

# United States Air Force

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Presentation

Before the Senate Appropriations  
Subcommittee on Defense

## ***Medical Programs***

Witness Statement of Lieutenant General  
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Surgeon General

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“Trusted Care Anywhere” is the Air Force Medical Service’s vision for 2010 and beyond. In the domain of Air, Space and Cyberspace, our medics contribute to the Air Force, Joint, and coalition team with world class medical capabilities. Our 60,000 high performing Total Force medics around the globe are trained and ready for mission success. Over 1,600 Air Force medics are now deployed to 40 locations in 20 countries, building partnership capability and delivering state of the art preventive medicine, rapid life-saving care, and critical air evacuation. In all cases, these efforts are conducted with joint and coalition partners. At home, our health care teams assure patient-centered care to produce healthy and resilient Airmen, and provide our families and retirees with full spectrum health care.

Today’s focus is on world-class health care delivery systems across the full spectrum of our operations. From theater hospitals in Balad and Bagram, to the efforts of humanitarian assistance response teams, to the care of our families at home, we put patients first. We are transforming deployable capabilities, building patient-centered care platforms, and investing in our people, the foundation of our success. We are expanding collaboration with joint and coalition partners to collectively strengthen rapid response capabilities. Globally, Air Force medics are diligently working to balance the complex demands of multiple missions in current and expanding areas of operations.

We are committed to advancing capabilities through education and training, research, and infrastructure recapitalization. Recent efforts in these areas have paid huge dividends, establishing new standards in virtually every major category of full spectrum care including humanitarian assistance. The strategic investments assure a trained, current, and deployable medical force today and tomorrow. They reinforce a culture of learning to quickly adapt medical

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systems and implement agile organizations to produce healthier outcomes in diverse mission areas.

While we've earned our Nation's trust with our unique capabilities and the expertise of our people, we constantly seek to do better! I would like to highlight our areas of strategic focus and share some captivating examples of Air Force medics in action.

### **Transforming Expeditionary Medicine and Aeromedical Evacuation Capabilities**

Our success on the battlefield underscores our ability to provide "Trusted Care, Anywhere." The joint and coalition medical teams bring wounded warriors from the battlefield to an operating room within an unprecedented 20 to 40 minutes! This rapid transfer rate enables medics to achieve a less than 10 percent died-of-wounds rate, the best survival rate ever seen in war.

In late July, a British soldier sustained multiple gunshot wounds in Afghanistan. After being stabilized by medical teams on the ground, who replaced his blood supply more than 10 times, doctors determined the patient had to be moved to higher levels of care in Germany. It took two airplanes to get the medical team and equipment in place, another aircraft to fly the patient to Germany, three aircrews and many more personnel coordinating on the ground to get this patient to the next level of care. Every member of the joint casualty care and aeromedical evacuation teams selflessly gave their all to ensure this soldier received the compassionate care he deserved. After landing safely at Ramstein Air Base in Germany, the soldier was flown to further medical care at a university hospital by helicopter. This case highlights the dedication and compassion our personnel deliver in the complex but seamless care continuum. This tremendous effort contributes to our unprecedented survival rate.

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As evidenced in this story, our aeromedical evacuation system (AE) and critical care air transport teams (CCATT) are world-class. We mobilize specially trained flight crews and medical teams on a moment's notice to transport the most critical patients across oceans. Since November 2001, we have transported more than 70,000 patients from Afghanistan and Iraq.

We are proud of our accomplishments to date, but strive for further innovation. As a result of battlefield lessons learned, we have recently implemented a device to improve spinal immobilization for AE patients that maximizes patient comfort and reduces skin pressure. We are working toward an improved detection mechanism for compartment syndrome in trauma patients. The early detection and prevention of excess compartment pressure could eliminate irreversible tissue damage for patients. In February 2010, a joint Air Force and Army team will begin testing equipment packages designed to improve ventilation, oxygen, fluid resuscitation, physiological monitoring, hemodynamic monitoring and intervention in critical care air transport.

### **Information Management/Information Technology**

Our Theater Medical Information Program Air Force (TMIP AF) is a software suite that automates and integrates clinical care documentation, medical supplies, equipment, and patient movement. It provides the unique capabilities for in-transit visibility and consolidated medical information to improve command and control and allow better preventive surveillance at all Air Force deployed locations. This is a historic first for the TMIP AF program.

Critical information is gathered on every patient, then entered into the Air Force Medical Service (AFMS) deployed system. Within 24 hours, records are moved and safely stored at

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secure consolidated databases in the United States. During the first part of 2010, TMIP AF will be utilized in Aeromedical Evacuation and Air Force Special Operations areas.

