging for patient studies and treatment planning.

- The linear accelerators include Tomotherapy, Varian Trilogy and Varian TrueBeam STX/BrainLab.
- Treatment planning studies provide for targeting data and electron/photon beam energy levels to be programmed into the accelerators.
- Irregular and complex tumor shapes can be localized and treated with a focused effort to induce minimal effect on adjacent healthy tissue.
- Rotating gantries deliver exposure to the target area from multiple angles. An automatically adjusting beam aperture, receiving real time target profile information from on-board imaging systems, corrects for slight changes in tumor shape due to breathing, etc. The result is a precisely sculpted beam shape and dose distribution.
- The TrueBeam STX/BrainLab system is one of a handful in the world and is the most advanced system in the field. It provides higher dose delivery rates for shorter treatment times and provides micrometer precise patient localization for head and neck stereotactic radiosurgery.
- The brachy therapy system provides for internal radiotherapy where a radiation source or seed is placed through a catheter directly into the treatment area.

AMERICA BUILDING – ADDITIONAL FEATURES

- Therapy pool used for initial physical therapy
- Four prosthetics fitting rooms
- One prosthetics adjustment lab
 - WRNMMC's prosthetics lab is the lab of choice for many prosthetics companies
- Exercise room
 - Tread wall and climbing wall
 - Indoor running track with overhead support harness

EAGLE AND ARROWHEAD BUILDINGS - INPATIENT FACILITIES

The Eagle and Arrowhead Buildings comprise the inpatient and surgical facilities for WRNMMC. There are wide-ranging services offered within the two buildings, including the Emergency Department, Intensive Care Units, Pediatric Intensive Care, Radiology, Telemetry, Maternal Infant Child Center, Neonatal Intensive Care, Neurosurgery, Pulmonary Medicine, Cardiology, Sleep Labs, Inpatient Behavioral Health, Inpatient Oncology, Ambulatory Procedures Unit, Assisted Reproductive Health and others. The building also houses the Patient Administration Office, the TRICARE Management offices and the Customer Service information desk. Other features of the buildings include:

- 50 ICU beds
 - 26 Surgical beds and 24 Medical beds
 - New Negative and Positive pressure rooms
 - Patient lifts above toilets in 1/3 of ICUs
 - Ability to connect up to 8 wound vacuums in each ICU room
- 7 Interventional Endovascular and Radiology suites
- Elevators sized to support and accommodate a full triage team's ability to simultaneously work on a patient if needed
- Evidenced based designed Family Day rooms with a refrigerator and microwave to support the Family Centered Care model
- ICU pharmacy
- Tri-Service represented and Civilian Nursing Staff
- Evidenced based design in Physician Consultation rooms

SMART SUITE TECHNOLOGY

Walter Reed Bethesda has 165 Smart Suites that enhance communication and the quality of patient care by providing information to our clinicians, patients and their families in a real time environment that augments patient recovery.

Smart Suites are currently installed in Inpatient Pediatrics, Pediatric Intensive Care, Medical/Surgical Critical Care, Medical/Surgical Inpatient Units and Inpatient Cardiology, located in the Eagle and Arrowhead Buildings of WRNMMC. Smart Suites feature "smart beds" that offer two-way communication devices, audiovisual and wireless capabilities as well as bedside entertainment, all of which can be controlled via a wall-mounted, removable keyboard that the patient has access to at all times.

The features available through the Smart Suite system are being phased in, with completion of the project scheduled for Summer 2013. Patients currently have access to features such as "myMenu", (facilitates meal selections), "myHospital" (information about the facility, its mission statements, services, and the surrounding area) and "myGames" (access to entertainment options).

In future phases, these rooms will allow providers to monitor patients' bed status, position and activity. The technology will be integrated with a clinical system, allowing nurses and physicians to view medical records and data. "myEducation" will provide patients with information about their condition, upcoming surgeries and procedures. Patients will also be able to track their personal goals and any questions they may have for their doctor through "myHealth Notes".

Digital signage will be installed outside the smart rooms. To better protect privacy, the signs will identify patients by a number, instead of by name. The signage will also help track staff and equipment in real-time, letting others outside the room know who is inside with the patient. Additionally, the signs can display "do not disturb" notes, as well as information about the patient, including blood pressure, allergies, and whether they have a visual impairment or fall risk.

NATIONAL INTREPID CENTER OF EXCELLENCE

The National Intrepid Center of Excellence (NICoE) is a facility dedicated to advancing the clinical care, diagnosis, research, and education of service members and families experiencing combat related traumatic brain injury (TBI) and psychological health (PH) conditions. The Intrepid Fallen Heroes Fund (IFHF) led the fundraising effort for the Center, securing \$65 million in private donations from the American people and overseeing the construction and equipping of the facility. NICoE was officially gifted to the Department of Defense in a dedication ceremony on June 24, 2010 and later transferred from TRICARE Management Activity's Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE) to the Department of the Navy for further alignment under the former National Naval Medical Center, effective August 10, 2010.

