



# **THE AIR FORCE** **Medical Service** **1949-2024** *a Commemorative History*

*James S. Nanney, Ph.D.*  
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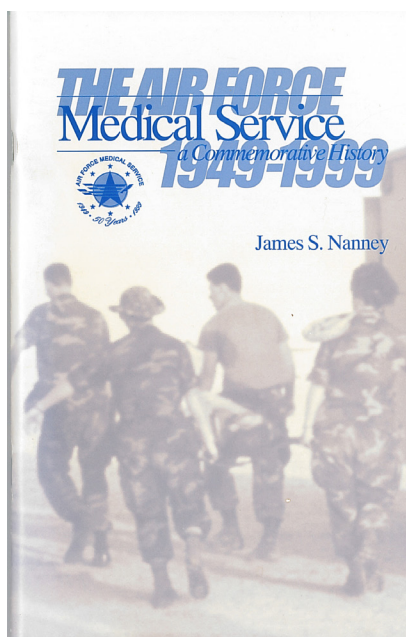


# CONTENTS

<b>Preface .....</b>	<b>6</b>
<b>Aerospace Medicine and Health Services Support .....</b>	<b>7</b>
The Air Force Medical Service	
The Surgeon General’s Office in Washington D.C.	
<b>Excerpt from the First Historical Report Of the Office of the Surgeon General ....</b>	<b>11</b>
<b>Founding Document .....</b>	<b>15</b>
<b>The Air Force Medical Service in the Korean War .....</b>	<b>17</b>
The Nature of War	
Aviation Medicine	
Logistics and Training	
Preventative Medicine	
Aeromedical Evacuation	
<b>The Air Force Medical Service in the Vietnam War .....</b>	<b>23</b>
<b>The Air Force Medical Service in the Persian Gulf War .....</b>	<b>26</b>
Planning for Rapid Deployment – The 1980s	
Rapid Deployment – August 1990	
The Air Transportable Hospital	
The Mobilization – An Area for Improvement	
Aeromedical Evacuation and Rear Echelon Care	
Desert Storm	
<b>Peacetime Healthcare .....</b>	<b>33</b>
Facilities	
The Patients and their Benefits	
Reengineering Air Force Healthcare – the 1990s	
<b>Major Organizational Changes in the Office of the Surgeon General 1949-1999 ....</b>	<b>37</b>
<b>Reorganizing for a New Century .....</b>	<b>38</b>
<b>The Impact of 9/11 on Medical Operations .....</b>	<b>43</b>
<b>Operations in Afghanistan and Iraq .....</b>	<b>45</b>
<b>COVID’s Impact on the Air Force Medical Service.....</b>	<b>49</b>
<b>Air Force Surgeons General .....</b>	<b>54</b>
<b>Corps Leaders of the Air Force Medical Service .....</b>	<b>58</b>
<b>USAF Medical Service Emblem and the Medical Badges .....</b>	<b>61</b>

# PREFACE

In 1999, Dr. James Nanney, the Air Force Medical Service (AFMS) Historian, commemorated the 50th anniversary of the AFMS by outlining its major medical programs and activities. While much has changed over the last two and a half decades, Nanney's list remains remarkably current and comprehensive: Aerospace medicine and flight surgeons, selection and training of personnel, human factors research and development, community healthcare and preventive services, medical education and basic medical research, and aeromedical evacuation. Although the specifics of each of these activities has evolved, and, in some cases, their organizational and geographic loci have shifted, they all remain part of the AFMS mission set in some form or fashion, whether under the aegis of the Air Force itself, or the Defense Health Agency (DHA). As Nanney noted, all of these activities stem from the basic warfighting mission to support Air Force combat units. In other words, the AFMS commitment to wartime readiness has been a constant throughout its history.



50th Anniversary Pamphlet Cover.

The combat mission of the AFMS has very much dominated the two decades of the 21st century in which the U.S. deployed large forces to Iraq and Afghanistan, which became the proving grounds for modern expeditionary medicine and the possibilities for advanced patient movement in an environment of air supremacy. All the while the AFMS continued

a legacy of organizational dynamism, responding to larger institutional developments in the Air Force and the Military Health System to ensure the currency and competency of its medics and the medical readiness of the Air Force as a whole. Through all of this, the medics of the AFMS have maintained and redoubled their commitment to provide trusted care to their patients across the spectrum of beneficiaries and have answered the nation's call in the face of events such as the

COVID-19 pandemic and natural disasters that have strained civilian medical systems to their limits. Officer, enlisted, and civilian, the men and women of the AFMS should take pride in the accomplishments of their predecessors and be inspired by them as they continue the legacy of which they are a part.



Air Force Surgeon General James Roudebush and Air Combat Command Surgeon Brig. Gen. Thomas Travis look on as 332nd Medical personnel off load wounded Marines from a Chinook Helicopter on to the Air Force Theatre Hospital at Balad Air Base, Iraq, 27 February 2007.

# AEROSPACE MEDICINE AND HEALTH SERVICES SUPPORT

## The Air Force Medical Service

The Air Force Medical Service, although officially created on 1 July 1949, has origins that extend to the medical service of the Army Air Forces in World War II, and, to some extent, in the Army Air Corps medics' pioneering aeromedical work in the 1930s.

The Medical Service's first priority has always been medical support of Air Force combat units. If necessary, entire medical units deployed to forward combat areas to provide care for the warfighters. In support of this basic warfighting mission, the Air Force Medical Service has developed a wide variety of medical programs and activities.



Lt. Col. (Dr.) L.K. Daryanania (left), chief flight surgeon of the 443rd Medical Group, Altus AFB, Oklahoma, treats a pilot in a modern, well-staffed medical facility.

### Aerospace Medicine and Flight Surgeons.

Flight surgeons are doctors specially trained in the medical challenges of flight. Except for the early months of the Korean War, at least one flight surgeon has been assigned to each Air Force squadron with a flying mission. 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. Since 1950, flight surgeons have made a dramatic impact steadily reducing the number of workdays lost to disease and non-battle injuries.

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. In 1959, the Air Force began to use the term "aerospace medicine."

### Selection and Training of Personnel.

Since World War II aviation medical examiners have screened all applicants for aircrew duties, selecting those who meet rigorous standards. The Medical Service also assisted in training candidates for the physical and psychological challenges of flight.

