Joint Medical Operations

President’s Column

BGen Doug Robb, USAF, MC, CFS

Per Mr. Webster, JOINT: joining or linking or combining structure or process or device; per Mr. American Heritage, JOINT: formed or characterized by cooperation or united action; and per Joint Pub 1-02, JOINT: (DoD) connotes activities, operations, organizations, etc., in which elements of two or more military departments participate.

The theme of this issue of FlightLines is Joint Operations and what “joint” brings to the aerospace and operational medicine fight. We are now entering our eighth year of “boots on the ground,” “caps in the air,” and “haze grey and underway” for Operations Enduring and Iraqi Freedom. Military Medicine’s support for our soldiers, sailors, airmen, marines, civilians and coalition forces is something we can all be proud of, and the fact that our Military Healthcare System (MHS) has been at the forefront of the lowest DNBI and mortality rates in recorded conflict is not by accident. Notice I said MHS and not a particular Service or medical specialty. The ability for our forces to accomplish their respective kinetic and non-kinetic missions from the air, land, sea or space requires the support from all of our medical Services’ colleagues, not just your particular Service or specialty!

As you all are aware, rotary, turbo prop, and jet aircraft from our Army, Navy, Marine, Air Force, and Coalition forces are all parked side-by-side on the tarmac and ramps at Bagram, Balad, Al Udeid, and Ali Al Salem. And when you travel the globe, you will see ramps and runways with aircraft from several of our US military services and from various nations all in support of worldwide contingencies, peace keeping, cooperative medical engagement, and humanitarian operations. And once again, the ability of our aviation forces to accomplish their respective missions with the skill, tenacity, and professionalism we have come to respect (and expect) does not happen without the concerted effort of our joint and coalition aerospace and operational medicine colleagues.

The synergy and unity of effort that has evolved with the Component Command SGs in support of Unified and Combatant Command objec-
FlightLines: Vision and Mission

Our vision: FlightLines is the written forum for the Society of United States Air Force Flight Surgeons. We help facilitate top-to-bottom, bottom-to-top, and horizontal dialogue within the Flight Surgeon community.

Our mission: We provide a vehicle to pass the vector and tools to Flight Surgeons so they can do their jobs effectively and efficiently as current and future leaders within Team Aerospace.

Colonel Marchiando from Air Staff said it best... “Current global operations requires capabilities and flexibility that no single Service or Nation can provide. The evolution of each Service’s unique core missions and core competencies into the “interoperable” arena has produced operational support that has become superior to once fragmented inter-service support we historically experienced in the past.” So how do we get a wounded warrior from Asadabad or A Ramadi to Walter Reed, Bethesda, or Wilford Hall in less than 36 hours from time of injury? Well, it takes the cooperation of CENTCOM, ARCENT, NAVCENT, MARCENT, MNF-I/MNC-I, CJTF-82/TF-MED, NATO, and EUCOM just to name a few. As they used to say in the late 70’s... “We’ve come a long way baby!”

And when you think you are getting comfortable with your current “core competencies,” just remember that we’ve got USAF assets performing the MEDEVAC mission in southern Afghanistan and Navy assets performing the MEDEVAC mission in Kuwait... wait, I thought that was an Army core competency and mission! If I were you, I’d keep a current list of your sister Service buds in your rolodex and keep those Joint Pubs handy... or at least the links!

Fly safe... check six!
Greetings from the FlightLines senior editor. I am preparing to complete my year of occupational medicine residency and move to McGuire AFB, NJ. Alas this will be my last issue as senior editor. I have enjoyed working on this issue with Lt Col (select) David Duval, who I know will bring you entertaining and informative articles as the new Senior Editor. Please congratulate him, as well as Lt Col Howard Givens, the new Business Manager, when you have the chance! In my time with FlightLines we have covered medical operations in the Combat Zone, Research, Ethics and Joint Medical Operations. I know that FlightLines will continue to offer cutting-edge articles, built upon the articles, letters and pictures that you all send to us. Our next issue will focus on Leadership and Mentoring. Please continue to support this valuable forum to share lessons learned and exciting new thoughts.

It took me awhile to understand how some things operate regarding this publication and I will share some of this insight. FlightLines is the official publication of the Society of USAF Flight Surgeons (SoUSAFFS) and receives no government funding. The Society is a constituent member of the Aerospace Medical Association and thus we require membership in AsMA in order to be a member of SoUSAFFS. This arrangement was established in about 1960 and gives us freedom that would not be possible if we were a government organization/publication. Thus FlightLines relies on the support of our advertisers as well as the sale of merchandise such as the Flight Surgeon’s checklist. In fact our advertising does not fully cover our costs of production and we are always looking for companies that are interested in reaching the aerospace medicine leaders that make up our membership. Hope this helps answer some of the questions that you may have had. I am excited about the new look and style that Dave will bring, and I thank you for the many ways that many of you helped me with this great publication. Fly Safe!

Over 200 Risk Communication Workshops Conducted for the Department of Defense Over the past 10 years.

These workshops provide hands-on training for any issue DoD communicators have with external or internal stakeholders. They include both communicator skills training and communication issues planning:

- How to deal with negative emotions such as anger, fear, distrust, irritation and frustration.
- How to deal with agendas such as personal, political, economic, social, historical and cultural.
- How to deal with perceptions of risks that are different than the science/data/facts.
- Workshops cover how communicating with the media is different than communicating with the public.
- How to improve your nonverbal skills through both observation and self awareness.
- How to develop a flexible, practical communication plan.

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Fulton Communications, represented by Keith Fulton and Sandy Martinez, has over 43 years of experience in the chemical industry, including plant manager and public affairs manager of a major petrochemical plant, dealing with safety, health and environmental issues, economic and political agendas with internal and external stakeholders including the media.

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4 | FLIGHTLINES
Greetings from Air Staff! This Flightlines theme focuses on joint operations, which are now a way of life in our post Cold-War era. The Global War on Terror requires capabilities and flexibility that no one Service can provide alone. If we are to defeat our enemies, we must have available the expertise of the entire Department of Defense and often that of our allies. The different services bring unique and complementary skills to the fight. Each Service has core missions, core competencies, and Service capabilities making them interoperable and superior to fragmented interservice support. Working together through Joint Operations enhances our war fighting capabilities through unity of command, better use of our limited resources, and creates synergies.

The Combatant and Unified commands such as Special Operations Command, Strategic Command, and Central Command are great examples of jointness. They bring together the Services and facilitate Joint Operations leveraging Service capabilities to ensure the mission is achieved. Their goal is to use the capabilities the Services bring to the fight to accomplish the mission efficiently and effectively.

So why don’t we do everything Jointly? The Services have different roles and missions, and to meet these they fund and field forces differently. Each of the armed services has its own air arm to support their roles and missions, and to meet these they fund and field forces differently. Innovation and mission specialization is the result. For example, each of the Services has helicopters, but the basic mission they support is heavily vested in that particular service. The Air Force’s helicopter mission is intercontinental ballistic missile field support, Distinguished Visitor movement (in the DC area), Combat Search and Rescue, and Special Operations (joint). The Navy helo mission is mostly surface ship support and antisubmarine warfare. The Coast Guard performs the majority of Search and Rescue missions over the US coastal waters. The Army’s large helicopter fleet provides troop insertion, support, fire support, Dustoff, and air ambulance. The Marines do ship to shore movement and armed casualty evacuation. Although there is some overlap, these are mostly Service unique missions and support a particular service role.

This brings us to the (still theoretical) Unified Medical Command. Each Service has its own medical capabilities and uses and pays for them differently. The Army and Navy medics paid by Defense Health Program (DHP) dollars work in medical treatment facilities and provide the health benefits. These DHP funded medical units report to their Services’ Surgeons General, and mostly do not support line missions or answer to local line commanders (and therefore may not be as responsive to exercises, details, mission support, deployment processing, etc). However, the Army and Navy also have a very substantial number of medics that are organic to their line units and are paid for with line dollars. They report directly to line unit commanders and generally are not responsible for the health benefit provided by MTFs. The Air Force has a much smaller such alignment, i.e., Squadron Medical Elements or Air Evacuation (see attached FY 2008 Medical Structure Endstrength table for comparison and details).

The Air Force, in contrast, is overwhelmingly DHP funded but does not have its medical service directly report to the AF Surgeon General. 94% of AF medics are DHP funded and accounted separately from line positions, but report to and work for line commanders. The AF medical group commanders report directly to their respective line wing commanders and most medical officers’ senior raters are line officers. AF line leaders prefer this support and accountability to local line leadership. This difference in organizational and operational control explains why AF leadership did not endorse a Unified Medical Command. The AF Surgeon General believes we best support our medical beneficiaries, our readiness mission and our line commanders through our organizational structure. We wholeheartedly endorse joint operations, (including medical operations at Balad, Bagram, and San Antonio Military Medical Center), but there are valid reasons for independent medical services.

