



2013 Command Accomplishments

U.S. Army Medical Research and Materiel Command



Infectious Diseases

- Fielded four products to diagnose, detect and protect service members from infectious diseases, including a Rift Valley Fever Virus Antigen Assay Kit, Arthropod Vector Rapid Detection Device for Dengue, Combined Camo Face Paint, and Alternate Repellent System (MIDRP)
- Approved through FDA the use throughout DoD Medical Treatment Facilities of a combo cream, Topical Paromomycin and Gentamicin, for the treatment of cutaneous Leishmaniasis, which has affected more than 3,000 U.S. service members since 2003 and millions of people in 98 countries worldwide (USAMMDA)
- Reported first-ever study of a successful vaccination against malaria, where six out of six subjects were protected from Plasmodium falciparum malaria by intravenous immunization of irradiation-attenuated sporozoites (MIDRP)
- Completed a three-year Phase 3 malaria vaccine trial of RTS, S/AS01E in children and infants in Kombewa, Kenya, one of 11 sites in this multi-center study conducted in seven African nations that evaluated the safety and efficacy of this vaccine to provide data for the World Health Organization and African nations regarding the potential for large scale implementation (WRAIR/USAMRU-K)
- Completed a study that showed bioinformatically optimized HIV vaccine antigens -- known as "mosaic" antigens -- might be useful in the design of a global HIV vaccine (MIDRP)
- Completed a study to define how the first efficacious HIV vaccine (RV144) prevented infection and will use results to improve the design/regimen of the next generation HIV vaccine candidates (WRAIR)
- Developed a viral pathogen sequencing and bioinformatics center to sequence and analyze viruses that are used in risk assessments that help determine next year's influenza vaccine (WRAIR)



Combat Casualty Care

- Received FDA approval for the SOLX® System, a new whole blood collection system that produces Leukoreduced red blood cells and plasma. Red blood cells produced by this system demonstrate improved cell quality for a storage period of 42 days, theoretically reducing complications that may be associated with red blood cell storage lesions, and improving the safety and efficacy of therapeutic transfusions (USAMMDA)
- Identified a refrigeration process that doubles platelet shelf life and may also show that platelets stored this way are more effective and safer to use (USAISR)
- Partnered with the French Armed Forces to field Freeze Dried Plasma, resulting in a French-manufactured product being fielded by U.S. forces leading to lives saved on the battlefield (USAISR)
- Completed successful Phase 2 clinical trial for a new battlefield pain management drug, based on sublingual sufentanil. Moving towards development of drug with greater efficacy and reduced side effects compared with I.M. morphine (CRM/RP/USAMMDA)
- Fielded the Impedance Threshold Device used in the treatment of casualties on the battlefield and partnered with the San Antonio emergency medical system to deploy these devices in ambulances to study their use in civilian trauma patients (USAISR)
- Established a joint educational conference with the Joint Trauma Service that, for the first time, provides timely feedback to the field regarding battlefield casualties (AFMES)
- Managed the Combat Casualty Training Consortium, whose preliminary findings show promise in understanding and addressing current gaps in military trauma training (JPC1/TACTC)
- Supported and managed the upper multiple amputee trauma trainer, now commercially available through the name AirwayPlus Lifecast Upper Torso Trainer, which addresses many current combat training needs (JPC1/TATRC/ARL-STTC)
- Supported and managed the rapid trauma trainer developed by Operative Experience now commercially available through North American Rescue. The latest model includes emergency thoracotomy with models of the heart, mediastinum, and great vessels (JPC1/ TATRC/SBIR)

Burn Care

- Developed and fielded the Burn Resuscitation Decision Support System - Mobile, also known as the Burn Navigator, earning the Army Surgeon General's Wolf Pack Award (USAISR/CCCRP)
- Initiated DoD's first Material Solution Analysis for a regenerative medical advanced development capability for Skin Repair, an advanced development effort that aims to deliver new capabilities to wounded warriors suffering burns or skin trauma (USAMMDA)