### Community Health Care and Preventive Services.

The Air Force Medical Service has provided a medical unit assigned to each Air Force base since the Korean War. The Medical Service provided not only aircrew medical service but also medical services for all Air Force active duty and family members comparable to what a civilian community of the same size would normally have available. The Medical

Service also has afforded space-available care for retirees, their families, and survivors since the Korean War. Base units referred patients needing more specialized care than locally available to larger Air Force medical facilities at other Air Force bases. Community health care included environmental assessments and preventive medicine programs.

### **Human Factors Research and Development.**

Starting in World War II, Air Force medics have been involved in the development of all Air Force aircraft to ensure that they were optimally designed for human operators and passengers. This was especially important in the development of high-altitude aircraft, fighters, and space vehicles of the Mercury, Gemini, and Apollo programs. Today's health challenges include aircraft operations at very high altitudes, laser threats to vision, night vision enhancements, and critical care operations during aeromedical evacuation flights.



**Lt. Col. (Dr.) John Paul Stapp, brakes to a stop after traveling 632 miles per hour on a rocket-powered sled. Holloman Air Development Center, New Mexico. December 1954.**

### **Medical Education and Basic Medical Research.**

Since the late 1950s, the Medical Service has operated several large medical centers to educate Air Force physicians and conduct basic medical research in areas relevant to the health of the Air Force community.



**Hyperbaric (high altitude) chambers. School of Aviation Medicine 1968.**



## **Aeromedical Evacuation.**

Starting in the Korean War, the Medical Service helped operate a fixed-wing aeromedical evacuation system for all the Armed Forces. Flight nurses and medical technicians cared for patients returning on cargo aircraft modified for medical use. The medically designated C-131 Samaritan joined the aeromedical fleet in 1954. The first jet aeromedical flights began in 1961, and the special C-9A Nightingale jet aircraft went into service in 1968. Aeromedical evacuation has become even more important in the 1990s with the adoption of a new casualty replacement policy and a smaller medical presence in overseas contingency theaters.

## **The Surgeon General's Office in Washington D.C.**

The Surgeon General's Office in Washington, D.C. has served as the focal point of several contributions to science, medicine, and the Air Force Mission.

### **The Air Force Hospital System.**

In the 1950s, the Surgeon General's Office helped design the first major USAF hospitals at Elmendorf and Travis, Andrews, and Lackland AFBs. A fully integrated and regionalized USAF Hospital System was officially organized by the Surgeon General's office in July 1969. It consisted of 84 facilities in the continental United States and 60 overseas. In 1999, the Medical Service operated 78 medical facilities – 41 clinics and 37 hospitals.

### **Space Exploration.**

Maj. Gen. Harry G. Armstrong, the second Surgeon General, inaugurated a program of Air Force medical support to manned space exploration. A personal crew flight surgeon for the Mercury, Gemini and Apollo programs of the 1960s was then Lt. Col. (Dr.) Charles Berry, USAF, Medical Corps, who began his work in the space program when assigned to the Surgeon General's Office in 1958. The Surgeon General's Office continued to supply Air Force medical support to the SKYLAB and Space Shuttle programs. To this day, Air Force flight surgeons continue to work closely with the National Aeronautics and Space Administration to provide medical support for ongoing and future missions.



**Maj. (Dr.) Dave Simons flew into space (about 100,000 feet altitude) in the "Man High II" balloon in August 1957.**

### **Air Transportable Hospitals and Contingency Hospitals.**

The Surgeon General's Office began to develop air transportable contingency medical units during the Korean War. The Air Force first employed lightweight, modular, air transportable hard wall hospitals during wartime in Southeast Asia in 1966. However, most of the hard wall modules were converted to tents in the late 1970s. In the 1980s, the Medical Service prepositioned several large contingency hospitals in Europe and Asia. In 1990-91, the Surgeon General's Office coordinated the deployment of 15 air transportable hospitals to the Persian Gulf in Operations DESERT SHIELD/STORM, and also oversaw deployment of medical staffs to the contingency hospitals in Europe. In the 1990s, the reengineered air transportable hospitals were used in a variety of humanitarian and peacekeeping operations around the globe.



**Lt. Gen. (Dr.) Richard Bohannon conducts a fitness walk along the Potomac River. Washington D.C. 1969.**

### **Aerobic Fitness.**

Under the sponsorship of Lt. Gen. Richard L. Bohannon, the aerobics physical fitness program developed by Lt. Col. Kenneth H. Cooper, USAF, Medical Corps, was adopted by the Air Force in January 1970. This program helped popularize aerobic fitness and running in the United States in the 1970s. In 1992, the Medical Service adopted cycle ergometry for annual physical fitness tests. The cycle ergometry test was replaced in 2004 by the fit-to-fight program.

### **Health Promotion.**

In July 1977, Lt. Gen. George E. Schafer, USAF, Medical Corps, announced the establishment of the Air Force-wide Health Education Program to encourage people to become more knowledgeable about and encourage participation in the management of their own health care; additionally, he established a health education coordinator at each medical treatment facility. The Surgeon General's Office expanded this program in the late 1980s, and in January 1996, established base-level Health and Wellness Centers. Today, prevention and health promotion receive unprecedented emphasis in the Air Force Medical Service.



**A study of aerobics training for physical fitness. Capt. Dennis R. Carroll runs the tread mill as Master Sgt. Roy Wilson checks his time and Maj. (Dr.) Kenneth Cooper monitors his reactions.**

# EXCERPT FROM THE FIRST HISTORICAL REPORT OF THE OFFICE OF THE SURGEON GENERAL, USAF

## Maj. Gen. Malcom Grow's Summary Report

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Report of the Medical Service

1 July 1949 - 30 November 1949

1. Under authority of the National Military Establishment Transfer Order 36, 1949, as implemented by Joint Army Air Force Adjustment Regulation 1-11-62, 16 May 1949, the Medical Service, U.S. Air Force, with the Surgeon General, U.S. Air Force, as the head thereof, was established by Air Force General Order No. 35, 8 June 1949.

