



## A Brief History of the Air Force Medical Service through the mid-1990s

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### Creation

The Air Force Medical Service originated in World War II, when American airpower was still subordinate to the U.S. Army. The Air Surgeon, Maj. Gen. David N.W. Grant, aided by resourceful combat physicians such as Colonels Malcolm C. Grow and Harry Armstrong, established new programs of medical support for American flight crews. Col. Grow, who later became the first Surgeon General of the U.S. Air Force, developed a new armor suit for bomber crews of the Eighth Air Force in England.

In September 1947 the Air Force won independence from the U.S. Army. But many Air Force support functions, such as medical care, remained Army responsibilities. Grow, who succeeded Grant as Air Surgeon in 1946, began a campaign to win Air Force medical independence from the U.S. Army Medical Department. Grow was supported by the Air Force Chief of Staff, the Air Force Association, the American Medical Association, and the Hoover commission on the organization of the executive branch. In the summer of 1949, Air Force General Order No. 35 established the Air Force Medical Service with the following officer personnel components:

- a. Medical Corps
- b. Dental Corps
- c. Veterinary Corps
- d. Medical Service Corps
- e. Air Force Nurse Corps
- f. Womens' Medical Specialists Corps

The order stated that "The above listed corps shall consist of those personnel transferred from corresponding corps of the Department of the Army, and personnel subsequently commissioned in the respective corps of the Medical Service, United States Air Force. Personnel appointed in the above corps will be carried on separate promotion lists." Each officer corps also received a contingent of enlisted medics. The effective date of the creation of the Air Force Medical Service was 1 July 1949. A total of 3,706 Army officers were selected for transfer to the Air Force: 1,182 in the Medical Corps; 424 in the Dental Corps; 78 in the Veterinary Corps; 1,197 in the Nurse Corps; 733 in the Medical Service Corps; and 90 in the Women's Medical Specialists Corps.

The Air Force Medical Service issued its first officer corps badges in 1955. As a symbol, designers chose the sign of Aesculapius, the ancient Greek god of healing. It was a single snake entwined around a staff. This distinguished the Air Force Medical Service from the Army Medical Department, whose symbol was the two snakes and staff of the Greek god Hermes. When the AFMS emblem was designed in 1968, it also carried the staff of Aesculapius. (The Navy Medical Department used the standard U.S eagle and shield as its symbol.)

In later years, the Women's Medical Specialist Corps evolved into the Biomedical Sciences Corps, which was established in 1965. The Veterinary Corps was disestablished in April 1980.

### **The Korean War**

The Korean War (July 1950-July 1953) was the first war of the U.S. Air Force Medical Service.

In the fall of 1950 the heavy United Nations casualties almost overwhelmed the meager resources of the Allied medical services in the Far East. When North Korean troops invaded South Korea in June 1950, Far East Air Forces (FEAF) had only about 30 doctors, 30 nurses, and 25 Medical Service Corps officers to support the entire Air Force population in Korea, Japan, Guam, Okinawa, and the Philippines. FEAF medics responded with hard work and courage, helping United Nations combat units to rally and eventually drive the invaders back to the North. Over the next eighteen months, FEAF medical forces, aided by a national doctor's draft, shared in the wartime military buildup. The Air Force Medical Service itself increased from 3400 to 8300 medical officers and from 8000 to 17,500 enlisted medics. The FEAF medical service increased to 236 physicians, 210 nurses, and 161 dentists. Only one-fourth of FEAF medics, however, actually served in Korea, because the Air Force could operate effectively from other Far Eastern bases, safe from the dangers of the ground war.

The Korean War established aeromedical evacuation, which had already proved valuable in World War II, as the preferred method of evacuation for United States casualties. Although bad weather, mountains, and enemy fire hampered aeromedical evacuation in

the Korean War, the Air Force's rescue helicopters, C-47s and C-54s still managed to evacuate most of the war's casualties.