Flight Medicine

- Received approval for full-rate production of the Noise Immune Stethoscope, which will be issued to flight medics for use in MEDEVAC helicopters (USAARL/CCCRP)
- Published research showing the benefit of tactile displays for controlling helicopters in a degraded visual environment, for shipboard landings, by sleep-deprived aviators, and over long-duration helicopter missions. Tactile displays are a viable option for military aircrew and are under consideration for Army acquisition (USAARL)
- Acquired a material development decision and approval to enter into the technology development phase for the Transport Telemedicine System, which collects patient encounter information from medical devices and flight medics through voice data entry, and then transmits it from air ambulances to ground stations, enabling better medical situation awareness of patients at receiving facilities (USAMMA)

Blast Injuries

- Developed and implemented the Blast Injury Prevention Standards Recommendation Process for identifying and assessing Military Health System Blast Injury Prevention Standards that play a critical role in preventing warfighter injuries and enhancing of warfighter survivability (Blast Injury Program)
- Conducted calibration testing on a newly constructed Vertical Acceleration Tower, a facility unique to the DoD that will enable research using human surrogates to protect vehicle occupants from devastating underbody blast injuries (USAARL)
- Chaired two meetings of the NATO Human Factors and Medicine Technical Group on the Environmental Toxicology of Blast Exposures and developed a Program of Work outlining activities over its three-year duration, including creating a dictionary of commonly used blast injury research terms and recommendations for Blast Injury Epidemiological Study Data Collection Guidelines (Blast Injury Program)

Brain Injuries

- Completed a pivotal study in collaboration with the Auburn University MRI Research Center correlating brain imaging to blood biomarkers in soldiers suffering the effects of post-concussive syndrome, traumatic brain injury, and Post-Traumatic Stress Disorder (USAARL)



- Transitioned the Automated Binocular Vision Tester to the Army Surgeon General with recommendations for mild TBI assessment due to research showing the utility of ABVT assessment in detecting oculomotor and pupillary changes that indicate brain damage due to blast and blunt head injury (USAARL)

Behavioral Health

- Partnered with Veterans Affairs Office of Research and Development to execute and manage two collaborative, multi-institutional consortia focused on improving diagnosis and treatment for post-traumatic stress disorder, the Consortium to Alleviate PTSD, and mild traumatic brain injury, the Chronic Effects of Neurotrauma Consortium (CDMRP)
- Developed and disseminated 14 clinical support tools to address PTSD, substance use disorder, opioid therapy for pain management, vestibular and visual dysfunction following mild traumatic brain injury, and neuroimaging in mild traumatic brain injury. These tools are designed to inform health care providers of evidence-based practices in order to standardize and improve health care delivery (DCoE)
- Commissioned RAND Corporation to develop an innovative practices tool kit, which consists of four tools to assist program managers of psychological health initiatives to codify, evaluate, manage, and set future directions of activities that they oversee (DCoE)
- Initiated a PTSD Care Pathway Pilot to create an Military Health System-wide roadmap to implement measures addressing process, outcomes, cost, patient/command satisfaction, and structured documentation to monitor the entire PTSD care pathway. The PTSD Care Pathway Treatment Module was mapped to the already existing Tri-Service Work Flow Alternate Input Method Form for behavioral health (DCoE)
- Co-authored practice guidelines for the provision of mental health services provided by a licensed health care professional when using real-time videoconferencing services transmitted via the Internet (DCoE)

Readiness & Environmental Medicine

- Assessed physical performance tests and standards for combat-related military occupational specialties to develop new gender neutral tests and standards (USARIEM)
- Moved into advanced development the Environmental Sentinel Biomonitor, a toxicity sensor for field drinking water (USACEHR)
- Published the first models predicting the incidence and severity of acute mountain sickness for personnel rapidly ascending to terrestrial altitudes between 2,000 to 4,500 m, providing first-ever quantitative assessment of AMS risk and severity for mission planning (USARIEM)
- Identified via the Biomarker Program potential mechanisms of toxicity related to metal toxicant and organophosphate pesticide exposures in both in vitro and in vivo models (USACEHR)
- Partnered with Norwegian Defence Research Establishment to study the physiological and behavioral consequences of a Norwegian Army winter training exercise, which demonstrated sustained physical training under environmental extremes caused significant caloric deficit and loss of body weight, increased inflammation and muscle damage, and decrements physical and cognitive performance. These findings establish the basis for future studies designed to identify optimal nutritional strategies to sustain metabolic homeostasis and promote recovery from operational stress (USARIEM)
- Studied the benefits of supplemental calcium and vitamin D during Army and Air Force initial military training and found that preliminary data suggests supplemental calcium and vitamin D led to improved nutritional status and stronger bones (USARIEM)
- Prepared tools and training materials for the sleep portion of the Performance Triad (Nutrition, Activity and Sleep) for the Army Office of the Surgeon General (WRAIR)