When we deploy AF medics, they chop (with other deployed forces) to the Joint Force Commander, and thus are actually joint there, even if deployed with an AF unit. This issue of Flightlines provides a nice overview of Joint Operations. Read it; reflect on your own experiences and on preparations for your own future Joint Operations, because they’re coming. Joint Operations are here to stay and provide the best method to project America’s military power. Keep ‘em flying.
Greetings fellow SoUSAFFS members!! My Executive Officer year is slowly coming to a close, so I wanted to take this opportunity to thank the Board of Governors, and members of Gen Robb’s staff who have been so helpful in coordinating activities for the Society. During this year we have had several excellent Flightlines issues, updates to our award packages, some new bylaws proposals, and some intense planning for the upcoming AsMA conference in Boston. I am looking forward to seeing many of you at the SoUSAFFFs table, the business luncheon, and the evening social. Gen Robb, with his extensive Boston experience, and the two RAMs at Harvard are planning an excellent social event. While at AsMA, please remember to renew your membership!! In the last year, the membership renewal date was changed to coincide with AsMA for your ease in remembering to renew your membership. Please encourage the young flight surgeons out there who are not already members to join!! New members can work with Lt Col Howard Givens, the San Antonio based membership rep. We will also be having elections in the near future!!! ♦
The Role of the AFFOR Surgeon in Combat Operations

Col Bryan “Gerbil” Funke, USAF, MC, CFS

The United States Air Force, within the framework of the Air and Space Expeditionary Task Force (AETF) construct, provides the full range of Air Force capabilities to the Joint Force Commander (JFC) at the unified command, sub-unified command, and joint task force (JTF) levels. In keeping with one of the most enduring principles of war—unity of command—the US presents Air Force Forces (AFFOR) under the command of a single Commander of Air Force Forces (COMAFFOR). To employ these forces effectively, the COMAFFOR relies upon his AFFOR staff to properly advise and assist him. This staff is divided into staff directorates and special staff. A key advisor, the AFFOR surgeon is a member of the commander’s special staff. Other special staff advisors include the judge advocate, safety officer, inspector general, force protection, commander’s action group and other functional areas desired by the commander.

Primarily the AFFOR surgeon advises the commander on a variety of medical plans, operations, policies and force health protection issues for assigned, attached and transiting Airmen. This advice may be formalized in written plans, staff summary sheets and decision briefings, or presented informally during meetings, discussions, sidebars, and social settings.

Combat operations, even sustained combat operations such as Operations IRAQI FREEDOM and ENDURING FREEDOM, are very dynamic and characterized by frequent surges and shifts in the battle focus. The AFFOR surgeon must maintain awareness of and be actively engaged in the planning of upcoming operations. This usually requires the surgeon to aggressively insert himself into the planning process as the commander may take for granted the superior support we medics have historically provided. In planning operations, the AFFOR surgeon will develop the theater medical lay-down medical and aeromedical evacuation assets. Generally, these decisions are based on known and historic planning factors but may be adjusted to the unique environment of the combatant commander’s (COCOM) area of responsibility (AOR). Mission, location, and size of deployed forces will determine the medical support requirements.

The AFFOR surgeon also determines appropriate preventive medicine and force health protection measures applicable to the current AOR and operation. These measure are based largely on medical intelligence and historical experience. The commander implements these recommendations via detailed reporting instructions and general orders to the forces. Historically disease and non-battle injury (DNBI) have had a much greater impact on ground and air forces than battle injuries. The remarkably low DNBI rates seen in this current conflict are a great success of our AFMS!

An Air Force does not fight alone - today’s battlefield is truly joint, with tight integration of air, land, space and sea forces. The medical mission is similarly joint in execution—a wounded soldier may be brought to the Air Force Theater Hospital in Iraq by a Navy MEDEVAC helicopter and then stabilized and transported by Air Force aeromedical evacuation assets to a joint Level 4 facility in Europe. The COCOM surgeon determines the overall concept of operations (CONOPS) in this joint environment. The AFFOR surgeon must establish networks with his COCOM and fellow components and joint task force surgeons. In the case of USCENTCOM, this entails communication with CENTCOM, ARCENT, NAVCENT, MARCENT, MNC-I, MNC-C, CJTF-82, other coalition surgeons and even host nation surgeons. Working together the various staff surgeons develop policies and procedures, ensuring our wounded warriors receive the best care available.

Each of the component services and coalition partners bring unique perspectives to the battlefield. The Army executes medical missions via a MEDCOM or TF-MED commander. This is very different from our Air Force culture of medics working for the line commander at the installation level. What results is complicated command and control (C2) arrangements that can be very confusing to novice deployers. In the case of our theater hospitals executing the joint theater-wide medical mission, OPCON and ADCON is through service channels and TACON is to the combined joint task force commander. Similar command relationships have evolved for our non-traditional battlefield Airmen. Managing ILO Airmen and assuring their well-being is a tremendous challenge for the AFFOR surgeon and the commander.

The AFFOR surgeon continuously monitors the health and disease status of assigned and attached forces looking for trends and providing feedback to commanders on the effectiveness of force protection measures. The inputs from the various components are jointly reported to the COCOM, providing great opportunity for synchronization of medical resources. A good example is the Joint Theater Trauma System which continuously collects detailed data injury and outcome data from Soldiers, Sailors, Airmen and Marines and then analyzes this data in the registry to develop clinical practice guidelines for use throughout the theater. Such guideline reduce variation and have led to the lowest died-of-wounds rates of any American conflict despite the highest injury severity scores yet seen.

Finally the AFFOR surgeon facilitates medical engagements in support of the COCOM theater security cooperation (TSC) strategy. Health is a non-kinetic weapon in the commander’s toolkit and is often the key to establishing new relationships in a non-threatening way with a host nation. In the CENTCOM AOR, the commander’s engagement strategy has transitions from MEDCAPS and provision of direct care to one of developing meaningful and sustainable capacity in partner nations. The AFFOR surgeon must ensure that any cooperative medical engagement is thoroughly coordinated and vetted with both the host nation and COCOM.

Healthcare politics are local. Accordingly the AFFOR surgeon must frequently visit the various facilities as well as the other players in his area of responsibility. The frequent travel to the AOR can be fatiguing; however the rewards of supporting our EMEDS commanders and helping them care for our most precious weapons system make it all worthwhile. Stay ready because you never know when your Air Force will call you for the next deployment!
The Army RAM Career

LTC John Albano, MC, MFSr

The young Army physician who desires a rewarding career as a valuable team player on the command staff and wants to make a significant impact on unit health and fighting strength is usually attracted to the duties and responsibilities of a flight surgeon. That young Army physician starts his operationally oriented career at Fort Rucker, AL. There, he attends the Army Flight Surgeon Primary Course (AFSPC) conducted at the US Army School of Aviation Medicine. This service-specific six week course culminates in the designation as an Army Flight Surgeon and the award of the Army Flight Surgeon badge. The course prepares graduates for duty as Aviation Battalion Surgeons and covers aerospace medicine, aeromedical evacuation, mishap prevention and investigation, aeromedical policy and administration, and brigade medical planning and support. The course does have a modular design that permits medical students, National Guard, and Reserve Soldiers to complete it in blocks.

Ideally (and this has been the past paradigm), new flight surgeons would then serve a utilization tour with an aviation battalion. It is at this level that strong professional bonds form with the unit command structure and social networking bonds with the aircrew members that last their career. New flight surgeons gain invaluable first-hand experience executing their duties as a battalion flight surgeon. They are the medical authority in remote and austere environments. They supervise a few medics and an aeromedical physician assistant. Relying on their organizational and problem solving skills, flight surgeons and their medical team troubleshoot medical issues affecting the unit. Many flight surgeons have reflected fondly on their experiences and often desire to serve again at that level. Leadership development, however, dictates the flight surgeon is trained to assume duties with higher responsibilities and perspectives that are more global.

Aerospace Medicine is a medical specialty of the American Board of Preventive Medicine (ABPM originally incorporated in 1948). It has been a recognized medical specialty since 1953, almost two and a half years before Occupational Medicine and almost 8 years before General Preventive Medicine gained specialty status. The Army conducts joint training with the Navy at the Naval Operational Medicine Institute in Pensacola, Florida. The Navy Residency in Aerospace Medicine (RAM) Program is fully accredited by the Accreditation Council for Graduate Medical Education (ACGME).

Prospective residents in aerospace medicine (RAMs) must first complete a clinical internship at an allopathic or osteopathic approved program. While applications for the RAM Program are for PGY-2 positions, there is a categorical RAM intern positions at Eisenhower Army Medical Center in Augusta, GA. The current paradigm is that the Army GME Office expects those interns to directly roll over into the specialty specific ACGME training (vs. a GMO utilization tour). Those selected begin their PGY-2 year by attending the University of Texas Medical Branch in Galveston, Texas for a fully funded Masters in Public Health (MPH). Upon completion of the MPH, the resident proceeds to Pensacola Naval Air Station for the PGY-3 year—Aerospace Medicine Practicum.

The PGY-3 year consists of approximately five months of aeromedical clinical rotations. The resident must also complete: the Aviation Safety Officer Course, Joint Aviation/Aerospace Medicine, Space Medicine, Civil Aviation Medicine, Travel/Tropical Medicine, Strategic and Tactical Medical Evacuation, and enhanced Flight Training. Flight training uses a combination of resources, to include civil flight training and courses and flights with Training Wing 5 and 6. Upon completion of the PGY-3 year, the resident is eligible to sit for the specialty board in Aerospace Medicine.

Residents who have previously completed a residency will go on their utilization tour immediately following the PGY-3 year. Those residents who are doing the RAM as their first residency will remain in Pensacola and complete a PGY-4 year. The PGY-4 year provides a structured clinical year: approximately eight months of primary and urgent care, two months of preventive and occupational medicine, and two months of electives. The purpose of the PGY-4 year is to ensure residents are competent and confident in their role as a primary care physician—Army flight surgeons are the primary care physician for their aviation units.