In the first months in Korea, the U.S. Army and U.S. Marines still preferred rail and sea evacuation for their casualties. The new Air Force Medical Service did not have enough medical personnel in theater to staff a system of aeromedical evacuation flights from Korea to Japan. Poor communications between Korea and Japan also hampered the proper scheduling of return cargo flights for carrying casualties.

To cope with the rush of casualties, Air Force H-5 rescue helicopters of the 3rd Air Rescue Squadron went into action as front-line medical craft. C-47 transports of the 315th Air Division, carrying aeromedical crews, also flew into the most forward airstrips, even under enemy fire, and saved thousands of American lives. The Air Force's 801st Medical Air Evacuation Squadron (MAES) was one of the first units to receive a Distinguished Unit Citation, for evacuating more 4700 casualties from the Chosin Reservoir. Many 801<sup>st</sup> flights originated from Sinanju airfield in late November, where 2,700 patients were evacuated. The 801<sup>st</sup> MAES helped the embattled 1st Marine Division at Chosin Reservoir to execute a successful fighting withdrawal to the port of Hungnam on the northeast coast of Korea. The Army soon set up its own helicopter evacuation service, and by late 1951 aeromedical evacuation enabled the U.S. Navy's hospital ships in the theater to serve as floating hospitals rather than as transports. Most American patients were flown to Japan, Hawaii, and the States.

At the start of the war, the Army and Air Force still had not reached agreement on a division of aeromedical responsibilities. By December 1951, however, the Army and the Marines, with approval of Air Force Headquarters, assumed primary responsibility for forward medical evacuation. The Army and Marines soon acquired their own helicopters for that purpose. In December 1953, however, the Air Force was given responsibility for organizing and staffing aeromedical staging facilities, even in forward areas. The medically designed C-131 Samaritan joined the Air Force's aeromedical fleet in 1954.

While meeting the special needs of the Korean War, the Medical Service began to construct its own hospital facilities at each Air Force base around the world. In the 1950s the Surgeon General's Office helped design the first major USAF hospitals at Elmendorf, Travis, Andrews, and Lackland AFBs. The threat of Communist China and the Soviet Union remained after the Korean War armistice of July 1953. The Air Force Medical Service found that its wartime mission, size, and structure would remain valid in the ensuing "Cold War." In 1957, the Lackland AFB Hospital became the Air Force's largest medical facility, with 500 beds. Three year later another 500 beds were added. In March 1963 it was renamed after Maj. Gen. Wilford Hall, USAF, MC.

The Korean war also established the Medical Service's need for air transportable hospitals. Facilities for Far East medical groups and squadrons, although adequate, were constructed out of shells and Quonset huts, with no common plan or design. In the United States, the Medical Service in 1953 conducted a successful experiment in transporting a hospital by air, but the first airborne medical assemblages, containing 36-beds, were not

procured until 1955. They went on line in 1959, with the creation of the 1<sup>st</sup> Medical Service Wing, commanded by Col. Robert A. Patterson, who later became Surgeon General.

### **Aviation Medicine**

During the Korean War, the Medical Service began to develop its core specialty – aviation medicine. After the American Medical Association recognized aviation medicine as a specialty in 1953, Air Force physicians were soon offered residency training programs in the new field. Flight surgeons— doctors specially trained in the medical challenges of flight— were the primary practitioners of this new specialty. Flight surgeons served in Korea and Japan with deployed Air Force squadrons, just as they had in World War II.

Within a few months after the start of the Korean War, at least one flight surgeon was assigned to each Air Force squadron. These operational medics deployed and lived with their units. Flight surgeons often flew missions, including combat missions, to understand the medical problems of the unit's aircrews. Aided by medical researchers at the Air Force's large medical centers, flight surgeons over the last fifty years have steadily reduced the amount of workdays lost to disease and non-battle injuries.