### **Expeditionary Medicine and Humanitarian Assistance**

We have also creatively developed our Humanitarian Assistance Rapid Response Team (HARRT), a Pacific Command (PACOM) initiative, to integrate expeditionary medical systems and support functions. The HARRT provides the PACOM Commander with a rapid response package that can deploy in less than 24 hours, requires only two C-17s for transport and can be fully operational within hours of arrival at the disaster site. This unique capability augments host nation efforts during the initial stages of rescue/recovery, thus saving lives, reducing suffering, and preventing the spread of disease. So far, HARRT successfully deployed on two occasions in the Pacific. Efforts are underway to incorporate this humanitarian assistance and disaster relief response capability into all AFMS Expeditionary Medical System (EMEDS) assets.

Air Force medics contribute significant support to the treatment and evacuation of Haiti earthquake victims. The Air Force Special Operations Command sent 47 medics to support AFSOC troops on the ground within 12 hours following the disaster to perform site assessments, establish preventive public health measures, and deliver life-saving trauma care to include surgical and critical care support. This team was also instrumental in working with Southern Command and Transportation Command to establish a patient movement bridge evacuating individuals from Haiti via air transport.

As part of the U.S. Air Force's total force effort, we sent our EMEDS platform into Haiti and rapidly established a 10-bed hospital to link the hospital ship to ground operations. The new EMEDS includes capabilities for pediatrics, OB/GYN and mental health. Personnel from five

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Air Force medical treatment facilities (MTFs) are supporting Operation Unified Response, as well as volunteers from the Air Reserve Forces.

### **Build Patient-Centered Care and Focus on Prevention to Optimize Health**

We are committed to achieving the same high level of trust with our patients at home through our medical home concept. Medical home includes initiatives to personalize care, and to improve health and resilience. We are also working hard to optimize our operations, reduce costs and improve patient access. We partner with our federal and civilian colleagues to continuously improve care to all our beneficiaries.

#### **Family Health Initiative**

To achieve better health outcomes for our patients, we implemented the Family Health Initiative (FHI). FHI mirrors the American Academy of Family Physicians' "Patient Centered Medical Home" concept and is built on the team-approach for effective care delivery. The partnership between our patients and their health care teams is critical to create better health and better care via improved continuity, and reduce per capita cost.

Our providers are given full clinical oversight of their care teams and are expected to practice to the full scope of their training. We believe the results will be high quality care and improved professional satisfaction. Two of our pilot sites, Edwards AFB, CA., and Ellsworth AFB, SD, have dramatically improved their national standings in continuity, quality, access to care, and patient satisfaction. Eleven other bases are implementing Medical Home, with an additional 20 bases scheduled to come on-line in 2010.

We are particularly encouraged by the results of our patient continuity data in Medical Home. Previous metrics showed our patients only saw their assigned provider approximately 50

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percent of the time. At Edwards and Ellsworth AFBs, provider continuity is now in the 80-90 percent range.

We still have work to do, such as developing improved decision support tools, case management support, and improved training. Implementing change of this size and scope requires broad commitment. The Air Force Medical Service has the commitment and is confident that by focusing on patient-centered care through Medical Home, we will deliver exceptional care in the years ahead.

The Military Health System's Quadruple Aim of medical readiness, population health, experience of care and per capita cost serves us well. Patient safety remains central to everything we do. By focusing on lessons learned and sharing information, we continually strive to enhance the safety and quality of our care. We share our clinical lessons learned with the Department of Defense (DoD) Patient Safety Center and sister Services. We integrate clinical scenarios and lessons learned into our simulation training. We securely share de-identified patient safety information across the Services through DoD's web-based Patient Safety Learning Center to continuously improve safety.

### **Improving Resilience and Safeguarding the Mental Health of Our Airmen**

Trusted care for our beneficiaries includes improving resilience and safeguarding their mental health and well-being. We are engaged in several initiatives to optimize mental health access and support.

Air Force post-deployment health assessment (PDHA) and post-deployment health re-assessment (PDHRA) data indicates a relatively low level of self-reported stress. However, about 20-30 percent of service members returning from OIF/OEF deployments report some form

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of psychological distress. The number of personnel referred for further evaluation or treatment has increased from 25 percent to 50 percent over the past four years, possibly reflecting success in reducing stigma of seeking mental health support. We have identified our high-risk groups and can now provide targeted intervention and training.

We recently unveiled "Defenders Edge," which is tailored to security forces Airmen who are deploying to the most hostile environments. This training is intended to improve Airmen mental resiliency to combat-related stressors. Unlike conventional techniques, which adopt a one-on-one approach focusing on emotional vulnerability, "DEFED" brings the mental health professional into the group environment, assimilating them into the security forces culture as skills are taught.