RAMs then serve a utilization tour typically as an aviation brigade flight surgeon. Not only do they advise the aviation brigade commander on medical issues, but they also medically supervise 3-6 battalion level flight surgeons and aeromedical physician assistants. As such, and in concert with the centralized aeromedical authority, they ensure aeromedical standards are enforced. Other operationally related duties include service in the Surgeon Sections of the various Special Operations Groups. Clinically related duties include acting as Regional Aerospace Medicine Consultant to various Medical Centers and Community Hospitals whose mission is to provide area medical support to units that include MTOE aviation related assets. RAMs are typically assigned as Department Head or Chief of an aviation or physical exam clinic in the medical treatment facility.

The new RAM graduate could also serve in aeromedical research, aeromedical academia, or aeromedical policy promulgation. Most all of these functions are at Fort Rucker, AL, the Home of Army Aviation. In aeromedical research, the new RAMs serve as a bench level research flight surgeon and/or as project manager of research efforts in Aircrew Protection or Aircrew Health and Performance. They can later advance to higher responsibilities in aeromedical research program management, thereby having a major influence in the development of technologies that give the soldier/aviator the combat edge. Ultimately, they can advance to Division Director and Commander of the USA Aeromedical Research Laboratory.

In aeromedical academia, the new RAM graduates start their tenure as the AFSPC Director. They are responsible for training and graduating the Army FS cadre. Later, they can advance to Chief of the Academic Standards and are responsible for overseeing standards consistency in the training of flight surgeons, aeromedical physician assistants, flight medics, and aviation psychologists, as well as the tactical medical evacu-
ation, Joint En Route Care, and aeromedical physiology courses. RAMs also assist as the medical inspector of Army-wide Aviation Resource Management inspections. To round out their career, RAMs can serve as the Army Associate Director to the Navy RAM Program, where their job is to ensure that, within the ACGME Guidelines, Army specific training is addressed and to serve as a full staff member to the Navy RAM Program. To top off their scholarly careers, RAMs can advance to be the Dean of the USA School of Aviation Medicine.

Regarding aeromedical policy promulgation, new RAM graduates serve as the centralized aeromedical authority on waivers and reviews. The execution of their duties has a major impact on the health and fitness of the Army air crewmember population. Their focus is to ensure all crewmembers meet published aeromedical standards, and if they don’t, determine whether the medical condition should be considered waiverable. Later, RAMs advance to become the Chief of the USA Aeromedical Activity (USAAMA) where their duties include liaison with the aviation line commanders, Army Human Resource Center, and sister services in establishing joint aeromedical standards and policy. The Chief of USAAMA also ensures that the Army Aeromedical Standards and Policies are based on scientific data, as applied to the appropriate occupational environment.

The RAM’s career choice is not limited to the aforementioned. Although not aerospace specific, RAMs compete well against other physicians for duty as a Division Surgeon, MACOM Surgeon, and Centers of Excellence. Examples include duty in CENTCOM’s Surgeon Office and service as the Army’s Combat Readiness Center (aka Safety Center) Surgeon. The RAM’s operational experiences also make them an ideal candidate for a JTF Surgeon, supporting NORTHCOM’s Defense Support to Civil Authorities mission. On the strategic level, the TRANSCOM Surgeon (an Army RAM) is working on creating an Army RAM billet in the Validating Surgeon’s Office. RAMs can compete against other physicians for Deputy Commander for Clinical Services, Clinic Commander, and Hospital Commander positions. The pinnacle, and certainly aerospace medicine related, is serving as the Aviation Medicine Consultant to the Surgeon General.

Hence, the RAM career covers the functional areas of clinical, operational, academic, research, and standards promulgation. RAMs can focus on one functional area, thus becoming a subject matter expert in an area, or they can transition across the functional areas, thereby bringing to each functional area a new and fresh insight. In both ways, the Army aeromedical community benefits by building on past knowledge and leveraging individual strengths that allow improvement to the Aviation Medicine Program and service to our customers.
Becoming a Naval Flight Surgeon

LCDR Michael Wentworth, MC, USN

One of the main reasons I signed up to become an Aerospace Medicine resident was the airplanes—or more precisely, the fact that the Navy would let me fly these airplanes. All Navy flight surgeons go through this training, at great expense. Why? The wise heads who design medical training programs assume this experience allows us to empathize with the pilots, to better understand their anxieties and beliefs. An oddly tender notion, to be sure, especially coming from an organization designed to hurt people and break things. I, for one, was glad for it.

All Navy flight surgeons train in the “Cradle of Naval Aviation,” Naval Air Station Pensacola, Florida. The base is permanently caught up in aviation fever…it boasts the Naval Air Museum, the Blue Angels, and a local population with no professional sports teams to distract them from their enthusiasm for flying. Snow-white sand, mild weather, and reasonable prices round out the lifestyle of the student aviator.

After feeling my age among the young Lieutenants in the flight surgery class, I felt like a true dinosaur amid the swarms of Ensigns at Aviation Preflight Instruction (API), many of whom had birthdays in the mid-1980s. These were largely Academy grads, sprinkled with a few ROTC folks and some Air Force, Marine, and Coast Guard students.

The training was intense. Every day brought a new milestone: Day 1 featured an inspection, Day 2 a physical fitness test, and so on. The subject matter sluiced in thick and fast, and included courses in aerodynamics, weather, navigation, flight rules, and aircraft systems. To test our physical reserves, the instructors threw us into the pool wearing successively heavier combinations of flight gear, culminating in a mile-long swim in a flight suit. The first four weeks seemed an endless slog through the lives of student and instructor pilots. The experience provided an excellent overview…I saw fixed-wing and helicopter communities, heard war stories from Iraq veterans, and worked closely with aviators from the Navy, Marine Corps, Air Force, and Coast Guard. The training process isn’t perfect: some of the student “training” is more reminiscent of fraternity hazing, and the aircraft and buildings possess a 70’s-era nostalgia. Overall, this trip deep inside a non-medical community was a wonderful experience that asked its participants to try not to make a fool of themselves as they practiced landing, taking off, and various aerobatics. Fortunately, the instructors are people of near-infinite patience, and seem to enjoy taking the flight surgeon for a spin. Our helicopter experience was even more enjoyable, with a ground school shrunk to a bare minimum of requirements. The flying was wonderful, with night flights over the beaches of Perdido Key and tactical hops spent hunting for tiny landmarks in the Florida wilderness. Even the students had better lives; having survived the rigors of fixed-wing training, they were more like colleagues to the instructors, and were accorded more respect and decent accommodations.

After my brief dip into the world of pilot training, I found myself agreeing with the Navy…flight surgeons certainly benefit from seeing the lives of student and instructor pilots. The experience provided an excellent overview…I saw fixed-wing and helicopter communities, heard war stories from Iraq veterans, and worked closely with aviators from the Navy, Marine Corps, Air Force, and Coast Guard. The training process isn’t perfect: some of the student “training” is more reminiscent of fraternity hazing, and the aircraft and buildings possess a 70’s-era nostalgia. Overall, this trip deep inside a non-medical community was exactly the reason I joined the Navy. It’s hard to tire of a career that asks me to do such interesting things.
Aviation Psychology with a Twist

Maj Ramon Yambo-Arias, USAF, MC, FS

Upon PCS’ing to Sheppard AFB in 2006, I was amazed to find out we had an aviation psychologist attached to Flight Medicine. I had not seen this arrangement at other bases and, in fact, it is unique in the US Air Force. Having been at Sheppard AFB for over a year, I can now say that this setup is very beneficial to the student pilot mission and would be helpful in other Air Force flying communities as well. For this reason, I would like to share my experience with you.

The services of aviation psychology were brought to Sheppard AFB in the mid-1980s to support the flying training mission of the 80th Flight Training Wing (80FTW). Sheppard Flight Medicine is the only clinic with dedicated aviation psychology services. From 1984 to 2000, aviation psychology fell within the Mental Health Flight. In 2000, the programs were placed under Flight Medicine. The move created three important advantages: increased access to services, reduced the stigma of participating in the programs, and closer coordination with the flight surgeons.

The programs were designed primarily to aid student pilots, but services are also available to instructor pilots, and to a lesser degree, air traffic controllers.

The most important part of the aviation psychology services is the Performance Enhancement Programs. These programs facilitate learning, performance, and progress in the Euro-Nato Joint Jet Pilot Training (ENJJPT) program. The aviation psychologist deals with common and normal obstacles to peak performance in the flying environment. There are three services offered within the Performance Enhancement Programs:

1. Aerospace Stress Adaptation Program (unique to Sheppard),
2. Behavioral Airsickness Management Program,
3. Brief Counseling (also contains a unique element).

Psychological and neuropsychological evaluation is another service supporting the flying mission. The neuropsychological evaluation is unique to Sheppard AFB Flight Medicine, as well. Our aviation psychologist has served as a consultant and resource to other UPT bases in this regard. The other venues for this service are the ACS at Brooks and the civilian community. Providing it locally saves time and reduces travel cost.

The Aerospace Stress Adaptation Program targets performance anxiety (the nervousness that can interfere with one’s peak performance). This program draws upon research and techniques from sports psychology, cognitive psychology, neuropsychology, and traditional clinical psychology. Participation in this program helps student pilots understand the source(s) of their anxiety, and teaches them ways to control nervousness and to sustain concentration in the jet. Our aviation psychologist has an 80% success rate!