In the 1950s, Medical Service researchers began to explore the aeromedical problems of new jet fighters and even looked forward to the space age. Led by Col. John Paul Stapp at Holloman AFB, New Mexico, medics and engineers probed human physiological limits to develop safer ejection and crash systems. Other Air Force physicians, such as Major David G. Simons, experimented with extremely high-altitude effects on the human body. Assisted by Air Force doctors, brave officers like Capt. Joseph W. Kittinger, Jr., experimented with bailouts at altitudes above 100,000 feet. Medical researchers also sought ways to reduce the harmful effects of jet engine noise, prevent the fatigue caused by long-range flights, and increase the efficiency and safety of operations in arctic climates.

One of the most important supporters of aviation medicine was Gen. Bernard A. Schriever, head of the vast Air Research and Development Command. In the late 1950s he helped consolidate and coordinate many previously separate aerospace medical functions, creating an single aeromedical division.

### **Space Medicine Research**

In 1959 aviation medicine was renamed "aerospace medicine" by the American Medical Association. The Air Force Medical Service had been involved in space medicine since 1949, when Maj. Gen. Harry G. Armstrong, the second Surgeon General, inaugurated a program of Air Force medical support to manned space exploration. General Armstrong established a department of space medicine at the School of Aviation Medicine, and appointed several former German Air Force physicians, led by Dr. Hubertus Strughold, to explore this new field. Professor Strughold had an important influence on space

development in the following decades and would be known as the "Father of Space Medicine."

After the pressures of the Korean War had passed, space medicine made rapid progress. Even after the National Aeronautics and Space Administration took control of space exploration in 1958, space support remained an key Air Force priority. Air Force medics actively experimented with the effects of weightlessness, extreme heat and cold, and sensory deprivation on the human body. The first two flight surgeons for the Mercury, Gemini and Apollo programs of the 1960s were Lt. Col. William K. Douglas and Lt. Col. Charles Berry, both of the Air Force. Dr. Berry began his work in the space program when assigned to the Surgeon General's Office in 1958.

After the successful Apollo program, the Air Force continued to supply medical support to the SKYLAB and Space Shuttle programs. Many of the aeromedical technologies developed in the space program, such as biometric telemetry, have been adapted to use in normal peacetime medical settings.

### **The Vietnam War**

In the 1960s, Air Force medics dedicated themselves to halting the spread of communism and relieving the suffering of war in Southeast Asia. Besides flight surgeons and other physicians, Air Force dentists, nurses, and medical technicians established a presence in Vietnam and Thailand. The roughly 1,900 Air Force medics supporting Southeast Asia in the summer of 1968 at the peak of the war represented about 5 percent of the 41,000 military personnel assigned to the Medical Service worldwide.

In the first deployments, Air Force medics lacked adequate fixed facilities. The Vietnamese and Thai hosts were unable to provide suitable buildings, and the Air Force itself had nothing to deploy. By mid-1966, however, the Medical Service procured modular steel boxes, 10 by 40 feet, and shipped them over water to Southeast Asia, where they were connected and equipped as medical units. By 1968, the 12th USAF Hospital at Cam Ranh Bay AB was the largest in-country Air Force facility, and the second largest hospital in the Air Force, with 475 operating beds and a 100-bed casualty staging facility. The Cam Ranh Bay airfield was also the main aeromedical evacuation hub for Southeast Asia.

Advances in aeromedical evacuation improved medical care during the Vietnam War. Rapid evacuation from Vietnam's battlefield by a helicopter and jet transport saved many lives. Helicopters picked up most battle casualties shortly after they were wounded. PACAF operated a scheduled in-country aeromedical service and also a transoceanic jet service to the hospitals at Clark AB, Philippine Islands., and Yokota AB and Tachikawa AB, Japan. MAC helped evacuate many casualties out of Vietnam, and handled all patient movement to the States. The Air Force acquired its first specially designed aeromedical jet, the C-9A Nightingale in August 1968, and the C-9s began to fly missions in Southeast Asia in March 1972. Ordinarily, however, transport planes,

equipped with litters, flew most of the war's aeromedical missions. Most aeromedical evacuees were battle casualties from the Army and Navy.