Airmen who are at higher risk for post traumatic stress are closely screened and monitored for psychological concerns post-deployment. If treatment is required, these individuals receive referrals to the appropriate providers. In addition to standard treatment protocols for post traumatic stress disorder (PTSD), Air Force mental health professionals are capitalizing on state-of-the-art treatment options using Virtual Reality. The use of a computer-generated virtual Iraq in combination with goggles, headphones, and a scent machine allow service members to receive enhanced prolonged exposure therapy in a safe setting. In January 2009, 32 Air Force Medical Service therapists received Tri-Service training in collaboration with the Defense Center of Excellence at Madigan Army Medical Center. The system was deployed to eight Air Force sites in February 2009 and is assisting service members in the treatment of PTSD.

Future applications of technology employing avatars and virtual worlds may have multiple applications. Service member and family resiliency will be enhanced by providing pre-



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and post-deployment education; new parent support programs may offer virtual parent training; and family advocacy and addiction treatment programs may provide anger management, social skills training, and emotional and behavioral regulation.

**Rebuilding Our Capabilities by Recapturing Care and Reducing Costs**

Our patients appropriately expect AFMS facilities and equipment will be state-of-the art and our medical teams clinically current. They trust we will give them the best care possible. We are upgrading our medical facilities and rebuilding our capabilities to give patients more choice and increase provider satisfaction with a more complex case load. In our larger facilities, we launched the Surgical Optimization Initiative, which includes process improvement evaluations to improve operating room efficiency, enhance surgical teamwork, and eliminate waste and redundancy. This initiative resulted in a 30 percent increase in operative cases at Elmendorf AFB, Alaska, and 118 percent increase in neurosurgery at Travis AFB, California.

We are engaged in an extensive modernization of Wright-Patterson Air Force Base Medical Center in Ohio with particular focus on surgical care and mental health services. We are continuing investment in a state-of-the-art new medical campus for SAMMC at Lackland AFB, TX. Our ambulatory care center at Andrews AFB, MD, will provide a key capability for the delivery of world-class health care in the National Capital Region's multi-service market.

By increasing volume, complexity and diversity of care provided in Air Force hospitals, we make more care available to our patients; and we provide our clinicians with a robust clinical practice to ensure they are prepared for deployed operations, humanitarian assistance, and disaster response.

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### **Partnering With Our Private Sector and Federal Partners**

Now more than ever, collaboration and cooperation with our private sector and federal partners is key to maximizing resources, leveraging capabilities and sustaining clinical currency. Initiatives to build strong academic partnerships with St. Louis University, Wright State University (Ohio); University of Maryland; University of Mississippi; University of Nebraska-Lincoln; University of California-Davis and University of Texas-San Antonio, among others, bolster research and training platforms and ultimately, ensures a pipeline of current, deployable medics to sustain Air Force medicine.

Our long history of collaborating with the Veterans Administration (VA) also enhances clinical currency for our providers, saves valuable resources, and provides a more seamless transition for our Airmen as they move from active duty to veteran status. The Air Force currently has five joint ventures with the VA, including the most recent at Keesler AFB, MS. Additional efforts are underway for Buckley AFB, CO, to share space with the Denver VA Medical Center, which is now under construction.

The new joint Department of Defense-Veterans Affairs disability evaluation system pilot started at Malcolm Grow Medical Center at Andrews AFB, MD in November 2007. It was expanded to include Elmendorf AFB, AK; Travis AFB, CA and Vance AFB, OK; and MacDill AFB, FL, in May 2009. Lessons learned are streamlining and expediting disability recovery and processing, and creating improved treatment, evaluation and delivery of compensation and benefits. The introduction of a single comprehensive medical examination and single-sourced disability rating was instrumental to improving the process and increasing the transparency. Services now allow members to see proposed VA disability ratings before separation.

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We continue to work toward advances in the interoperability of the electronic health record. Recent updates allow near real-time data sharing between DoD and Veterans Affairs providers. Malcolm Grow Medical Center, Wright-Patterson Medical Center, and David Grant Medical Center are now using this technology, with 12 additional Air Force military treatment facilities slated to come online. New system updates will enhance capabilities to share images, assessment reports, and data. All updates are geared toward producing a virtual lifetime electronic record and a nationwide health information network.

### **Year of the Air Force Family**

This is the “Year of the Air Force Family,” and we are working hand in hand with Air Force personnel and force management to ensure our Exceptional Family Member Program (EFMP) beneficiaries receive the assistance they need.