Airsickness Management Programs (AMP) at other bases are typically handled by Aerospace Physiology. The Behavioral AMP provided by the aviation psychologist has been unique to Sheppard from the outset. The basic elements, common to all programs, are relaxation training and desensitization training. These elements are often split between Life Skills and Physiology at other bases. The “behavioral” aspect of the program emphasizes teaching the skills needed to control airsickness and omits the use of medication. These elements are better integrated under aviation psychology. The aviation psychologist has been sought out as consultant on the more difficult cases of airsickness. The great advantage of placing AMP under aviation psychology is the ability to draw upon a cognitive-behavioral approach to intervention. This allows airsickness management to be individually tailored to meet the needs of each student, and brings much flexibility to the treatment of airsickness. With aviation psychology under Flight Medicine, there is the added advantage of timely coordination with flight surgeons and commanders.

The brief counseling performed by the aviation psychologist deals with issues that may directly or indirectly affect flying performance (e.g., perfectionism, insomnia, relationship problems, fear of flying). He attempts to clarify these issues and offers techniques for resolving or compartmentalizing them. While such counseling is available through Mental Health, aviation psychology better ties the problems and the counseling to the personality of pilots and the flying environment.

Mental health problems are a sticky issue for both the flight surgeon (who worries about medications being inappropriately prescribed or diagnoses made in haste) and the patient (who worries about being DNIF’d and worries about permanently disqualifying medical conditions). Having an aviation psychologist in the flight medicine department has removed a huge obstacle in getting these pilots to see him; he is well known and trusted by the instructors and students at 80FTW. From the flight surgeon’s perspective, communication is practically seamless with the psychologist located within flight medicine; consultations are done quickly, thus minimizing potential downtime for the flyers. This arrangement has produced incredible results and should be heavily considered in other student pilot training programs and perhaps even in other pilot communities where referrals to mental health are frequent.
On the 12th of September 2007 Joint Military Medicine took a new bold step. Under a memorandum signed by the Deputy Secretary of Defense, the Honorable Gordon England, a new Joint Task Force Medical was established for the National Capital Region (NCR) – JTF CapMed. The JTF will be led by an O-9 medical leader and establish the future, first ever Joint Military Medical Center. The planning, formation and architectural design for the new Walter Reed National Medical Center (WRNMMC) is well under way. WRNMMC was legislated by Congress with the Base Realignment and Closure (BRAC) law. JTF CapMed will oversee all the BRAC healthcare changes in the National Capital Area (NCA). The Deputy Secretary expanded the BRAC Law by establishing a joint military medical region. Once WRNMMC is completed, the facility at Bethesda will be the first of its kind: a world-class, state-of-the-art joint military medical center. It will deliver the highest quality of healthcare, provide the best in graduate and professional medical education and training, collaborate on unique military medical research and serve as a worldwide military referral and coordination center.

It has been nearly three years since the BRAC announcement was made. Among many recommendations, it included the integration of the Army and Navy’s most prominent tertiary care hospitals: Walter Reed Army Medical Center (WRAMC) and the National Naval Medical Center (NNMC). Both institutions are in the Washington, DC area, sitting just six miles away from each other. America saw a need to consolidate the resources and capabilities of the Military Treatment Facilities (MTF) in the NCA. When the announcement was made, it was realized that military medicine in the NCA could never be the same. No longer would the Services operate in an independent fashion, but as a network of health-care providers and component facilities fully coordinating ambulatory and inpatient services to the area’s beneficiary population. It was further realized that the integration of these two military medical giants and the new unified regional military health system will need to be a benchmark for the future of all military medicine.

As the BRAC deadline of September 2011 approaches, significant advancements and changes are being implemented in the planning, construction and funding aspects of this unprecedented endeavor. The establishment of the JTF CapMed included the transfer of Rear Admiral John Mateczun from Navy Deputy Surgeon General to be the JTF Commander. It also means DoD must find resources and POM for the new medical JTF of the future. Unknown to most, the original Goldwater-Nichols Law instituting jointness into the military, purposefully, left military medicine out of many jointness requirements. This new directive may change some of the thinking about military healthcare and jointness.

One of the missions of the JTF CapMed is developing a jointness model for delivery of integrated healthcare in the National Capital Region. It will further ensure readiness and oversee the execution of the BRAC business plan. Because we are a nation at war, we must focus on our responsibilities to provide healthcare services to all beneficiaries in the region, especially our combat casualties, while preparing operational deployments and training for local disasters. We also have staff individual readiness responsibilities for Combatant Commanders and Service deployments meeting world-wide contingencies. The JTF CapMed’s Vision is a world-class medical center at the hub of the nation’s premier regional healthcare system serving our military and our nation.

To accomplish this unified medical mission, the Army, Navy, and Air Force will fully integrate and ensure the best use of resources afforded in the NCR. The consolidation of resources will eliminate redundancies, enhance clinical care, promote health professional education and joint training, improve research opportunities and further the growth of transformative efforts with government, community and private sector partners. The alignment serves to optimize the availability of care and offers the opportunity to enhance the effectiveness of the delivery of all levels of health care. The goal is to achieve an integrated healthcare delivery system which will bring the “best of the best” together to work in concert on behalf of the population they serve. The future of the military health system lies in this interoperability and mutual cooperation among the Services. Each Service brings unique and critical capabilities, but they can only be as effective as the contribution they make to the overall mission as a whole. The result is enhanced “synergism” where the newly integrated whole is more than the sum of its original parts.

The combining of WRAMC and NNMC at Bethesda and the movement of primary and specialty care capabilities from WRAMC to Fort Belvoir were included in BRAC Law 169. However, the JTF is now also responsible for the execution of BRAC Business Plan 173E – Malcolm Grow Medical Center (MGMC) transition from medical center to outpatient MTF. Decisions are being made right now about how big and what services should be at Andrews Air Force Base to include considerations for an ambulatory surgical center, casualty reception and holding facilities, and continuing emergency care support for the area with a robust ambulatory and medical transportation/MEDEVAC capability. The 79th Medical Group under Major General Gar Graham is now the Air Force medical component to JTF CapMed.

Throughout the process of integrating and improving interoperability of military healthcare in the National Capital Region, the Joint Task Force leadership has set a list of priorities. The first and foremost is Casualty
Care. As America’s primary reception site for returning casualties, this is an essential consideration. The next priority is Caring for the Caregivers. Our people are called to provide healthcare for all we serve, often under trying circumstances, and we have a covenant leadership responsibility to care for them as well. We must Be Ready Now. The lesson learned from 9/11 is that we must imagine the unimaginable and be prepared to adjust and react in worst-case scenarios. We will answer this call with extensive planning and adequate training. Another priority is Regional Healthcare Delivery. Integrated planning for the efficient and effective delivery of services on a regional basis is one of the keys to quality care and mission success. We can not afford to optimize operations at any given facility at the expense of sub-optimizing operations in the entire region. Another imperative is creating Common Standards and Processes. Achieving common business and clinical processes will be necessary to maximize regional potential. Differences that could adversely affect patient safety and outcomes, as our people work in different facilities across the region on a day-to-day basis, can not be tolerated.

The successful integration of Walter Reed and the National Naval Medical Center depends not only on our Service Medical Departments and JTF CapMed but on the contributions of our active duty, reserve, civilian and contract personnel and their families. Personal and family readiness are essential to the vision, as is the development and fostering of community relationships. There must be a strong commitment to and acceptance of change. Mission success demands that we be adaptable in the way we think and operate as we move in a direction heretofore never attempted. It requires leaders to set the right expectations and minimize uncertainty through constant dialogue and free flow of information. The concept of teamwork is essential as well. Each individual must be willing to give their individual “bests” for something that is larger than themselves, putting aside old business ways, a one-Service mindset, personal ambition, ego and pride. The new JTF regional command and medical centers will be tri-Service teams that create and implement new joint military medical processes and standards. Interoperability will be key to everything we do.

During the realignment, building and transfer processes, we will strive to minimize the inconvenience to our patients and stakeholders. I have made the promise that at no time throughout the construction phases of this enormous undertaking will the quality of patient care be diminished. A modification in the building and phasing of a Congressional and Administration directed acceleration plan to the BRAC project after the Walter Reed medical support crises of February 2007 has been supported by the Deputy Secretary of Defense. I presented the original acceleration as placing patients and casualties at a very high risk for disruption in services and care with all the required moves and changes in a simultaneous building with renovation process for the NNMC at Bethesda. A more modest acceleration plan was recommended and recently approved to build the new first, move the services in and then renovate the old. This too will be challenging, but we can not reduce operations that could possibly compromise our most important mission…exceptional casualty and patient care.

WOM* BUSTERS

This issue’s WOM is not a WOM, strictly speaking. But in the spirit of Joint Ops and the interest of clearing some confusion, I offer the following misinterpretation that I often run into when talking about moving our wounded troops:

**CASEVEC = MEDEVAC = AIREVAC**

Folks in the Air Force tend to use these terms loosely and interchangeably, but to the Army they mean very different things.

**CASEVEC** is the movement of an injured troop with any vehicle—without a medical attendant—to medical care.

**MEDEVAC** is the movement of an injured troop by air ambulance.

**AIREVAC** is a dedicated, fixed-wing aircraft for the movement of injured troops out of the area of operations. (This is usually an AF mission.)