2. In compliance with the above regulations and order the Medical Service and the Office of the Surgeon General became functionally effective 1 July 1949. In the reorganization under the Surgeon General, the following principal positions, with appropriate functions, were established:

- Deputy Surgeon General
- Special Assistant to the Surgeon General
- Chief of Dental Service
- Director of Professional Services
- Director of Plans and Hospitalization
- Director of Staffing and Education

Formerly the subdivisions of the Air Surgeon's Office consisted of several divisions and branches organized on a functional basis.

3. The reorganization was of necessity based on estimates of what was considered to be the probable scope and character of the workload and it was necessary to effect this reorganization as quickly as possible. It must be borne in mind that much of the work now handled by the Surgeon General of the Air Force was formerly accomplished by the Surgeon General of the Army. In taking over these functions it was difficult to accurately estimate organizational and personnel requirements.

4. It will require time, study and practical experience to fit the organization to the task, and arbitrary or hasty decisions in reducing the number of divisions or branches should be avoided. Detailed reports of the status of the work of these various divisions and branches, as of 30 November 1949, will be found in the appendices of this report and, for the sake of brevity, will not be discussed in detail in the body of the report.

5. The following problems appear from a broad viewpoint to be the most urgent:

### a. Shortage of Medical and Dental Officers:

All support possible should be given by the Air Force to correct this condition by rendering the Medical Service attractive and by a continuing drive for the procurement of this class of personnel. While the shortage of dental officers is not as serious as that of medical officers, continuing efforts along lines of procurement will be necessary.

### b. Shortage of Other Medical Personnel:

The personnel situation in other allied medical categories, such as the Nurse, Veterinary, Medical Science, and Women's Medical Service Corps, is much better and should continue to improve until full requirements are met.

#### c. The Air Force Reserve Medical Program:

The Air Force Reserve Medical situation is not good and a great deal of effort in organization, planning, procurement, assignment, and training of personnel will be required. It will be noted that all medical reserve matters have been previously handled by the Army exclusively, and insofar as the Surgeon General of the Air Force or the overall Air Force Reserve planning is concerned, this is a new and unfamiliar field.

It is hoped that as appropriate and practical organizational structures and funds are provided, this service can be made more attractive to both officers and men of the Air Force Medical Reserve. It was originally proposed to have a small but strong Medical Reserve Branch or Division under the Directorate of Staffing and Education, composed of reserve medical officers on extended active duty. This proposal was disapproved by higher authority. At present one regular officer is assigned to planning reserve activities and, while he has been most efficient, it is felt that the scope and importance of this work cannot be adequately handled by one officer.

It is still the opinion of the undersigned that several active and interested reserve officers are badly needed to execute the large amount of planning necessary to develop this program and, in addition, it would seem advisable to have one of these men in the field part of the time making personal contacts. At the moment it appears that the Air Force Medical Reserve program is in worse condition than any of the functions of the Surgeon General's office. Basic planning must be closely coordinated with the Air Force Reserve program and cannot be delegated to the Continental Air Command. That organization apparently cannot handle basic plans and should, therefore, serve as an action agency.

#### d. Medical Planning:

With the establishment of the Air Force Medical Service it was apparent that a great amount of work was necessary in forming basic policies and procedures upon which to develop plans for the organization and integration of all phases and echelons of medical service into Air Force mobilization, logistic and operational planning. Prior to 1 July 1949, the major part of planning for medical support required by the Air Force was the responsibility of the Surgeon General of the Army. Consequently, the methods utilized by the Surgeon General of the Army in determining requirements for the type, assignment, deployment, and utilization of medical units, personnel, and facilities followed those concepts applicable to ground force operations, which are in many respects inflexible and incapable of adaptation to Air Force operational needs.

There are now in process of development new Air Force Medical TO&E units considered necessary to provide medical support for the Air Force, as indicated by analysis of Joint Chiefs of Staff policies and Air Force mobilization and logistic plans. A great amount of work will be necessary to accomplish this task, and close contact with all Air Force interested staff agencies must be maintained. In addition, these plans must be coordinated with the Army and the Navy and, to a lesser degree, with civilian defense agencies.

#### e. Air Evacuation:

As evacuation of the sick and wounded by air is now the primary approved method, and this task has been turned over to the Air Force, a great deal of integrated planning with the sister services is necessary for not only peacetime operations but more particularly for planning in the event of an emergency, at which time this function may become enormous.

#### f. Medical Materiel:

The development of light medical equipment especially designed for airborne transportation is being carried out at the Armed Services Medical Procurement Agency and should be pushed forward as rapidly as possible. The



first TO&E organization to be so equipped should be an Air Force dispensary; secondly, a 100-bed hospital should be developed. When developed and approved, sufficient of these units should be procured for the equipment of the Strategic Air Force. This development should receive a high priority.

#### g. Hospitalization:

Most of the Air Force hospitals are of World War II-type construction. Many of the permanent prewar hospitals are too small to handle the expanded contemporary Air Force base personnel, but some of these hospitals lend themselves to expansion by the addition of wings. In the last year the permanent hospitals at Scott Air Force Base, Mitchel Air Force Base, and Chanute Air Force Base have been taken over by the Air Force for administrative purposes. The Chanute Air Force Base hospital, as an illustration, was one of the best permanent hospital structures in the Air Force and could have been enlarged sufficiently to carry the workload. It is understood that it has been stripped of equipment and is undergoing rather extensive alterations which may render it unsuitable for hospital use. This is believed to be a mistake as the temporary hospital is in very bad shape and will be an increasingly expensive unit to maintain.

Hospital building costs are very high and the problem of providing decent hospital facilities in the future is going to be most serious. It is urgently recommended that whenever possible these permanent hospitals be enlarged sufficiently to carry the load and be used as hospitals. Any other course will be extremely expensive and wasteful of funds. A tight control of these hospitals should be maintained by the Installations Division of the Air Force Headquarters and efforts by Commands to convert them to other uses should be prohibited.

#### h. An Aeromedical Center:

Three years prior to the establishment of a separate medical service for the U.S. Air Force efforts were initiated to establish a medical facility for the Air Force which combined in one institution (1) aeromedical research, (2) aeromedical education and training, and (3) the practice of aviation medicine, which would serve as a means of effectively attacking the numerous medical problems peculiar to military flying. Such an institution has been commonly referred to as an "aeromedical center" and it was conceived of as necessary to provide a medical service for flying personnel which does not now exist, nor does it duplicate any function now being performed by any existing institution either military or civilian.