Because of advances in aeromedical evacuation, Air Force wounds in Southeast Asia were much less likely to result in death than in the Korean War. Only 25 percent of the non-fatal Air Force wounds in Vietnam required hospital care. The nature of the Vietnam air war was a main cause of the low Air Force casualty rates. Except for strong opposition from anti-aircraft missile batteries in North Vietnam, the Air Force enjoyed total air superiority throughout the war. But the high quality of Air Force medicine in Southeast Asia also can be credited with sustaining Air Force effectiveness in America's longest war.

During the Vietnam War, the Air Force Medical Service began to strengthen its efforts to ensure a health and fit fighting force. Under the sponsorship of Lt. Gen. Richard L. Bohannon, a new physical fitness program was adopted by the Air Force in January 1970. This program, developed at Wilford Hall USAF Hospital by Lt. Col. Kenneth H. Cooper, USAF, MC, helped popularize aerobic fitness—running, swimming, and bicycling—in the 1970s.

### **Readiness 1979- 1990**

Starting in 1978, military planners assumed that Air Forces bases in Europe would likely suffer many more casualties than previously estimated. In November 1979, at Keesler AFB, the Air Force Medical Service began a series of Medical Red Flag exercises to test and exercise its wartime readiness. Most of the hardwall modules used in the Vietnam War were converted to tents in the late 1970s. In the early 1980s, the Medical Service began to preposition several large contingency hospitals, such in Europe and Asia. Special reserve units were created starting in 1982 to help the active duty medical force staff these contingency hospitals in wartime.

Modernization of the air transportable hospitals continued through the 1980s. In late 1983, the Surgeon General approved a five-year program to enlarge the standard 24-bed air transportable hospital to 50 beds. The new design was also more flexible, providing for 14, 25 or 50 beds. By mid1990, the Air Force had more than two dozen 50-bed air transportable hospitals. Most were attached to the Continental United States (CONUS) tactical fighter wings for rapid deployment where needed.

In 1985, the Air Force also started to develop aeromedical staging facilities to complement air transportable hospitals deploying to Europe and Asia. These facilities had up to 250 beds for holding patients awaiting evacuation by the Military Airlift Command to more advanced medical treatment in other theaters. Since only a few host nations offered suitable buildings for allied medical units, the Air Force started developing staging facilities constructed mainly with tents. With adequate site preparation, they could be ready in five days.

By the late 1980s, the Air Staff foresaw the scarcity of airlift for major deployments. In response, the Air Force began prepositioning medical supplies and equipment in major foreign theaters. Many equipment items, such as ambulances, were already positioned by 1990. Several complete facilities were also stored abroad.

### **The Gulf War and Recent Contingencies**

On August 8, 1990, just six days after Iraq's invasion of Kuwait, the Air Force Medical Service began its largest deployment since the Vietnam War.

In August and September 1990, the Air Force placed in-theater the first U.S. medical facilities capable of both surgery and chemical decontamination. The first Air Force medical teams arrived in the Arabian Peninsula two days after the combat units. These teams were the main source of medical support to all American forces until the second week in September 1990.

The overall Desert Shield medical deployment was much faster than during the Vietnam War, even though 175 more hospital beds deployed (925 versus 750). Air transportable clinics and hospitals were the key to rapid mobility. The clinics deployed immediately with their flying squadrons. The first squadron medical elements and air transportable clinics left the US on August 8, 1990, just one day after the first fighter aircraft deployments. The first air transportable hospitals departed on August 11 from Shaw, MacDill and Langley Air Force Bases.

In mid-August, because of a shortage of airlift capability, CENTCOM directed less essential support elements to deploy by sealift or at least several days after their lead combat elements. By late August, the air transportable hospitals began arriving about two weeks after their combat squadrons. Most of the air transportable medical facilities were committed to the operation by late October. In November, the Persian Gulf deployment expanded to include hospitals from ten CONUS air bases.

#### **The Air Transportable Hospital**

Before the start of Desert Shield, the 50bed version of the air transportable hospital (ATH), including personnel and mobility bags, was designed to be transported by six C-141 aircraft. Once on site, weather and other conditions permitting, the ATH staff and base support units could erect the hospital within 24 to 48 hours.