AFSOC folks tend to use CASEVEC and AIREVAC only; the term CASEVEC includes the MEDEVAC mission. It may be wise to incorporate the Army terms into our lexicon, as they describe a distinction that may be useful to the medical team on the receiving end…

Send me your WOM Buster: david.duval@us.af.mil.
Those who can occasionally cast off the shackles of the world’s largest managed health care machine, and get out to interact with our more physically active brethren in the rest of the U.S. Air Force, will probably have an interesting tale or two to tell. As I look back over my career (incredibly 19 years long now) I have quite a number of amusing anecdotes, many of which I use to build that all-important rapport with the flyer: “So, you’re a pilot. Let me tell you about the time I flew a KC-135 during Operation DESERT SHIELD. A pilot? Me? Oh no, I was an enlisted crewbus driver…” Of all these, my experiences in joint operations have been the most interesting and rewarding. I’ve done a tandem high-altitude, low-opening (HALO) jump with the U.S. Navy, blown stuff up with the U.S. Army, provided basic and preventive care to thousands of African children, fired big guns, tossed grenades, slept on the ground, and eaten powdered eggs out of a bucket, all compliments of our sister services.

As part of Air Force Special Operations Command (AFSOC), I’ve had the opportunity to work with every branch of the Armed Forces and various other government agencies. And while I still sometimes joke that “joint” is spelled A-R-M-Y, the truth is, Special Operations is joint operations. I consider myself lucky to be able to work with and learn from professionals of such diverse backgrounds. There is the occasional crusty old guy or misguided neophyte with a dated view of how the services interact or a fanatical pride in service that becomes an impediment, but as jointness persists, mutual respect between the services now seems to be the norm.

So that’s some of what joint operations has brought to me, but what do we bring to the joint fight? We bring a unique knowledge of aircraft and aircrew capabilities and limitations. We have fresh perspectives on field medical operations. I consider myself lucky to be able to work with and learn from professionals of such diverse backgrounds. There is the occasional crusty old guy or misguided neophyte with a dated view of how the services interact or a fanatical pride in service that becomes an impediment, but as jointness persists, mutual respect between the services now seems to be the norm.

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So that’s some of what joint operations has brought to me, but what do we bring to the joint fight? We bring a unique knowledge of aircraft and aircrew capabilities and limitations. We have fresh perspectives on field medical operations. Since this is probably not your normal practice environment, you may help close the gap between “field medicine” and just plain ol’ clinical practice. If you are traveling with your new joint friends, you will inevitably become the de facto passenger/cargo movement expert—like it or not, when the plane’s late or the crew is “resting” or the pallet of rockets and MOGAS gets rejected, all eyes will turn to you.

Our differences are myriad: uniforms, lingo, standards. But while these differences have varying importance, what really allows us to work together is an understanding of our fundamental cultural differences. In general, the Army is a “directive leadership” organization, where the Air Force tends to be more “collaborative,” and I would describe the Navy as “modular,” where small, functional cells tend to operate somewhat independently. The Army tends to be less admin-intensive than the Air Force, which can cause frustration when the mission is perceived as being held up for “a form.” Even in AFSOC, which prides itself on putting the mission before the paperwork, we frequently frustrate Army Special Operations Forces guys who don’t understand why they can’t just call for an airplane and we then send them one.

Like working in any foreign culture, it takes time to really understand the psyche of the natives, but it’s usually a worthwhile investment and nothing goes so far in garnering goodwill as just making the effort to be a part of the team.

My Pearls:

- Get engaged in planning and meetings, you probably have more to offer than you realize.
- Each service and the joint arena has a unique language, you’ll start to pick it up quickly, but be prepared to ask for definitions regularly (especially abbreviations and acronyms).
- Say “I don’t know.” You will be asked lots of questions that are way outside your lane; you are the Air Force “Expert”, right? It’s so much easier to say “I don’t know” than to remediate the damage to your credibility (and maybe the mission) from winging it.
- Make an effort to fit in (an Army “hooah” here or a Navy “oorah” there) but remember, it’s the combining of our differences that provides the real strength to joint endeavors.
- Working with Army, Navy, Marines and other agencies is not only professionally rewarding, but can also be a lot of fun. Joint operations are typically conducted for missions that have real impact, the kinds of things you’ll be able to tell your grandkids about someday. There’s also a lot to be learned from watching how different organizations approach the same problem. And finally, who knows what kind of just plain fun stuff you may get to do...

Finally, if the idea of joint operations sounds great, but you just don’t how to get in on it, give Colonel Bill Nelson a call at Headquarters AFSOC (william.nelson@hurlburt.af.mil) and come take a walk on the dark side…
A major branch in career path occurs when residents graduate from the aerospace medicine residency programs in the Department of Defense. The USAF explicitly plans for their graduates to become the operational medicine leaders in their service. Both the USA and the USN accept that their RAM graduates become operational medicine experts by default and tradition. There are 67 billets identified for specialty trained aerospace physicians in the Navy. In addition, Navy specialists in aerospace medicine (SPAMs) have assumed leadership roles in operational arenas through the full spectrum of Naval operations: land, sea, and air.

**Career options for RAM Grads**

**Aircraft Carrier Senior Medical Officer**

The Commander Naval Air Forces (CNAF) has determined that the Senior Medical Officer (SMO) on Navy aircraft carriers should be Preventive Medicine (Aerospace) trained. By tradition, Navy SPAMs become SMOs on one of the aircraft carriers. Considered by many “the best job in the Navy for a doc,” the duties of carrier SMO demand mastery of the full range of preventive medicine skills. Since all personnel aboard the carrier are directly or indirectly involved in aviation, the aerospace medicine emphasis is natural.

The carrier SMO functions as the head of a department (HOD). The other departments (and HODs) include: Air (Air Boss), Supply (SUPPO), Combat Systems (CSO), Reactor (RO), Engineering (ChENG), Weapons (Gun Boss), Navigation (Gator), Operations (Ops), and others. The HODs (both line and support corps) are typically O5 (Commander) rank. Thus the SMO is ideally at least equal in rank with the other HODs. Although a relatively small department (about 16 officers and chiefs and 60 enlisted), Health Services is one department that bears direct responsibility for the well-being of every Sailor, including all deployed squadrons.

The overall function of the SMO has been likened by one veteran to being “the CEO and chief of staff of a general community hospital, the chief public health officer for a community of 6000 powered by a nuclear reactor, and the CEO of a small HMO,” all at the same time. More senior rank is desirable for the execution of these challenging duties. Other leadership roles available to SPAMs accommodate both more junior and more senior medical officers, although the luster of “carrier SMO” keeps the majority of RAMs tracking to this traditional tour upon graduation.

**Junior SPAM billets**

In the unusual circumstance where RAM graduate numbers exceed carrier SMO positions, SPAMs have filled a variety of billets both in aviation medicine and in broader occupational medicine or preventive medicine fields. These include: research at the Naval Aeromedical Research Laboratory (NAMRL), senior (wing) flight surgeons (Navy and Marine), hospital-based epidemiology and occupational medicine practice, and flight medicine/primary care billets at remote duty stations without “organic” aviation squadrons but significant transient aviation activity (examples are Crete, Bahrain, and the primary care physician billet on aircraft carriers). Junior SPAMs are expected to transition between clinic/hospital-based practice and operational practice (linked to deploying forces) to gain experience and prepare for the “capstone” experience as carrier SMO.

**Other senior SPAM billets**

Post-carrier SMO tour, seasoned SPAMs (sounds delicious, doesn’t it?) have a variety of positions for which they are highly competitive. Again, these positions are both within aviation medicine (where SPAM qualification is required) and executive clinical medicine (where the pure clinicians compete).

In aviation/operational commands, SPAMs serve as Force Medical Officers for all echelons of command: Naval Air Forces (CNAF), Naval Air Atlantic (CNAL), Naval Air Pacific (CNAP), Fleet Forces Command (CFFC), numbered Fleet commands, global region commands, Headquarters Marine Corps, Naval Safety Center, and Naval Environmental Health Command (NEHC). Medical officers for major Joint commands have also been Navy SPAMs.

In executive and clinical medicine, SPAMs have served as Officers-in-Charge of branch clinics, Directors of Medical or Surgical Services at hospitals, Specialty Leader (at the Bureau of Medicine and Surgery), and hospital Executive and Commanding Officers.

For those with academic or teaching ambitions, a return to the Naval Operational Medicine Institute (NOMI) detachment at Naval Aerospace Medical Institute (NAMI) allows SPAMs to mold and mentor the future Naval Flight Surgeons and other aeromedical officers and enlisted personnel, in addition to continuing to practice aviation medicine in their clinical specialties. Faculty roles at the Uniformed Services University of Health Sciences have also been “covered in SPAM.”

Although this list covers most of the prescribed career positions for SPAMs, the “sky is the limit” when coupled with personal determination and self-direction. VADM Don Arthur (the first Navy Surgeon General wearing Naval Flight Surgeon wings), and astronaut CAPT Lee Morin both include specialty certification in Aerospace Medicine on their CVs.
Flight Surgeon’s Course Curriculum

The Naval Flight Surgeon Course is designed to prepare Navy physicians for duty with the operational forces of the Navy and Marine Corps aviation communities. The graduate of the program is expected to practice in an operational setting to ensure medical readiness of the unit. Preventive medicine, primary care, contingency planning and medical administrative duties, whether ashore or afloat, are all important roles that the naval flight surgeon can expect to perform. The Navy’s flight surgeon training course is twenty-four weeks long.