Regenerative Medicine

- Performed the first-ever double hand transplantation procedure on a combat wounded quadruple amputee at Johns Hopkins University (CRM RP/AFIRM)
- Demonstrated the first neural-controlled lower extremity prosthesis and contributed to the success of the world's first thought-controlled bionic leg, in partnership with the Rehabilitation Institute of Chicago (CRM RP/TATRC)
- Awarded the Armed Forces Institute of Regenerative Medicine: Warrior Restoration Consortium Cooperative Agreement to Wake Forest University, a 5-year effort to develop therapies in skin, extremity, genitourinary, and craniofacial repair, and tissue transplantation (USAMMDA)
- Announced eight cooperative agreements to two consortia, Emory University and Johns Hopkins University, in support of the Restorative Transplantation Research Program (USAMMDA)



- Announced the completion of human efficacy and tolerability studies for the Embrace™ Advanced Scar Therapy, leading to the commercial launch of the first bandage to reduce scarring (CRM RP/AFIRM)

Biodefense

- Expanded DoD's options to treat smallpox with no-cost procurement of tecovirimat (Arestyvir; ST-246), an orally administered treatment used by the Centers for Disease Control and stored in the Strategic National Stockpile that provides a rapid treatment capability of exposed U.S. Forces (USAMMDA)
- Demonstrated promise for developing therapies against the deadly Ebola virus following onset of symptoms, resulting in a 43 percent recovery rate in non-human primates. The work, published in Science Translational Medicine, shows possibilities for developing therapies against the virus, which causes hemorrhagic fever with human case fatality rates as high as 90 percent (USAMRIID)
- Spearheaded the advanced development of a lead ricin vaccine candidate and completed the first round of Phase I clinical trials. This vaccine will directly impact the ability of the Department of Defense to protect its members against exposure to this rapidly fatal toxin (USAMRIID)
- Unveiled a state-of-the-art multi-station glovebox with an automatic vapor decontamination system that is the new centerpiece of its Inhalation Core Center, a customer-driven, broadly capable center for toxicant gas, vapor, and aerosol research (USAMRICD)
- Built a Proteomics Core Facility, in collaboration with the U.S. Army Edgewood Chemical Biological Center, allowing scientists to focus their research efforts toward a thorough, foundational knowledge and understanding of the toxicology of chemical agents, toxic industrial chemicals, and toxins (USAMRICD)
- Developed a program with funding from the U.S. Army Medical Materiel Agency to test commercial wound-healing products related to chemical biological defense, for use in the field (USAMRICD)