A combination of hardwall shelters and modular tents, the hospital was equipped with several exterior air conditioning units for operations in harsh climates. The hospital deployed with sophisticated medical equipment and supplies, and a competent staff of 128 medics. The three hardwall shelters of the 50-bed hospital called ISO shelters after the manufacturer, the International Standards Organization had two surgical tables, a laboratory, an X-ray machine and blood storage equipment. The hospital's dental chair

could serve as a third operating table. In the early months of Desert Shield, the staff of the deployed hospitals found that most of their equipment worked well in the harsh desert climate. Each air transportable hospital was equipped to function for 30 days without resupply and was supported by a 19-person decontamination team to handle chemical warfare casualties.

The air transportable hospitals were the backbone of the Air Force medical treatment system in the Arabian peninsula, which lacked large prepositioned contingency hospitals. Each hospital could meet the medical needs of a deployed tactical fighter wing with up to 72 aircraft and about 4,000 people. The hospital also assisted the squadron medical elements, air transportable clinics and aeromedical staging facilities that deployed with their tactical and strategic units.

In Germany and England, several contingency hospitals and smaller tactical fighter wing hospitals were already in place. The Air Force contingency hospitals, containing from 500 to 1,500 beds, were "turnkey" facilities fully equipped and calibrated, needing only professional staff deployed from CONUS to begin operations. By early February 1991, these hospitals were ready for full operation.

#### **Desert Storm, January-February 1991**

Most Air Force planners did not anticipate that the air and ground fighting during Desert Storm would hardly tax the medical system. Coalition casualties were so light that the staff at Air Force contingency hospitals in Europe, like many of their counterparts in the Arabian Peninsula, practiced very little combat medicine. From August 1990 to March 1991, disease and non-battle injuries accounted for most of the patients of Desert Shield/Storm who were evacuated from Southwest Asia to Europe. Aggressive preventive medicine was effective in minimizing the losses to disease. Orthopedic injuries alone accounted for about 43 percent of the evacuees from the theaters.

Final statistics on the size of the Air Force medical deployment are impressive. The 15 air transportable hospitals, with help from a 250-bed contingency hospital staffed by the Military Airlift Command, supplied most of the in-theater hospital beds and staff for the Air Force in Desert Storm. First-stage medical care and evaluation was available at 31 deployed air transportable clinics, a few from the Strategic Air Command. The Air Force eventually provided 925 beds in Southwest Asia staffed by 4,900 medics, almost one out of every ten Air Force people who deployed. The Air Force also deployed 6,900 medics to staff 3,740 beds in the Air Force fixed and contingency hospitals in Europe. By the end of the Gulf War, the active-duty Air Force Medical Service was larger than ever—14,500 officers, 30,000 enlisted medics, and about 9,500 civilians.

The reserve mobilization and deployment was also essential to the medical deployment. One-half of the Air Force medics who went to Europe and Southwest Asia by February 1991 were members of the Air National Guard and the Air Force Reserve. The reserves accounted for almost 97 percent of the aeromedical evacuation cadre.



Although the deployment was extremely rapid and successful by historical standards, the Medical Service was fortunate that hostilities began 163 days after the initial mobilization. Since there was no guarantee that this lead time would be available in a future war, the Air Force Medical Service immediately began to ensure that its next response would be even more timely and efficient.

A decade later, in Operation Allied Force in the Balkans, the Medical Service quickly responded with the well-tailored medical support and won the praise of the USAFE line commanders. In September 2001, after terrorist attacks on the World Trade Towers in New York City and on the Pentagon, the Medical Service again assisted in a timely manner with mobile facilities and fixed emergency services established at McGuire AFB, New Jersey, with emergency clinical services at the Pentagon, and several weeks later with environmental sampling teams deployed both in Washington, D.C. and in New York City.