Phase I Training: API

Aviation Preflight Indoctrination (API): The first phase of this course is a six-week flight orientation and ground school at the Naval Aviation Schools Command. A prerequisite to flight training, this segment consists of six weeks of course work at the Naval Aviation Schools Command. Basic ground school topics include aircraft engine systems, flight rules and regulations, meteorology, aerodynamics, navigation, aircrew coordination, and fitness. Aviation physiology, land survival, and water survival training is also included. This six-week phase of instruction is conducted side-by-side with Navy and Marine Corps aviation officer students.

Phase II Training

The second phase of instruction is a ten-week flight indoctrination syllabus with Training Air Wing FIVE at Naval Air Station Whiting Field, Milton, Florida. Training is conducted in the fixed-wing Beechcraft T-34C (Turbo Mentor) and the Bell TH-57 (Jet Ranger) helicopters. The primary goal of flight training is to expose the student flight surgeon to the hazards and stressors of flight from the perspective of the aircrewman. Each phase of the flight surgeon’s training satisfies a need for knowledge and experience, which assures his or her credibility in the line aviation community. It provides the background necessary to provide essential aeromedical insight into aviation safety and to establish good rapport with squadron personnel, thereby increasing the effectiveness of the flight surgeon in his or her assignment.

Phase III Training

The last nine weeks are spent in the classrooms and clinics on the campus of NAMI. Intense didactic instruction in environmental physiology familiarizes the student to the physiologic stresses imposed on the aviator in flight. An operational medicine overview covers topics that are pertinent not only to aviation but to all military medical assignments. This augments the flight surgeon’s understanding and appreciation of the mission of the Navy Medical Department. Clinical aeromedical topics in internal medicine, neurology, psychiatry, otorhinolaryngology, and ophthalmology provide the flight surgeon with the understanding of how the aviation environment can affect the physiologic and pathophysiologic processes of the human body.

Practicum Year

During the practicum year, residents participate in clinical, academic, and operational medicine courses at the Naval Aerospace Medicine Institute (NAMI) in Pensacola, FL and various locations throughout the country. The program emphasizes the practical application of population health and preventive medicine principles in Joint military aeromedical settings.

Clinical Medicine

During the clinical medicine portion of residency program, residents learn and apply the latest concepts, skills and tools typical of real world medical situations that the military aviation community encounters daily. Residents hone their clinical skills by evaluating patients for two to three weeks in each of the following clinical departments: Aviation Psychiatry, Otorhinolaryngology, Ophthalmology, Neurology, Internal Medicine, Aviation Medicine, Physical Qualification, and Physical Examination.

Academic Medicine

Academic aspect of the residency program requires the following five deliverable items:

- A publishable paper as a result of resident participation on aeromedical research
- An aeromedical case presentation at the annual Aerospace Medicine Association meeting
- A mishap case presentation with related aeromedical implications
- An aeromedical policy formulation and presentation at the Aeromedical Advisory Counsel
- A Grand Rounds presentation of resident’s topic of choice

Operational Medicine

Courses in operational medicine prepare residents for challenging leadership roles in future military assignments, especially onboard aircraft carriers as Senior Medical Officers. A brief synopsis of some of the courses Navy RAMs may participate in include:

- The Aviation Safety Officer course instructs residents how to investigate mishaps, organize and administer mishap prevention programs, identify hazards, manage risks and analyze safety information. This is the same course training line officers assigned as squadron Safety Officers.
• The Radiation Health Indoctrination course trains residents to manage the medical aspect of the Radiation Health Program for Navy Nuclear Propulsion or Naval Nuclear Weapons programs.

• The Global medicine course equips operational physicians to combat infectious diseases in a deployment setting thus minimizing the health risk of the natural biologic hazards to deployed forces.

• An aircraft carrier rotation, an annual Senior Medical Officer conference, and the Amphibious Task Force Surgeon’s course provide residents with insights into shipboard operational medicine.

• Residents also prepare for operational leadership by attending an Advanced Medical Officer Indoctrination Course.

• Residents gain appreciation of the complexity and the efficient use of the aeromedical evacuation (AE) system in the Advanced Clinical Concept in Aeromedical Evacuation (ACCAE) course, the Army AE Doctrine course, and a Global Patient Movement Requirement Center (GPMRC) rotation through U.S. TRANSCOM. This gives residents exposure to AE from point of injury to definitive care.

• Tactical Combat Medical Care course and a Center for Sustainment of Trauma and Readiness Skills (C-STARS) rotation provide residents with trauma skills and knowledge to manage critical trauma and mass casualty situations.

• Office of the Armed Forces Medical Examiner rotation introduces the residents with forensic pathology.

• Exposure to homeland security and disaster medicine in support of National Response Plan are available through courses such as Homeland Security Medical Executive, the Defense Support of Civil Authority, and the Joint Operational Medical Management course.

• Residents gain an excellent overview and insight into the medical policy and procedures of the FAA and civil aviation medicine through an Aviation Medical Examiner’s course and a rotation through the Civil Aviation Medical Institute.

The combined Navy/Army Aerospace Medicine Program provides residents with depth and breadth of tools to excel in the art of preventive medicine in aeromedical environment, preserving human potential and contributing to the mission completion.

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An equal opportunity employer
Unification of Aerospace Medicine

Lt Col Brian “Milhouse” Agee, USAF, MC, FS
RAM 2009

We face enormous difficulties when pondering unification between the services. The following scenario illustrates how the four services interpret a single word:

Four officers were given the same order—“Secure your building.” The Naval officer turned off the lights, locked the doors, and went home. The Army officer posted a guard on the perimeter. The Marine called in artillery fire and airstrikes and left the building a smoking crater. Finally, the AF officer negotiated a 3 year lease with a 10 year buyout clause…

This article will discuss the merits of a strategic plan for unifying aerospace medicine. First, let’s define the distinction between the terms “joint” and “unified” and “purple suit.” The term “joint” refers to the different services working side by side on the same mission, but with a separate set of logistics and administrative processes. The term “unified” refers to the different services working the same mission with the same administrative and logistic support process. The term “purple suit” is used in a derogatory fashion when a discussion about joint or unified health care is proposed, and will not be used here.

The realities of downsizing and BRACing in the face of increasing Ops tempo lends itself to the question of how to continue delivering top notch medical care to the DOD. Rather than discuss unifying all of Military Health Services (MHS), let’s examine a small piece—aerospace medicine. The first step in exploring this option is not to fixate on the differences between us and them, but rather learn about the similarities. Aerospace medicine has markedly similar roles in each of the three services.

The best way to explore and learn about the similarities and strengths in the MHS aerospace community is to foster an active cross-service exchange program. Currently, flight surgeons serve Joint tours randomly and at personal convenience (usually within the Exceptional Family Member Program), but this reaps no corporate benefit.

Instead, a program of deliberate, one year joint tours for the top X% of each service’s flight surgeons should be the target. Cross tours would target sister service air missions (rotary in the Army, bombers and cargo in the AF, and naval aviation operations), standards and evaluations (there are some minimal variations in the standards for aviation; would also look at medical evaluation boards), and Airevac process (Army does tactical evacuations well, AF does strategic evacuations, and Navy does tactical and operational evacuations).

A debriefing tour on the parent SG’s staff would follow the Joint tour, and lessons learned could be shared at that time. Knowledge after 4-6 years of doing these exchanges could be applied to a future unified or joint Aerospace command, and possibly a future template for a joint or unified medical service.

The primary costs for this plan would be in PCS dollars for the shortened tours (~$10k per flight surgeon PCS). There would be no extra flight surgeon manpower costs as the net DOD pool of flight surgeons would remain constant. Unintended consequences include poor morale and possible interservice dumping of lame duck flight surgeons, something that a mandatory follow-on staff tour should mitigate.

This method could grant us the time and luxury of information gathering, culture sharing, and mutual learning. It grants a bit of autonomy in shaping our collective future vice a congressional mandate if we do nothing.

As always, I welcome your comments at brian.agee@us.af.mil.

Call for SOUSAFFS Officer and Board of Governors Nominees

As you know we are in an election year.

Well…every year is an election year for the society and this year we will be electing a new Vice-President (President elect) and three board members. Elections are only as exciting as the quantity of candidates and we need your nominations for VP and board members. A narrow field tends to kill enthusiasm so we need all the nominations you can come up with.

Please send nominations to Lt Col John Andrus at john.andrus@us.af.mil who will determine the candidates are qualified and willing to serve. Nominate today, nominate often! Submissions will be accepted until 15 March 08.

Remember, voting will be done electronically via www.sousafts.org.
Looking to complete a Master of Public Health (MPH)? Ever thought about attending the Uniformed Services University of the Health Sciences (USU), located in beautiful Bethesda, Maryland? For those unfamiliar, and even those familiar with USU, you should read on about how USU should be your school of choice for your MPH degree.

USU is the Nation’s only federal institution for higher learning in the health sciences. The school is committed to excellence in military medicine and public health during peacetime and during war, fulfilling a unique mission among U.S. schools of medicine. Located in the Nation’s capital, USU draws not only upon its experienced faculty, but also upon speakers and resources from nearby facilities to include the Malcolm Grow, Walter Reed, and National Naval Medical Centers, the National Institutes of Health, the Armed Forces Institutes of Pathology and Radiobiology Research, the National Library of Medicine, and the offices of the Surgeon General for the Air Force, Army, and Navy.