Acquisition, Materiel & Logistics

- Closed-out FY13 for its Defense Logistics Agency Defense Working Capital Fund with more than \$21M in sales of Class VIIIa to more than 260 joint customers, contributing to the medical readiness of USFK forces in providing critical CL VIIIa supplies to both armistice and "Fight Tonight" preparedness missions (USAMMC-K)
- Procured and fielded more than \$77M in medical materiel set kits, outfits, and medical equipment to more than 335 FORSCOM, USARC and National Guard TO&E units in various stages of the ARFORGEN cycle, enhancing and sustaining readiness (USAMMA)
- Executed Depot and Field Level Medical Maintenance support to the force, completing more than 4,800 equipment work orders and rebuilding more than 1,300 pieces of equipment which avoided approximately \$7.7M in new procurement costs (USAMMA)
- Assisted customers by adding items into the standardized process and providing information on compliant items, supporting ongoing improvement process which has resulted in ERMC achieving an 83 percent compliance rate last quarter, leading the MEDCOM in this initiative (USAMMCE)
- Participated in the User Acceptance Test of TMIO Intermediate Logistics-Supply at Fort Hood, Texas (6th MLMC)
- Hosted the Defense Medical Readiness Training Institute's 3-day Medical Stability Operations Course, allowing 36 military and civilian personnel across MRMCM to receive training on planning for Medical Health Support for Stability Operations (6th MLMC)
- Instituted a hybrid, customer and commodity focused organizational structure. Relocated several staff members to customer locations to help customers improve their acquisition processes and enhance their understanding of regulations. Aligned remaining staff in the Operations Division under three commodity groups, including Services, Materiel and Assistance Agreements. This effort reduced the supervisor-to-staff ratio allowing for improved technical oversight and customer relations (USAMRAA)

International Affairs

- Supported CENTCOM with three separate missions to the Middle East and PACOM by training both U.S. and Korean soldiers. U.S. Syrian Chemical Demilitarization effort is being supported through training and education (USAMRICD)
- Increased engagement with the Combatant Commands, particularly with the United States Africa Command, supporting various exercises within AFRICOM with Class VIII and medical maintenance support, as well as providing mission support to the Special Operations community (USAMMCE)
- Coordinated and oversaw the planning, receipt, distribution, and storage of 42,150 doses of influenza vaccine, ensuring Eighth Army and U.S. Forces Korea on the Korean peninsula received allocated doses for immunization. Provided this same service to the U.S. embassies in Korea, Thailand and Mongolia (USAMMC-K)



- Supported the U.S. Army Security Assistance Command in managing the medical commodity for Foreign Military Sales program which managed 48 cases valued in excess of \$82M, providing medical equipment and supplies to 43 different countries around the globe (USAMMA)
- Served as Theater Lead Agent for Medical Materiel for U.S. Forces Korea, supported Ulchi Freedom Guardian and Key Resolve annual combined exercises, which are critical alliance exercises on the Korean peninsula to sustain the readiness of the Republic of Korea, U.S. Forces and the "Sending State" Forces (USAMMC-K)
- Participated in Joint Task Force validation Exercise Vibrant Response and Exercise Ulchi Freedom Guardian (6th MLMC)
- Partnered with Republic of Korea Army Armed Forces Medical Command on the AFMC Medical Logistics Working Group to foster an alliance between U.S. and ROK healthcare systems. Served as an active member of the AFMC Medical Logistics Working Group. Working in this capacity briefed AFMC leadership of TLAMM capabilities and hosted AFMC stakeholders at USAMMC-K's Camp Carroll-based facilities (USAMMC-K)
- Deployed 12th and 13th Detachments in support of the U.S. Central Command U.S. Army Medical Materiel Center-Southwest Asia mission supporting Operation Enduring Freedom (6th MLMC)

Forensics and Toxicology Science

- Conducted more than 450 medicolegal death investigations, including more than 100 investigations on service members and DoD employees who died in support of Operation Enduring Freedom (AFMES)
- Designed, equipped and staffed DoD's first certified synthetic cannabinoid/designer cathinon (Spice/bath salts) identification laboratory. Operational within a three-month period, the effort reduced the Department of the Navy's designer drug detection budget by 50 percent and positioned the division at the forefront of DoD's synthetic drug deterrent effort (AFMES)
- Evaluated the use and potential adverse events associated with the dietary supplement DMAA among deceased service members, and served as co-authors of the DoD Safety Review Panel Report on DMAA ordered by the Assistant Secretary of Defense for Health Affairs (AFMES)

- Developed and validated a "Low Copy number Y short tandem testing procedure" to successfully obtain DNA results – a procedure that is particularly valuable for obtaining DNA results from those unaccounted for from World War II, Korea and Vietnam (AFMES)