The necessity of an aeromedical center for the Air Force has been carefully considered by the Committee on Medical and Hospital Services of the Armed Forces and has received the full indorsement of that Committee. On 24 March 1949, the then Secretary of Defense, Mr. James Forrestal, approved the recommendation of the Committee on Medical and Hospital Services and the Secretary of the Air Force instructed to assume the responsibility for initiating necessary action.

JAFAR 1-11-62, 16 May 1949, paragraph 2 b (3) states as follows: "The Department of the Air Force will ... plan, administer, operate, and exercise policy control over base level and troop unit medical attendance within the Department of the Air Force worldwide; research and development in aviation medicine; and the aeromedical program, including an aeromedical center."

On 24 May 1949, the Office of the Air Surgeon was given the responsibility by the Assistant Vice Chief of Staff, U. S. Air Force, for planning for the establishment of the proposed center. On 21 June 1949, a planning board was appointed with Brigadier General Otis O. Benson, Jr., MC, as the Chairman, and instructed to "make studies of and recommendations concerning the establishment of an aeromedical center for the U.S. Air Force". This Board submitted a preliminary report to this office on 1 September 1949, and its final report is expected to be completed by 1 January 1950.

At the present time, and for many years past, the death rate of pilots in the Air Force from aircraft accidents alone is over five times that of comparable ground personnel from all causes combined. Of these accidents approximately two-thirds are attributable to failures in the human element and thus at least potentially amenable to reduction through an improved aeromedical program. Studies of human failure in the operation of aircraft have not been pursued with vigor due to lack of proper, up-to-date facilities and trained personnel.

In addition to the loss of life and limb, the economic factor in aircraft accidents is becoming of major importance. Almost without exception the death of a pilot in an aircraft accident is accompanied by the total destruction of the aircraft concerned. In 1947, the value of Air Force aircraft destroyed from all accidents amounted to over \$129,000,000, of which approximately \$84,000,000 resulted from accidents resulting from human failure. Such losses, which are a serious drain in peacetime, would pyramid in time of an emergency and reach catastrophic levels.

Available information indicates that an aeromedical center cannot be located on Randolph Field, the site of the present USAF School of Aviation Medicine, which would form the nucleus for such a center, due to lack of adequate space. The best location for such an installation has not as yet been determined but should be governed by (1) proximity to civilian medical centers; (2) central location with reference to Air Force activities; (3) central location in relation to Air Force flying personnel center of population; (4) favorable climatic and flying conditions; (5) favorable general environment; (6) separate air base; (7) possibilities of expansion; (8) economy of operation; and (9) vulnerability to enemy attack.

In the interest of economy, and considering the time that could be saved, the aeromedical center should utilize existing suitable facilities if such can be made available. However, if a suitable facility is not available, or one exists but at an unsuitable site, then serious consideration should be given to new construction since to compromise beyond reason could result in neither economical nor efficient operations.

In view of the current unacceptable death and injury rate of flying personnel and loss of expensive flying equipment due to causes which are, at least in part, preventable through the establishment of an aeromedical center, it is my considered opinion that this project be given the very highest priority.

A copy of the report prepared by The Aeromedical Planning Board on the establishment of an aeromedical center is attached as Inclosure 1.



MALCOLM C. GROW

Major General, USAF (MC) (Retired)

# THE FOUNDING DOCUMENT

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(From left) Maj. Gen. Malcolm C. Grow, Maj. Gen. David N. W. Grant, Maj. Gen. Paul R. Hawley, and Maj. Gen. Norman T. Kirk pose for a photo in England in 1944.

## DEPARTMENT OF THE AIR FORCE WASHINGTON

### GENERAL ORDERS

NO. 35

8 June 1949

1. Under the authority of National Military Establishment Transfer Order 36, 1949, as implemented by Joint Army-Air Force Adjustment Regulations 1-11-62, 1949, there is hereby established the Medical Service, USAF, with the Surgeon General, USAF, as the head thereof. Wherever the term "Office of the Air Surgeon" has been heretofore used, such term will be construed to refer to the Medical Service, United States Air Force. The organization to include functions and responsibilities of the Medical Service, USAF, will be announced in appropriate Air Force publications.

2. There are hereby established within the Medical Service, United States Air Force the following 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 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.

3. Announcement is made of the establishment of the following corps in the United States Air Force Reserve by virtue of the authority contained in Transfer Order 36, 1949, as implemented by Joint Army-Air Force Readjustment Regulations 1-11- 62, 1949:

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

4. Announcement is made of the establishment of the following Corps in the Air National Guard of the United States by virtue of the authority contained in Transfer Order 36, 1949, as implemented by Joint Army Air Force Adjustment Regulations 1-11-62, 1949:

- a. Medical Corps, Air National Guard
- b. Dental Corps, Air National Guard
- c. Veterinary Corps, Air National Guard
- d. Medical Service Corps, Air National Guard

5. Authority is hereby granted to establish, pursuant to such regulations as may be promulgated by the Chief of Staff, USA, medical units within the Air ROTC; details with respect to the establishment of such units will be announced in appropriate Air Force publications.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

HOYT S. VANDENBERG  
Chief of Staff, United States  
Air Force

OFFICIAL

L. L. JUDGE  
Colonel, USAF  
Air Adjutant General

DISTRIBUTION D

# THE AFMS IN THE KOREAN WAR

In July 1995, the presidents of the United States and the Republic of Korea dedicated a monument in Washington D.C. to Americans who served in the Korean War (June 1950-July 1953). America's first major armed conflict in the "Cold War" with communism was also the first war of the U.S. Air Force Medical Service.

Shortly after winning independence from the Army in July 1949, the Air Force Medical Service faced the test of war in Korea. In June 1950, there were only a few Air Force dependents and retirees who needed medical care, so the Medical Service could focus on supporting United Nations (U.N.) forces in Korea. Because of the physical stresses created by new jet aircraft, Air Force crewmen needed the best medical support the nation could afford to keep them in fighting trim. And all U.N. forces in Korea relied on the U.S. Air Force for rapid aeromedical evacuation. At the start of the war, however, the Medical Service was understrength, had no general hospitals, and had no medical facilities in Korea or Japan. As the fighting in Korea escalated, the Medical Service grew quickly, structuring itself to meet America's security needs around the world.