MPH degrees are granted by USU’s Department of Preventive Medicine and Biometrics (PMB). No other MPH program in the country is committed to providing a comprehensive, military-focused preventive medicine training degree that ensures each student leaves with the academic background necessary to practice as a competent preventive medicine officer in one of the Uniformed Services. USU offers a unique quad-service (AF, Army, Navy, and Public Health Service) learning environment with students bringing to the discussions their perspectives from various health career backgrounds such as physicians, nurses, veterinarians, dentists, pharmacists, sanitary engineers, entomologists, and microbiologists. This broad student and faculty background facilitates inter-career field and inter-service exchange of information, which also serves to expand the students’ future network of professional contacts. In addition, the USU MPH is fully accredited by the Council on Education in Public Health and by the Middle States Commission on Higher Education. The 12-month curriculum has a quantitative focus that will make you fully qualified to apply preventive medicine concepts and principles to any Air Force or joint operation scenarios you may encounter throughout your military career.

USU students complete a minimum of 60 quarter credit hours with 36 credits in the core disciplines of Public Health (Biosciences, Epidemiology, Health Services Administration, and Social and Behavioral Sciences). Additional credits are earned while completing a practicum experience with a career field expert (an example is learning the intricate workings of the Air Staff, gaining very useful insight for a future Resident in Aerospace Medicine [RAM]), and an independent project presented at the end of the year. The project is expected to represent the synthesis, integration, and application of public health principles. Recent aerospace medicine research includes an evaluation of Army helicopter mishaps over a 20-year period and the effect of safety awareness briefings on AF accidents.

Students at USU have the opportunity to concentrate their studies in one or more of the following areas: 1) Aerospace Physiology, 2) Biostatistics and Epidemiology, 3) Environmental and Occupational Health, 4) General Preventive Medicine and Public Health, 5) Health Services Administration, 6) International Health, and 7) Tropical Public Health. Each area of concentration builds upon the foundation of the core MPH curriculum with additional required and elective courses.

As an AF physician, you should note the unique opportunities offered by a few of the concentrations. The Aerospace Physiology concentration is primarily set up to train AF and Navy Aerospace Physiologists but offers several Aerospace Medicine classes of particular interest to AF and Navy Residents in Aerospace Medicine (RAMs). The two RAMs and two Aerospace Physiologists assigned as full-time faculty provide mentoring on projects and practicums for MPH students.

The International Health concentration attracts many students. The program emphasizes interoperability in military-military and military-civilian health activities, the roles of inter-governmental (IGO) and non-governmental organizations (NGO), political and economic factors, as well as sociocultural influences on the delivery of health care. The program has a special focus on recent military activities in Iraq and Afghanistan, bringing in experts from the field to present and lead stimulating discussions on military medicine’s current and future role in Stability, Security, Transition, and Reconstruction (SSTR) Operations and Complex Humanitarian Emergencies (CHE).

The Tropical Public Health concentration attracts many physicians who want to learn more about the principles and practice of tropical medicine, vector biology, and public health in tropical areas. The Master of Tropical Medicine and Hygiene degree program is also available at USU; requires the same core courses as the MPH and, like the MPH, satisfies the requirements of the American Board of Preventive Medicine for all specialty areas. It is limited to physicians and provides a broad base of knowledge in clinical tropical medicine. A 6-week overseas rotation is a requirement of this degree program and takes place at the end of the academic year. Funding is available for these rotations. Most rotations are done at one of the DoD overseas research laboratories, which are located in Bangkok, Thailand; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and Lima, Peru.

Some prospective students have voiced concern over the high cost of living and traffic in the Washington, D.C. area. Although a valid concern, students have been able to locate housing and outstanding elementary, middle, and high schools for their children within a reasonable commute to USU. The federal government provides a subsidy of up to $330 per quarter for those using the Metro bus or rail systems. This subsidy greatly offsets the increasing prices of gas at the pump!

Bottom line, USU offers the only fully accredited, military-focused preventive medicine training opportunity in the nation. The MPH program draws upon its own faculty and incredible resources in the D.C. region to provide a comprehensive learning experience. The concentrations allow the students a broad range of learning opportunities that are directly related to their future assignments and responsibilities in the military. To learn more about the MPH program at USU please visit http://www.usuhs.mil/pmb. USU should be the only school of choice for your MPH!
Combat Sailor Transition

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Introduction

As the role of Individual Augments has increased and become a recognized career path, sailors are now performing tasks traditionally performed by soldiers, and in unfamiliar combat environments. In preparation for deployments (some as long as 15 months) Navy personnel attend an Army indoctrination course lasting several weeks. Sailors become familiar with Army procedures and processes which allows for immediate mission tasking once “boots are on the ground” within the combat environment.

Once the mission is complete the sailor must transition from a ground combat warrior back to the traditional Naval environment or back to a civilian life. The authors believe the transition process should involve movement out of the combat environment and intervention with a multifaceted approach that includes: Medical, Personnel Support Activities, Logistics, and Religious requirements, Legal, Career Counseling and Family Service Assistance.

Accountability and tracking of the sailors’ progress, once back in the U.S. (CONUS), is a key element to evaluate reintegrations success. We suggest five phases: Pre-CONUS, Parent command check-in, and follow-ups at 90 days, 6 months and 1 year. Currently there is an emphasis on pre-deployment preparation to enter the battle field; we must now also provide an effective detailed program to ensure successful reintegrations out of a combat zone.

From War to Home – The Transitioning Warrior

The transition from a combat environment has always been an enormous concern as well documented stressors have known deleterious effects on readjustment. Until recently there has been minimal research on the effects of multiple combat tours extending past two years. References as early as Homer’s Iliad describe a detachment from home during combat, where Achilles cuts his red-gold hair “that he had grown as a vow for safe homecoming”, and declares “now, as I shall not see my fatherland”.1 The psychological effects of combat are further documented in conflicts dating back to the U.S. Civil War.2 Current history has seen the description of a number of post-deployment conditions that further obstruct community reintegration. Studies following the Vietnam War resulted in the recognition of Post Traumatic Stress Disorder (PTSD), an anxiety disorder brought on by exposure to a traumatic event and manifested in hyperarousal, re-experiencing of trauma, and avoidance of stimuli.3

The current conflicts in Iraq and Afghanistan have produced a high burden of post-deployment issues. Separate studies among veterans have found approximately 20% reporting a mental health concern, PTSD prevalence rates ranging from 10% to 13%, and a 33% reported rate of problematic alcohol use.4-6 Recently, the U.S. Army released data indicating the highest number of suicides service-wide since 1990.7 Family issues are also prevalent; Hoge, et al. reported an increased risk of concern over interpersonal conflict in the months following return from deployment.8 Additionally, time away from home, especially with repeated combat deployments, can cause unresolved compounded personal stressors, financial difficulties, additional burden on family infrastructure, and in the case of reservists destabilization of civilian career paths.

Post-deployment health screening has become an increasingly important tool within the U.S. military to identify health issues such as mental health concerns or traumatic brain injuries. Currently two screening instruments, the Post Deployment Health Assessment (PDHA) and the Post Deployment Health Re-assessment (PDHRA) are utilized.9 The PDHA is given within 30 days of the end of the deployment, and the PDHRA is given 90-180 after deployment in order to capture any later developing issues. The goal of these instruments is to identify potential health issues early and refer the service member for the appropriate medical services. Recent data suggests that a significant number of service members not reporting concerns on the PDHA later identified concerns on the PDHRA.10 This latency in reporting may indicate the need for targeted intervention on all returning veterans, not just those indicating concerns immediately post-deployment.

Model for Combat Ground Sailor Warrior Transition

A standardized warrior transition program, with the goal of facilitating reintegration, should be applied to all returning service members. In discussing post-deployment needs of new combat veterans, Kudler proposed that “needs would be better met through a public health model that incorporates progressive outreach and engagement of all new veterans rather than a traditional medical model which focuses only on those with a biological disorder.”10 A proposed model for warrior transition can be conceptualized as an adaptation of the PIE (proximity, immediacy, expectancy) principles.

The PIE principles were conceived by Salmons as a treatment for combat stress reaction, an acute psychological reaction to the stress of war, usually in response to a specific incident.11 The theory is to treat psychological casualties in close proximity to the incident, with immediacy of treatment near the onset of symptoms, and expectancy that the member will return to his or her unit. Some evidence indicates that these principles have lead to a higher return to duty rate of psychological casualties.11 These principles did not, however, address the member’s ability to cope with his or her changed nature as a result of the incident.

In order to adapt these principles for warrior transition, one must conceptualize the entire deployment as the acute event. Instead of acute combat events causing a reaction requiring treatment, the sum total of all the stressors experienced during a deployment may elicit a reaction, though sometimes not until after returning home. In this case, the PIE principles can be applied to the deployment as the specific stressor. Interventions should be conducted in proximity to the deployment stressor, with immediacy as a multi-faceted approach, and with the expectancy of return home.

The expectancy piece is important as service members may be less apt to report mental health issues while still in the theater of operations. A recent GAO report shared these concerns, as it stated in regards to PTSD that before leaving the theater of operations “the service member still feels as if they are in a combat environment” and that the nature of

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any symptoms may be difficult to discern. It is also possible that the service member may feel that reporting symptoms will slow their return home. It is thus important to maximize the member’s expectancy of return home by conducting these interventions outside of the theater of operations. A viable option would be an intermediate location between theater of operations and homeport within the immediate post deployment cycle, which would allow for greater access to any latent stressors affecting a healthy re-integration home. For the purposes of addressing medical concerns, the intermediate location should have medical treatment capabilities and access to service specific electronic data input. It is also essential to have the ability to access and input consultations within the TRICARE system and Veterans Administration Medical Treatment Facilities. Regarding the immediacy piece, this intermediate location for warrior transition would likely be the first opportunity to address any feelings of apprehension about returning home.