In September 2009, the Air Force sponsored an Autism Summit where educational, medical, and community support personnel discussed challenges and best practices. In December 2009, the Air Force Medical Service provided all Air Force treatment facilities with an autism tool kit. The kit provided educational information to providers on diagnosis and treatment. Also, Wright-Patterson AFB, OH is partnering with Children’s Hospital of Ohio in a research project to develop a comprehensive registry for autism spectrum disorders, behavioral therapies, and gene mapping.

The Air Force actively collaborates with sister Services and the Defense Center of Excellence for Psychological Health and Traumatic Brain injury (DCoE) to offer a variety of programs and services to meet the needs of children of wounded warriors. One recent initiative was the “Family Connections” website with Sesame Street-themed resources to help children

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cope with deployments and injured parents. In addition, DoD-funded websites, such as *afterdeployment.org*, providing specific information and guidance for parents/caregivers to understand and help kids deal with issues related to deployment and its aftermath.

Parents and caregivers also consult with their child's primary care manager, who can help identify issues and refer the child for care when necessary. Other resources available to families include counseling through Military OneSource, Airman and Family Readiness Centers, Chaplains, and Military Family Life Consultants--all of whom may refer the family to seek more formal mental health treatment through consultation with their primary care manager or by contacting a TRICARE mental health provider directly.

## **Investing in Our People: Education, Training, and Research**

### **Increased Focus on Recruiting and Retention Initiatives**

To gain and hold the trust of our patients, we must have highly trained, current, and qualified providers. To attract those high quality providers in the future, we have numerous efforts underway to improve recruiting and retention.

We've changed our marketing efforts to better target recruits, such as providing Corps-specific DVDs to recruiters. The Health Profession Scholarship Program remains vital to attracting doctors and dentists, accounting for 75 percent of these two Corps' accessions. The Air Force International Health Specialist program is another successful program, providing Air Force Medical Service personnel with opportunities to leverage their foreign language and cultural knowledge to effectively execute and lead global health engagements, each designed to build international partnerships and sustainable capacity.

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The Nursing Enlisted Commissioning Program (NECP) is a terrific opportunity for Airmen. Several Airmen have been accepted to the NECP, completed degrees, and have been commissioned as Second Lieutenant within a year. To quote a recent graduate, 2<sup>nd</sup> Lt. April C. Barr, “The NECP was an excellent way for me to finish my degree and gave me an opportunity to fulfill a goal I set as a young Airman...to be commissioned as an Air Force nurse.”

For our enlisted personnel, targeted Selective Reenlistment Bonuses, combined with continued emphasis on quality of life, generous benefits, and job satisfaction have positively impacted enlisted recruiting and retention efforts.

### **Increasing Synergy to Strengthen GME and Officer/Enlisted Training**

We foster excellence in clinical, operational, joint and coalition partner roles for all Air Force Medical Service personnel. We are increasing opportunities for advanced education in general dentistry and establishing more formalized, tiered approaches to Medical Corps faculty development. Senior officer and enlisted efforts in the National Capital Region and the San Antonio Military Medical Center are fostering Tri-Service collaboration, enlightening the Services to each others’ capabilities and qualifications, and establishing opportunities to develop and hone readiness skills.

The Medical Education and Training Campus (METC) at Fort Sam Houston, Texas, will have a monumental impact on the Department of Defense and all military services. We anticipate a smooth transition with our moves completed by summer 2011. METC will train future enlisted medics to take care of our service members and their families and will establish San Antonio as a medical training center of excellence.

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Our Centers for the Sustainment of Trauma and Readiness Skills at St. Louis University, University of Maryland-Baltimore Shock Trauma and University of Cincinnati College of Medicine remain important and evolving training platforms for our doctors, nurses and medical technicians preparing to deploy. We recently expanded our St. Louis University training program to include pediatric trauma. Tragically, this training became necessary, as our deployed medics treat hundreds of children due to war-related violence.

Partnerships with the University Hospital Cincinnati and Scottsdale, AZ, trauma hospitals allow the Air Force's nurse transition programs to provide newly graduated registered nurses 11 weeks of rotations in emergency care, cardiovascular intensive care, burn unit, endoscopy, same-day surgery, and respiratory therapy. These advanced clinical and deployment readiness skills prepare them for success in Air Force hospitals and deployed medical facilities, vital to the care of our patients and joint warfighters.

### **Setting Clear Research Requirements and Integrating Technology**

Trusted care is not static. To sustain this trust, we must remain agile and adaptive, seeking innovative solutions to shape our future. Our ongoing research in procedures, technology, and equipment will ensure our patients and warfighters always benefit from the latest medical technologies and clinical advancements.