Cancer Research

- Supported the discovery of a new drug (PD-0332991) that inhibits breast cancer and improves patient survival, leading to FDA "Breakthrough Therapy" status and a Phase III clinical trial supported by Pfizer (CDMRP)
- Changed the standard of care in Australia by finding that 44 percent of 141 women with nonmucinous ovarian tumors carrying BRAC1/2 mutations did not have a family history of ovarian cancer or breast cancer (CDMRP)
- Played a critical role in accelerating FDA approval of two new drugs now in clinical use including ZYTIGA and XTANDI for the treatment of metastatic, castration-resistant prostate cancer (CDMRP)

Educational Outreach

- Debuted a temporary exhibition of never-before-seen-in-public photographs and histologic slides of the brain of Professor Albert Einstein from the collected materials of the pathologist Thomas Harvey, MD, who performed Einstein's autopsy in 1955. The installation featured a one-of-a-kind large-format interactive virtual microscope that presented high-resolution digital images of the Einstein brain sections (NMHM)
- Hosted 1,508 student interns, 50 near-peer mentors, 30 assistant near-peer mentors, and 13 resource teachers as part of the Gains in the Education of Mathematics and Science program (USAMRMC GEMS)
- Installed numerous temporary exhibitions including a major photographic installation at the new Defense Health Headquarters in Falls Church, Va.; recurring installations at USAMRMC headquarters at Fort Detrick, Md.; and the art exhibition "WHACK'ed ... and then everything was different" by artist Eliette Markbein featuring portraits of traumatic brain injury survivors (NMHM)
- Offered recurring public programs including Civil War Living History; Anatomy of Sports; Teddy Bear Clinic; Halloween/Skull Day; Medical Museum Science Café; Organ of the Month; Forensic Fridays (NMHM)

Safety

- Implemented the Department of Defense Voluntary Protection Program, leading to a 20 percent drop in preventable injuries and illnesses (USAMMCE)
- Received the Voluntary Protection Program Army Star Status, becoming the first unit on the Korean peninsula to achieve this certification (USAMMC-K)

USAMRMC

USAMRMC Headquarters, (301) 619-2736,
<https://mrmc.amedd.army.mil>

U.S. Army Aeromedical Research Laboratory (USAARL),
(334) 255-6883, <http://www.usaarl.army.mil>

U.S. Army Institute of Surgical Research (USAISR),
(210) 916-3219, <http://www.usaisr.amedd.army.mil>

U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), (410) 436-3276, <http://chemdef.apgea.army.mil>

U.S. Army Center for Environmental Health Research (USACEHR), (301) 619-7685,
<http://usacehr.amedd.army.mil>

U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), (301) 619-2285,
<http://www.usamriid.army.mil>

U.S. Army Research Institute of Environmental Medicine (USARIEM), (508) 233-4811, <http://www.usariem.army.mil>

Walter Reed Army Institute of Research (WRAIR),
(301) 319-9471, <http://www.wrair.army.mil>

U.S. Army Medical Materiel Development Activity (USAMMDA), (301) 619-7643,
<http://www.usammda.army.mil>

U.S. Army Medical Materiel Agency (USAMMA),
(301) 619-7461, <http://www.usamma.army.mil>

U.S. Army Medical Materiel Center-Europe (USAMMC-E),
011-49-633-186-6426, <http://usammce.amedd.army.mil>

U.S. Army Medical Materiel Center-Korea (USAMMC-K),
011-82-54-970-8365, <http://usammc-k.amedd.army.mil>

U.S. Army Medical Research Acquisition Activity (USAMRAA), (301) 619-2183, <http://www.usamraa.army.mil>

6th Medical Logistics Management Center (6MLMC),
(301) 619-7488, <http://6mlmc.amedd.army.mil>

Armed Forces Medical Examiner System (AFMES),
(302) 346-8648 <http://www.afmes.mil>

National Museum of Health and Medicine (NMHM),
(301) 319-3349, <http://www.medicalmuseum.mil>

Congressionally Directed Medical Research Programs (CDMRP), (301) 619-7071, <http://cdmrp.army.mil>

Telemedicine and Advanced Technology Research Center (TATRC), (301) 619-7927, <http://www.tatrc.org>

Defense Centers of Excellence (DCoE), (800) 510-7897,
<http://dcoe.mil>