## The Nature of the War.

The Korean peninsula was a historic battleground between the Chinese and Japanese empires. In a political compromise at the end of World War II, the nations that defeated Japan divided Korea along the 38th parallel. In 1949, Communist rebels took over mainland China and soon dominated North Korea. South Korea, or the Republic of Korea, maintained close political and military ties with the great Western powers. Encouraged by the Soviet Union, Communist North Korea invaded the South in late June 1950 and by September almost pushed American and other United Nations forces into the sea. But the allies, led by Gen. Douglas MacArthur, rallied and advanced far into North Korea, almost to the Chinese border. In late November 1950, Red China counterattacked with overwhelming ground forces and recaptured the North. A stalemate ensued and the warring powers signed an armistice that became effective in July 1953.

## Aviation Medicine.

Responsibility for the Air Force's initial medical requirements fell to the surgeon's office in Far Eastern Air Forces (FEAF), headed by Brig. Gen. Clyde L. Brothers, Medical



A U.S. Army Air Forces C-82 Packet serves as a blood collection station. Roosevelt Field, Long Island, New York. October 1951.



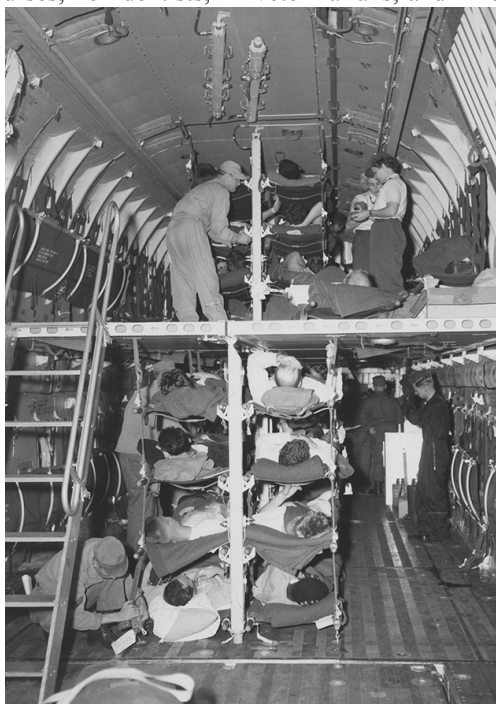


**Medical Airmen fall out to test a long-range bomber crew. Randolph AFB, Texas. June 1951.**

Corps (later by Maj. Gen. John M. Hargreaves, Medical Corps). When North Korean troops invaded South Korea, FEAF had only about 30 doctors, 30 nurses, and 25 Medical Service Corps officers to support the Air Force in Korea, Japan, Guam, Okinawa, and the Philippines. Over the next 18 months, FEAF medical forces, aided by a national doctor's draft, shared in the wartime buildup. The Air Force Medical Service increased from 3,400 to 8,300 medical officers and from 8,000 to 17,500 enlisted medics. The FEAF medical service increased to 236 physicians, 210 nurses, 161 dentists, 14 veterinarians, and nine members of the Women's Medical Specialists Corps. 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.

Flight surgeons served in Korea and Japan with deployed Air Force squadrons, just as they had in World War II. But the Medical Service was unprepared for its wartime responsibilities. It started the war without a well-defined program of aircrew effectiveness, and many deployed flight surgeons and aviation medical examiners were poorly trained in the use of personal aircrew equipment. In February 1951, the Medical Service published its first Aircrew Effectiveness Program, which detailed a comprehensive approach to medical support of fliers at all command levels. The program included a reporting chain from base units to command surgeons to the Surgeon General's Office.

To improve research on aeromedical



**Loading casualties in a C-124 "Globemaster." Korea. August 1952.**

problems in the United States, the Air Force also obtained congressional approval to build an aeromedical center at Brooks AFB, Texas. When the war ended, however, the proposed center was still in planning stages and little aeromedical research resulted from the fighting in Korea. Although the Medical Service had 475 flight surgeons in June 1951, more were needed. A typical flight surgeon in the Far East, who was often burdened by an assignment to more than one squadron, seldom had time to conduct proper research. The FEAF command surgeon had to compensate for a shortage of flight surgeons by quickly converting many general practitioners to aeromedical duties. Despite their accelerated training, several of these aviation medical officers received excellent ratings from their unit commanders.

In the United States, Medical Service researchers explored 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. 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. Scientists of the School of Aviation Medicine, Randolph AFB, Texas, mapped out the aeromedical problems of space flight.

The Air Force Medical Service began the Korean war with only 75 station hospitals worldwide. Throughout the war, the FEAF medical service maintained only small facilities in Korea itself, mainly around Seoul, the South Korean capital. The largest Air Force facility in Korea was a 50-bed hospital. In April 1951, FEAF took over three large Army hospitals in Japan that had been jointly staffed by Army and Air Force medics. The hospitals were at Tachikawa, Nagoya, and Johnson Island. FEAF eventually maintained six hospitals in Japan with 1,450 beds, and another 250 beds at Clark AB, Philippines.



3rd Air Rescue Squadron helicopters preparing casualty for flight. Korea.

The Korean War established the Medical Service's need for air transportable hospitals. FEAF medical group and medical squadron facilities, 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.

### **Logistics and Training.**

The Medical Service faced the formidable challenge of training the large numbers of new Air Force medics. While the Air Force as a whole expanded about 230 percent during the War, the Medical Service expanded 330 percent. Because of wartime pressures, training was accelerated, sometimes too much so. FEAF commanders reported that their new medics needed better training in field operations; better training in treating common ear, nose, and throat problems; and better training in medical aspects of aircrew personal equipment. The Medical Service also discovered that it needed standardized 30-day supply packages for deploying medical units. Air Force medical units often deployed with few supplies, only to find that the Army medical supply system could not meet their needs for at least one month.