Air Force Medical Service vascular surgeons, Lieutenant Colonels Todd Rasmussen and William "Darrin" Clouse, have completed 17 research papers since 2005 and edited the vascular surgery handbook. On January 10, 2009 a U.S. Marine sustained bilateral posterior knee dislocations with subsequent loss of blood flow to his lower legs following an improvised explosive device attack in the Helmand Province. Casualty evacuation delivered the Marine to our British partners at Camp Bastion, a level II surgical unit within an hour. At Bastion, British

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surgeons applied knowledge gained from combat casualty care research and restored blood flow to both legs using temporary vascular shunts. Medical evacuation then delivered the casualty to the 455<sup>th</sup> Expeditionary Medical Group at Bagram. Upon arrival, our surgeons at Bagram performed definitive vascular reconstruction and protected the fragile soft tissue with negative pressure wound therapy. The Marine is currently recovering at the National Military Medical Center in Bethesda and is expected to have functional limbs.

In another example, a 21-year-old Airman underwent a rare pancreatic autotransplantation surgery at Walter Reed Army Medical Center (WRAMC) to salvage his body's ability to produce insulin. The airman was shot in the back three times by an insurgent at a remote outpost in Afghanistan. The patient underwent two procedures in Afghanistan to stop the bleeding, was flown to Germany, then to WRAMC. Army surgeons consulted with University of Miami's Miller School of Medicine researchers on transplantation experiments. The surgeons decided to attempt a rare autotransplantation surgery to save the remaining pancreas cells. WRAMC Surgeons removed his remaining pancreas cells and flew them over 1,000 miles to the University of Miami Miller School of Medicine. The University of Miami team worked through the night to isolate and preserve the islet cells. The cells were flown back to WRAMC the next day and successfully implanted in the patient. The surgery was a miraculous success, as the cells are producing insulin.

These two cases best illustrate the outcome of our collaborations, culture of research, international teamwork, innovation, and excellence.

### **Shaping the Future Today Through Partnerships and Training**

Under a new partnership with the University of Illinois at Chicago, we are researching directed energy force protection, which focuses on detection, diagnosis and treatment of directed

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energy devices. We are exploring the discovery of biomarkers related to laser eye injuries, development of films for laser eye protection and the development of a “tricorder” prototype capable of laser detection and biomarker assessment. Additional efforts focus on the use and safety of laser scalpels and the development of a hand-held battery operated laser tool to treat wounds on the battlefield.

We continue our seven-year partnership with the University of Pittsburgh Medical Center to develop Type II diabetes prevention and treatment programs for rural and Air Force communities. Successful program efforts in the San Antonio area include the establishment of a Diabetes Center of Excellence, “Diabetes Day” outreach specialty care, and efforts to establish a National Diabetes Model for diabetic care.

Another partnership, with the University of Maryland Medical Center and the Center for the Sustainment of Trauma and Readiness Skills (C-STARS) in Baltimore is developing advanced training for Air Force trauma teams. The project goal is to develop a multi-patient trauma simulation capability using high fidelity trauma simulators to challenge trauma teams in rapid assessment, task management, and critical skills necessary for the survival of our wounded warriors. A debriefing model is being developed to assist with after action reviews for trauma team members.

Radiofrequency technology is contributing to medical process improvements at Keesler AFB, MS. Currently, Keesler AFB is analyzing the use of automatic identification and data capture (AIDC) in AFMS business processes. The AIDC evaluation focuses on four main areas: patient tracking, medication administration, specimen tracking, and asset management. Further



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system evaluation and data collection is ongoing in 2010 with an expansion of AIDC use in tracking automated data processing equipment.

## **Conclusion**

As a unique health system, we are committed to success across the spectrum of military operations through rapid deployability and patient-centered care. We are partnering for better outcomes and increasing clinical capacity. We are strengthening our education and training platforms through partnerships and scanning the environment for new research and development opportunities to keep Air Force medicine on the cutting edge.

We will enhance our facilities and the quality of health care to ensure health and wellness of all entrusted to our care. We do all this with a focus on patient safety and sound fiscal stewardship. We could not achieve our goals of better readiness, better health, better care and reduced cost without your support, and so again, I thank you.

In closing, I share a quote from our Air Force Chief of Staff, Gen. Norton A. Schwartz, who said, "I see evidence every day the Medical Service is *"All In,"* faithfully executing its mission in the heat of the fight, in direct support of the warfighter, and of families back home as well." I know you would agree that "All in" is the right place to be.