- 72,000 square ft.
- Driving simulator for driving rehabilitation
- CAREN (Computer Animated Rehabilitative Environment)
- FATS (Fire Arms Training Simulator)
- Virtual Iraq and Afghanistan
 - Primarily used for research to monitor psychological triggers
 - Ability to introduce smells, people and objects on the screen
- Paws for Purple Hearts
 - 6 – 7 training dogs
- Wireless internet facility
- Group setting environment for improved patient outcomes
- Art therapy – masks & music
- Healing garden
 - Evidence based design
 - Natural light
 - Offers nature sounds and music
 - Varied walking surfaces
 - Labyrinth

ADMINISTRATIVE, RESEARCH, AND FITNESS BUILDING - BLDG 17

Building 17 houses administrative spaces and research facilities as well as the recently constructed fitness center, specifically designed to support the wounded warrior and their families. The gym is also accessible by military and civilian staff at WRNMMC, in keeping with the Command's priority of sustaining a fit and healthy force.

- Historical building – 415,000 square feet
- Historical façade was preserved
- Interior reinforced to meet anti-terrorism force protection requirements
- Atrium: Evidence based design to let in natural light and provide respite, resiliency, and wellness
- Full weight room including free weights and machines
- Cardio fitness center, aerobics and spin classes
- Olympic sized, 25 by 50 meter swimming pool with full wheelchair access
- Elevated running track
- Gymnasium with volley ball and 6 basketball courts
- Hand Ball, Squash, and Racquet Ball courts
- Open-air terrace
- 570 space partially underground parking garage incorporated into the facility
- Bench top research facility

WOUNDED WARRIOR LODGING

In addition to mind and body healing, WRNMMC offers quality lodging for wounded warriors, their families, and other beneficiaries receiving treatment at WRNMMC.

TRANQUILITY HALL – BUILDING 62

Tranquility Hall is one of several outpatient barracks where wounded warriors live while continuing to heal and undergo rehabilitation at Walter Reed Bethesda. The new 306-bed, 315,000 square foot facility, features 153 two-bedroom, two-bath suites equipped with

common kitchens and seating areas, washer and dryer units, flat screen televisions and computers with printers.

Specifically tailored to meet the needs of wounded service members, Tranquility Hall features walk-in and wheelchair accessible closets and showers in each bedroom. Tranquility Hall provides a home-like environment for patients, and because of the additional bedroom, allows for multiple caregivers, such as parents, spouses, or a non-medical attendant, to stay and assist the Service member.

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The Wounded Family Coordination Cell (WFCC) is the centerpiece of this facility, and it is designed to provide the necessary nonmedical support to Wounded, Ill, and Injured Warriors and their families. Service specific as well as general and benevolent organization support is coordinated by the WFCC.

AUSTIN'S PLAYROOM (CHILDCARE FACILITY) – TRANQUILITY HALL (BLDG 62)

Also located on the ground floor is Tranquility Hall's new 2,000 sq. ft. resident childcare facility, Austin's Playroom, which offers respite care for children ages six weeks to 12 years for up to 25 hours a week.

With space for 27 children, Austin's Playroom gives priority to the children of wounded warriors, but accepts children of personnel who may need child care while they attend a medical appointment. The facility is open from 6 a.m. to 6 p.m., Monday-Friday. Parents must attend a 10-minute orientation and bring in their child's immunizations record prior to using the facility.

The Austin's Playroom project is a gift from the Mario Lemieux Foundation (MLF). Established in 1993 by former professional hockey player Mario Lemieux after his son was born premature, Lemieux, his wife, Nathalie, and Austin, came up with the idea for the project, which funds the development of playrooms for children of families with hospitalized or rehabilitating members.

COMFORT AND SOLACE HALLS

Built in 1986 and 1993 respectively, Comfort and Solace Halls were primarily Bachelor Enlisted Quarters exclusively for housing personnel working at the Medical Center. Both have since been completely renovated, and all first floor rooms are now well appointed and ADA accessible. In addition to the 168 sleeping rooms, there are also administrative and recreational spaces and underground parking for 60 vehicles.

MERCY HALL

Renovated in 2008 to improve the quality of life for its residents, Mercy Hall provides 98 ADA compliant single-bed rooms and a Fleet and Family Support Office, a communal

laundry room, a lounge area and an intercom system in the event of a medical emergency.

Directly behind Mercy Hall is a tranquil outdoor seating area where Wounded Warriors can take in fresh air, enjoy a barbeque, or chat with their loved ones.

SANCTUARY HALL

This facility is currently under construction. After completion will be a 200-bed ADA compliant housing facility located in a secluded area on base. Sanctuary Hall will be a mixture of 150 single-occupancy rooms and 25 two bedroom suites (50 beds total), with the built in flexibility to house wounded warriors and their extended families. The facility will include a communal laundry room, day room and a communal kitchen. In addition, warriors will have access to the adjacent parking garage (also currently under construction) that will accommodate approximately 460 vehicles.

Service members are welcome to stay at the lodging facilities until they're medically cleared to go back to their unit, receive their physical evaluation board findings, or transition into active reserves.

FISHER HOUSES

Additional lodging for Wounded Warriors and their family members is provided by the five Fisher Houses located on base, the greatest number of Fisher Houses on any one base within the DoD system. The Fisher Houses at Naval Support Activity Bethesda provide military families with 68 handicapped accessible suites, 20 of which are private, at no cost to them while their loved ones are undergoing treatment. Patients who have been medically cleared may also stay at the Fisher Houses.

Each Fisher House includes a common area, communal dining, family rooms and play rooms for children.

NAVY LODGE

Operating under the Navy Exchange Service Command, the Navy Lodge offers 106 guest rooms for service members funded by their service if they have a medical appointment or are Temporary Additional Duty, Permanent Change of Station or Temporary Duty.

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