### **Preventive Medicine.**

Because the Air Force did not deploy in strength to the Korean peninsula, it suffered less than the Army from endemic diseases, especially malaria in the summer months. But the Air Force Medical Service contributed to the low morbidity rates by conducting an aerial spraying program for all Air Force sites in Korea and some Army sites. The Air Force's 5th Epidemiological Flight conducted an Insect and Rodent Control Program for several U.N. bases. Despite the unusual stresses of service in a combat theater, and the early lack of training in field sanitation, the health of the Far Eastern Air Forces during the war was slightly better than the worldwide Air Force average.

### **Aeromedical Evacuation.**

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. In September 1949, the Secretary of Defense directed a preference for aeromedical evacuation,



**U.S. Army rescue men hand off casualties to U.S. Air Force Medics. Korea. June 1962.**





**Students in an ear, nose, and throat laboratory. School of Aviation Medicine. Randolph AFB, Texas. April 1955.**

and the armed forces soon implemented the new policy. 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 to use rail and sea evacuation, partly because the new Air Force Medical Service could not offer enough medical personnel to staff systematic 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.

Nevertheless, 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 was one of the first units to receive a Distinguished Unit Citation, for evacuating more 4,700 casualties from the Chosin Reservoir in December 1950. The 801st enabled the embattled 1st Marine Division at Chosin 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 were flown to Japan, Hawaii, and the States.

At the start of the war, despite the Secretary of Defense's 1949 directive, the Army and Air Force still had not reached agreement on a division of aeromedical responsibilities. Although Far Eastern Air Forces preferred an integrated Air Force evacuation chain from front-line to communications zone, by December 1951 the Army and the Marines, with approval of Headquarters, USAF, assumed primary responsibility for forward medical evacuation and soon acquired their

own helicopters for that purpose. In December 1953, the Army agreed that the Air Force should have responsibility for organizing and staffing aeromedical staging facilities, even in forward areas. By 1953, the Air Force was convinced that a single theater aeromedical command, even if joint in nature, as in Korea, was preferable to the use of several aeromedical units under divergent command, as in World War II.

### **Summary.**

The Korean War provided a stiff challenge for the small, inexperienced Air Force Medical Service. The war caught American armed forces off-guard and weak. For several months the heavy fighting and heavy U.N. casualties almost overwhelmed the meager resources of the Medical Service. FEAF medics responded with hard work and courage, helping U.N. combat units to rally and eventually drive the invaders back to the North. The threat of Communist China and the Soviet Union, however, remained after the 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."

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# THE AFMS IN THE VIETNAM WAR

After the Korean War, continuing through 1990, the chief mission of the Medical Service was support to Air Force readiness in face of the military threat of the Soviet Union and its allies in Europe and Asia. In the 1960s and early 1970s, the Medical Service again encountered the problems generated by Communism, this time in Southeast Asia. North and South Vietnam experienced the most intense Air Force operations.

The increased tempo of flying during the Vietnam War years (officially dated 1961-1973) caused a growth in the number of Air Force flight surgeons, from 550 in 1963 to more than 700 in 1971 (almost 20 percent of Air Force physicians on duty). In Vietnam, about 110 Air Force physicians were on duty in the 7th Air Force medical service at the peak of the fighting in 1968.



**USAF rescue men transfer a patient to a nearby hospital. Danang Air Base, Vietnam. December 1967.**

Specially trained flight surgeons, graduates of the long course Residency in Aerospace Medicine (known as “RAMs”), deployed to study the stresses of war on aircrews. Besides flight surgeons and other physicians, a full complement of other medics, dentists, nurses, and medical technicians helped establish a substantial medical presence in Vietnam and Thailand. The strength of the Air Force medical staff in Vietnam averaged 1,350 - 310 officers, 940 enlisted medics, and 95 civilians.

Although an accurate count today is difficult, it appears likely that about 350 Air Force medics were deployed to Thailand, since about 25 percent of Air Force beds in Southeast Asia were in Thailand. In addition, the wartime buildup of Air Force facilities in the Philippines, Guam, Okinawa, and Japan accounted for several hundred medics. The roughly 1,900 medics supporting Southeast Asia in the summer of 1968 represented about 5 percent of the 41,000 military personnel assigned to the Medical Service worldwide.

Although small in numbers, the Vietnam medics were spirited. Early in the war, most flight surgeons in the Vietnam War volunteered for flying duties, including combat sorties. No restriction was placed on their flying. Later in the war, although the volunteer policy remained in effect, some commanders limited flying hours for doctors. While this was understandable, several key flight surgeons concluded line commanders should have shared more classified missions with their chief flight surgeons, who needed to know about even highly classified missions to provide optimal support of flying operations. Although many flight surgeons volunteered enthusiastically for civic action programs that treated nearby villagers, only a few of them conducted research or recorded their professional experiences.

Poor working conditions may have hindered professional work. 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 only tents 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. The Military Airlift Command helped evacuate many casualties out of Vietnam, and handled all patient movement to the States. Although the Air Force acquired its first specially designed aeromedical jet, the C-9A Nightingale in August 1968, C-9s began to fly missions in Southeast Asia only in March 1972. Ordinary transport planes, equipped with litters, flew most of the war's aeromedical missions.

Most aeromedical evacuees were battle casualties from the Army and Navy. As the war progressed, the most common medical problems among Air Force pilots and air crews were standard wartime ailments: upper respiratory and digestive diseases and accidental injuries. Southeast Asia, however, was a more threatening environment than the continental United States, Europe, or even Korea. Vietnam, for instance, contained several hazardous diseases: cholera, malaria, dengue, typhoid, and scrub typhus. Appropriate preventive measures kept these under control. For example, aerial and ground spraying prevented a serious malaria problem on USAF bases, even when it was causing problems for the other services. In 1967, however, high Air Force incidence rates for infectious hepatitis and venereal disease became items of concern.

Some pilots, navigators and bombardiers experienced the psychological problems that American fliers had encountered in World War II and Korea - depression or debilitating fear. But most crew members learned to cope. Starting in 1968, a limited Southeast Asia tour (one year) reduced some of the strain (prior to this it was 100 missions). Although sometimes driven to exhaustion, crew members got adequate rest and recreational leave, pleasant quarters, and plenty of good food. Unit sports and parties also helped. Some of the partying, however, was rough and resulted in serious injuries. According to a 1988 after-action medical conference, "Contests in eating egg shells, squeezing drinking glasses until they broke, and squirting people in the face with high pressure hoses or fire extinguishers were favorite pastimes." Flight surgeons understandably kept apart from such events.