Components of Warrior Transition

Warrior transition should be a multi-faceted intervention, and the sailor as a whole must be the focus. Proposed components of this intervention are divided into three major categories – logistics/administrative support, medical screening/intervention, and counseling/family support services.

Logistics/administrative support: The site of warrior transition should be a centralized location for out-processing/in-processing. Disarmament, return of combat gear, relinquishing body armor and reissuing field uniforms is an important first step in the psychological preparation for transition. Centralization in a one-stop process will also aid the services in equipment accountability and provide the service member one less task to complete after return to homeport. Customs inspections should also conducted to ensure all pre-CONUS requirements are met. Issues with pay and allowances would be reviewed as adjustments are required when transitioning from a combat environment. The ability exists to review a member’s electronic record and update if needed, to include life insurance (SGLI), awards received, and dependency information. Travel claims and changes to identification cards can be processed as well. Overall, consolidating all of these logistic and administrative tasks into one localized program will allow the member to begin the transition process at home in quicker fashion. The processing through Personnel Support Detachment (PSD) would also allow for long-term accountability and tracking.

Medical screening/intervention: The PDHA can be administered during warrior transition, which would allow for issues and concerns to be immediately identified and targeted with intervention. The PDHA would be completed by the member, then as per requirements a medical provider would review the member’s responses and, if appropriate, refer them for further medical care. The PDHA has a section focusing on mental health issues, and recently added questions ascertaining potential for traumatic brain injury. More aspects of the post deployment medical process, including collection of blood samples and screening tests (PPD, HIV), can be completed. Follow-on immunizations can be administered, and post deployment medications, such as terminal chemoprophylaxis for malaria, can be dispensed. The overall goal of this medical screening is to provide immediate and long term medical intervention. An additional advantage to utilizing service specific electronic record systems is ability to track the member through the health care process and ensure consultations appointments are kept.

Counseling/family support services: A variety of counseling services is an integral part of warrior transition, and should be made available to all regardless. Social workers can be present for family support services and chaplains can provide transition briefs and spiritual counseling, if desired. A deployment can sometimes have a profound effect on a member’s career desires for the future. Therefore, counseling can be given on career options, as well as reviewing military educational opportunities. Incorporation of a didactic program into warrior transition is key. Education should focus specifically on reintegration into the home environment, to include discussions on the meaning and purpose of life issues, how to share experiences with others, positive and negative aspects of the deployment, and facing your family and friends for the first time. Family services would target any issues identified from didactic portion of the program, and would offer intervention techniques on such things as combat stress, stress management, anger management, and tobacco cessation. Together, these services should aim to decompress the member and help facilitate a re-embracing of career, family, and civil responsibilities.

Conclusion

Transition of sailors from non-traditional ground combat to home presents many challenges. Multifaceted interventions, provided shortly after deployment, may help facilitate reintegration. The site of these interventions should be outside the combat theater in a location that fosters an increased normalcy and increased quality of life. This warrior transition model would provide various support services with the goal of phasing service members from the “boots on the ground” combat environment back into the home environment. Successful implementation of such a program may reduce post-deployment adjustment issues.

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Multi Detector Computerized Tomography in the Diagnosis of Coronary Artery Disease in Asymptomatic Aircrew Members

LtCol Christoph Wonhas, MC, FS, GAF

In 2007 two airline captains died because of a sudden cardiac syndrome in-flight, one of them in Texas. Also there is one F-16 pilot known, suffering from acute myocardial infarction in-flight. Would you have flown with these pilots?

Coronary artery disease (CAD) defined as atherosclerosis with or without significant stenosis, is the leading cause of death all over the western world. Fifty percent of initial and recurrent acute events are fatal, even in prior asymptomatic subjects. They are mostly caused by rupture of coronary plaques with immediate clotting of the culprit lesion’s vessel. One study in 1992 revealed that 52% of the infarct-related arteries had less than 20% stenosis. Long term studies of minimal CAD report annual cardiac event rates of about 1.5 to 3.0% in a follow up period of 10 years. These subjects will not show up in any non-invasive cardiac stress tests, like stress echocardiography and myocardial scintigraphy, recommended by the civil and military authority. In case of elevated clinical suspicion, and of a stress test which does not clearly exclude or prove to be of a pathological nature, the use of further diagnostic tools is indicated in subjects with an intermediate risk for developing a relevant coronary condition.

Cardiac CT depends upon high temporal resolution to minimize heart motion related artifacts. Rapid image acquisition with ECG gating makes it possible to acquire images in specific phases of the cardiac cycle. Current-generation Multi Detector Computerized Tomography (MDCT) systems can create individual images at 83 ms, a level of resolution that can nearly eliminate coronary artery motion in individuals. CTA has been validated when compared to invasive coronary angiography as the gold standard. MDCT systems with EC gating are capable of acquiring 4 to 64 sections simultaneously of the heart. In the current MDCT systems, the slices can be acquired at 0.5 to 0.75-mm section widths. Triggering at a predetermined offset from the ECG-detected R wave is the current mode for measuring coronary calcium and to perform CTA.

Coronary calcium assessment for diagnosis of atherosclerosis and for risk stratification for future cardiac events has undergone significant validation over the last years. The presence of calcified plaques is sensitive for diagnosing obstructive CAD (95% to 99%) in patients over 40 years of age. Calcified plaque, present in nonobstructive lesions, in asymptomatic persons is a rationale for aggressive risk factor modification. But the rate of coronary plaques without any calcification is 8% to 30% in the literature.

CTA is a non-invasive technique, performed to evaluate the lumen and wall of the coronary artery. It is a useful tool, especially in ruling out stenosis in patients with intermediate risk. It demonstrates negative predictive values of 96% to 100%.

Advanced tomographs use modern dose modulation techniques in order to reduce radiation exposure. MDCT is now possible with mean radiation exposure below 3 mSv. Our last CTA in 2007 was successfully performed by 1.7 mSv.

All aircrew members of the German Army, Air Force and Navy are routinely investigated every 3 years at the GAFIAM in Fuerstenfeldbruck. When they are older than 40 years they are examined there annually. This medical check routinely includes 12-lead ECG at rest and a 12-lead stress-ECG to maximal effort, to exclude rhythm disturbances, to assure normal blood pressure regulation before, during and after physical stress, and to exclude CAD associated with high degree stenosis.

Ventricular rhythm disturbances (Lown classification III and higher) and new ST-segment depressions (>0.1 mV in the Einthoven and Goldberg leads, or >0.1 mV in the Wilson leads) during stress testing, appearing for the first time in comparison with the previous findings, in asymptomatic subjects, can be the first signs of CAD within the cascade of CAD. In the case of positive findings, further investigations, including MDCT with CTA, were performed at the same day in the German Heart Center and the Technical University of Munich (DIH). At the beginning a Siemens 16-slice-MDCT scanner was used, changing to a 64-slice scanner and in 2006 to a so-called dual source CT-scanner.

As the first step in cases of a suspicious result raising the question of CAD, colorflow doppler transthoracic echocardiography (TTE) is performed to exclude cardiomyopathy and/or valve diseases. In case of a normal TTE, MDCT with CTA is performed on the same day.

Between January 2003 and March 2004, 3409 bicycle ergometries in asymptomatic aircrew members were routinely performed at the Institute of Aviation Medicine of the German Airforce (GAFIAM). In 59/3409 asymptomatic pilots (1.7%) MDCT investigation (calcium-scoring and CTA) was performed, because of new ST-Segment changes (38/59) or new higher degree rhythm disturbances (21/59). All were older than 40 years. Fifty of fifty-nine showed normal coronary arteries, so 85% of suspicious ECG-findings CAD could be excluded.

Invasive coronary angiography was performed in 9/59 subjects, followed by 5/9 drug eluting stent implantation because of confirmed stenosis greater than 50%, four of nine showed stenosis less than 50%. The highest degree of stenosis detected was 90%. Two subjects showed diffuse atherosclerosis. Six percent with stenosis greater than 30% had a zero-calcium score and would not have been detected by fluoroscopy.

There were no false positive CAD results by CTA. No cardiovascular events were observed in airmen with exclusion of CAD by CTA within the follow-up period.

Medical history and risk factors in this population seem to imply that they did not accurately predict who really would have a stenosis.

Important for flight surgeons is the detection of CAD in the early asymptomatic stage, with calcified and/or pure soft plaques, to prevent any acute coronary syndrome.

Non-invasive exclusion of CAD by MDCT is possible in aircrew members with an intermediate coronary risk, even with new higher degree ventricular rhythm disturbances or with nonconclusive ST-segment depressions during routinely performed stress testing ECG. MDCT with submillimeter resolution is a fast, safe, inexpensive and relatively simply procedure. The radiation dose remains a matter of concern. Use of CTA as a screening test in asymptomatic persons is not recommended.

MDCT with CTA reduces the number of coronary angiographies performed for diagnostic purposes only. Symptomatic patients and medical checkups upon stenting of coronary vessels remain the domain of invasive coronary angiography.

Early detection of CAD might prevent fatal cardiovascular events and permanent DNIF status. With information provided by MDCT, convincing patients to start lifelong aspirin and lipid lowering medication would be an easier task for the physician.

Volanti subvenimus: We as flight surgeons are responsible for our pilots and their families.

Presented by Christoph Wonhas MD, LtCol, MC, FS, GAF at the USAFSAM as one of the AAMIMOs 2007; (Course Director Col. Hadley Reed)

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