### **The Air Force Medical Service since the Gulf War -- Peacekeeping and Humanitarian Operations**

Since the early 1950s the Air Force Medical Service has assisted United States humanitarian and peacekeeping operations around the globe, aiding victims of natural disasters and wars. For example, the Medical Service helped give aid to victims of earthquakes in Europe, to victims of hurricanes in the United States and Latin America, to Southeast Asian orphans and refugees during the Vietnam War, and to Cuban refugees in the 1980s. After the collapse of the Soviet Union in the early 1990s, the Medical Service began to support the increased tempo of Air Force humanitarian and peacekeeping operations. The Medical Service was particularly active in supporting operations in the Balkans.

To respond to changed conditions in the mid-1990s, the Medical Service started to reengineer the size and configuration of its air transportable hospitals and aeromedical evacuation systems, making them more flexible and responsive. Improved coordination between the active-duty Medical Service and its reserve components was especially important. In January 1995 the Deputy Surgeon General, Maj. Gen. Charles H. Roadman II, inaugurated the "Mirror Force" initiative to promote closer integration of active-duty and Reserve medical components. Starting in 1995, General Roadman's staff also began to reengineer medical readiness units, small hospitals and clinics. In 1997 the Medical Service began to train special "critical care in the air" evacuation teams to reduce the need for medical facilities located near active combat fronts. This entailed a new strategy that moved most definitive care away from active contingency theaters to rear areas or the Continental United States.

### **Reengineering Air Force Peacetime Healthcare -- the 1990s**

Changes in peacetime healthcare followed soon after the collapse of the Soviet Union produced a restructuring in all Department of Defense activities. The Medical Service began to reengineer peacetime healthcare in 1992 with a series of internal "managed

care” reforms. New prevention efforts also appeared. In October 1992 the Air Force adopted a cycle ergometry test as part of the annual aerobic fitness test, abandoning the run/walk test. Reengineering the Air Force's base-level medical system was also necessary. In 1993, the Medical Service adopted a new base-level organizational template, the Objective Medical Group, to increase medical responsiveness to the needs of Line commanders. In 1994 the Medical Service began to reduce its overall size and reorganize its clinics and hospitals. Originally known as "Right-Sizing," this restructuring was later renamed "Tailored Force."

These isolated reforms did not completely address new requirements. So in 1995 the Deputy Surgeon General, Maj. Gen. Charles H. Roadman II, began to design a five-part Medical Service “Parthenon” strategy. The strategy emphasized a coordination and acceleration of readiness reengineering, structural reforms, managed care innovations, customer satisfaction efforts, and disease prevention programs.

Prevention received special emphasis. Already in October 1994 the Medical Service had established the Office for Prevention and Health Services (OPHSA) at Brooks AFB, Texas. In July 1995 the Surgeon General inaugurated a new program called Put Prevention into Practice, a group of management tools devised by OPHSA to increase the appropriate delivery of clinical preventive services. In January 1996 the Chief of Staff and Secretary of the Air Force directed implementation of Health and Wellness Centers at each Air Force base. Each center provided a single point of contact for fitness information, training, and testing. In a related move, in June 1996 the Surgeon General convened a Suicide Integrated Process Action Team that significantly reduced the Air Force suicide rate. In January 1998, the Medical Service inaugurated an annual "preventive health assessment" (PHA) questionnaire to identify risk factors from each airman's lifestyle, genetic background, individual health history, and occupational exposure. In conjunction with the cycle ergometry test, the PHA pinpointed airmen who required special preventive screening and services. The most important lifestyle risks targeted were smoking, alcohol abuse, and injuries. The Air Force was the lead Armed Service for DoD tobacco use cessation.

After 1995 structural reforms of the AFMS Parthenon began to work on reengineering the six Air Force medical centers. A renewed Customer Satisfaction program emphasized both high-quality healthcare and the professionalism and caring attitudes of Air Force medical providers. In this program, the Medical Service trying to devise ways to fulfill its historic obligations to Air Force retirees and their families. The managed care reforms of the Parthenon strategy included active support of the DoD TRICARE program, which attempted to preserve substantial medical benefits for retirees while reducing the size of the active duty health care system.