Living conditions were generally bearable. The ground fighting in Vietnam was not always guerrilla in nature, but it was unconventional; the lack of a firm defensive line forced most Allied troops to concentrate their living quarters on small, secure bases where the privacy and quiet needed for sleep often were rare. Crews who flew at night and slept during the day usually needed special quarters. All fliers needed air conditioning, and the climate varied enough to make rain gear and warm clothing also a requirement.

Partly because of such preparations, the Air Force weathered the Vietnam War well. From 1961 to 1973, there were about 4,585 Air Force battle casualties, but only 1,125 of these resulted in death. By contrast, the total American battle death toll in the war was 46,170. Compared with the Korean War experience, Air Force wounds in Southeast Asia were much less likely to result in death. Only 25 percent of the non-fatal Air Force wounds in Vietnam required hospital care.

Health problems did not materially reduce the effectiveness of Air Force troops in Southeast Asia. Although "non-effective" and admission rates for Pacific Air Forces fliers rose during the war, the rates were still below those generated by commands less involved in combat. The PACAF rate of temporary removal from flying duty, while high for the Air

Force, was still below that of several other commands. PACAF's morbidity rates, however, started to climb as the war dragged on.

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 what at the time was America's longest war.

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# THE AFMS IN THE PERSIAN GULF WAR

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Medical personnel use litters to transport Cpl. Richard Ramirez, 1st Marine Division, and other wounded to a C-141B Starlifter aircraft. The patients were medically evacuated from Al-Jubayl Air Base to Germany.



On 8 August 1990, just six days after Iraq's invasion of Kuwait, the Air Force Medical Service began its largest deployment since the Vietnam War. Operations DESERT SHIELD and DESERT STORM created a unique combination of challenge and opportunity for the Medical Service. Although, thankfully, the fighting was short and the casualties few, the enormity of the operation provided an excellent test of Air Force medical readiness. Rapid air deployment of medical assets was a first indication that the Air Force Medical Service would do more than just pass the test.

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. All Air Force units had medical support shortly after arrival, either from an air transportable clinic or an air transportable hospital. Most wings were supported by at least the initial components of a 50-bed air transportable hospital within two or three weeks following arrival in the theater.

## **Planning for Rapid Deployment - The 1980s.**

Desert Storm proved the worth of a decade of Department of Defense (DOD) and Air Force planning and preparation for rapid deployment. Readiness became a high priority for the Air Force in the late 1970s, when new planning estimates projected very high initial casualties on Air Force bases in Europe and East Asia. The Medical Service began a series of annual readiness exercises, called Medical Red Flag, in November 1979 at Keesler AFB. Air Force preparations for a conflict in the Middle East began in the early 1980s, shortly after the Soviet Army invaded Afghanistan and Iranian revolutionaries seized American diplomats as hostages. In January 1983, the national defense community established the U.S. Central Command (CENTCOM) to oversee operations in Southwest Asia, including the Persian Gulf and Arabian Peninsula. The U.S. 9th Air Force, the Air Force component of Central Command (CENTAF), relied on the Tactical Air Command (TAC) surgeon and medical assets for mobilization planning and deployment.

Military planners assumed that modern war would likely result in more casualties than past wars. In partial response to that doctrine, the Air Force Surgeon General, in late 1983, approved a five-year program to enlarge the standard 24 bed air transportable hospital to 50 beds. The new design was flexible, providing for 14, 25 or 50 beds. By mid-1990, 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.<sup>(1)</sup>

All TAC combat flying squadrons were supported by an organic squadron medical element, consisting of one physician and three technicians, and an air transportable clinic containing first aid and emergency medical supplies. These medical personnel elements and clinics deployed as integral parts of their squadrons. Combat or a long-term deployment to an undeveloped region, however, demanded the presence of at least a rudimentary field hospital, such as an air transportable hospital.

In 1985, the CENTAF Surgeon also started to develop aeromedical staging facilities to complement air transportable hospitals deploying to Southwest 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, CENTAF started developing staging facilities constructed mainly with tents. With adequate site preparation, they could be ready in five days.<sup>(2)</sup>

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 of the equipment items for DESERT SHIELD, such as ambulances, were already positioned in Southwest Asia by August 1990.<sup>(3)</sup> Several complete facilities were also stored in the region.



Medical personnel set up an air transportable hospital during training at the Medical Readiness Center. The training, directed by the 3790th Medical Service Training Wing, prepares personnel for treating the injured in a combat zone environment.

### **Rapid Deployment - August 1990.**

In August and September 1990, the Air Force placed in-theater the first medical facilities capable of both surgery and chemical decontamination. 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 United States on 8 August 1990, just one day after the first fighter aircraft deployments. The first air transportable hospitals departed on 11 August 1990 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.<sup>(4)</sup> 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 early, rapid and comprehensive deployment by the Air Force Medical Service reflected an unparalleled state of preparedness.

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

Before the start of Desert Shield, the 50-bed 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 hard wall 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 hard wall 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.<sup>(5)</sup>

### **The Mobilization - An Area for Improvement.**

Clausewitz noted that in war many actions do not go as planned; the simplest things become much more difficult than anticipated. Although DESERT STORM was remarkably free of many of the historical "frictions" of war, the U.S. Air Force's postwar analyses noted some areas for improvement.<sup>(6)</sup> Shortly after the expulsion of Iraq from Kuwait, the Air Force Medical Service also began to assess the war's lessons for future medical deployments. Mobilization was of primary concern.<sup>(7)</sup>

The rapid pace of the early deployment revealed deficiencies in CONUS mobility procedures, especially in issuing chemical and biological warfare defense items. Many troops deployed without protective gear for chemical warfare or a full set of chemical warfare antidotes. To fill shortages and make replacements available, CENTAF eventually procured adequate stocks from Europe and the United States and transferred them to sites within the theater.<sup>(8)</sup>

The rapid medical deployment also created personnel turbulence. Several CONUS



medical facilities rapidly lost much of their staff. Although many reservists volunteered immediately, several weeks passed before the involuntary Reserve call-up brought Air Force hospitals back to predeployment strength. Most hospital services were maintained, but in some cases were temporarily reduced, such as several operating rooms being limited to emergency procedures.

The mobilization of individual medics rather than units maximized valuable call-up authority, but also caused some administrative confusion. As the reservists arrived, major command mobilization managers soon wished they had better tracking of secondary specialties to match mobilization unit assignments with requirements.<sup>(9)</sup>

Confronted with so much personnel movement, the CENTAF surgeon, supported by the Strategic Air Command surgeon, concluded that medical groups could leave their commanders and senior staff at the home base. The complicated job of sending most of a unit abroad while backfilling the resulting vacancies necessitated a cadre of experienced managers.<sup>(10)</sup>

Another difficulty with the deployment of reservists was that many of them had limiting or disqualifying dental and medical problems. The Air Force's comprehensive preventive dental program enabled the active duty troops to deploy in excellent dental condition. Air Force dental care, however, was an entitlement only for reservists who were on active duty for an extended time. At the beginning of DESERT SHIELD, many of the Air Force reservists needed extensive dental treatment to qualify them for mobilization. Some of the reserve and active duty troops also deployed with a variety of other disqualifying medical conditions. CENTAF had to return these people to the United States and use scarce airlift space to deploy their replacements.<sup>(11)</sup>

Most mobilization problems, of course, were not unique to the medical deployment, and some difficulties in medical mobilization resulted partly from the unanticipated, higher-level decision to sustain full peacetime care and graduate-level medical training in the United States.<sup>(12)</sup> In April 1991, the Air Force Medical Service began working either to prevent a recurrence of mobilization problems or to at least minimize their effect in the future.

### **Aeromedical Evacuation and Rear Echelon Care.**

In the days before DESERT STORM, CENTCOM predicted as many as 15,000 Americans wounded in the early stages of a Kuwait invasion. With the help of aeromedical evacuation and staging teams from the Air Force Medical Service, as well as aeromedical units from the Army and Navy, the Military Airlift Command (MAC) established a coordinated, multi-theater chain of aeromedical evacuation for these casualties. The plan was to use medically configured C-130s for dedicated evacuation flights within the Persian Gulf. Both dedicated and retrograde C-141s would evacuate most of the seriously wounded to Europe and CONUS. In fact, because of light casualties in the ground war, the dedicated C-141 missions proved unnecessary. The staging facilities also worked well, although some were unexpectedly deployed beyond the effective medical support of an air transportable hospital and had to



**Air Force contingency hospital. Little Rissington, England. Persian Gulf War.**

exert extra effort to support themselves.<sup>(13)</sup>

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 “turn-key” 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. A few equipment shortages and malfunctions had been remedied, and the sewage and water systems in the hospitals had been repaired and augmented. In late January, full staffs from USAF medical centers in the United States had arrived. In addition, several aeromedical staging facilities readied themselves for the fighting.

MAC was also prepared to evacuate casualties from Europe to CONUS military hospitals, where about 6,300 mobilized reserve medics and 28,622 active duty medics were waiting in Air Force hospitals. If military hospitals became full, patients could be sent to Veterans Administration hospitals or civilian hospitals of the National Disaster Medical System.

Preparing for large casualties, the Air Force also fully supported the DOD blood program, including the new frozen blood program. The Air Force transported 6,500 units of its frozen blood to Europe and 7,500 units of frozen blood to CENTCOM. The Air Force also sent 29,000 units of its liquid blood and 2,700 units of plasma to the Persian Gulf theater, as well as 10,200 units of liquid blood and 4,400 units of plasma to Europe.<sup>(14)</sup> Both Europe and Southwest Asia received blood transshipment centers. In February 1991, the Air Force’s aeromedical evacuation chain, blood banks and contingency hospitals stood by ready to serve CENTCOM forces with the best medical care America could offer.

### **Desert Storm.**

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 and DESERT 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.<sup>(15)</sup>

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 4,868 medics, who accounted for 9 percent of the total



**Air Force medics conduct an exercise in chemical/biological warfare suits. Saudi Arabia. 1990.**

Air Force deployment of 55,000. The U.S. Army had most of the hospital beds in Southwest Asia by February 1991, but in Europe, the Air Force furnished about two-thirds of the American beds for DESERT STORM. The Air Force deployed 6,892 medics to staff 3,740 beds in the Air Force fixed and contingency hospitals in Europe.<sup>(16)</sup> The medical readiness improvements in the late 1980s clearly proved their worth.

The reserve mobilization and deployment was 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, serving in almost 200 aeromedical evacuation crews and staging teams for an elaborate evacuation chain stretching from Southwest Asia through Europe to the continental United States.

### **Conclusion.**

The most substantial Air Force medical contribution to DESERT SHIELD and DESERT STORM was the rapid deployment of air transportable medical facilities to the Arabian peninsula in August and September 1990. During the remainder of the year, the Medical Services helped staff the growing tactical and strategic aeromedical system, and then in January 1991, when the fighting was near, deployed thousands of medics to prepositioned medical facilities in Europe. In all these ways, the Air Force Medical Service proved the special importance of air power to the medical readiness of American armed forces.

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 grace period would be available in a future war, the Air Force Medical Service in 1994 began to reengineer its medical readiness assets to ensure that its next response would be even more timely and efficient.

Improved coordination between the active-duty Medical Service and its reserve components was especially important. In January 1995, the Deputy Surgeon General, Maj. Gen. (later Lt. Gen.) Charles H. Roadman II, inaugurated the "Mirror Force" initiative to promote closer integration of active-duty and Reserve medical components. A new readiness strategy relocated most definitive medical care in wartime to the Continental United States. In October 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.

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# PEACETIME HEALTHCARE



**Lackland Air Force Base Hospital, the first wing was dedicated in 1957**

## **Facilities.**

In July 1949, the Air Force Medical Service obtained only about 75 small base-level medical facilities from the Army to meet the diverse and complicated medical needs of 450,000 Air Force active duty people and their dependents. The Medical Service nevertheless emphasized a policy known as “Taking Care of Our Own.” The goal was to prevent referral of Air Force people into nearby civilian communities or to Army and Navy medical centers for specialized care. Because of a lack of many specialists, however, some referrals were necessary. Early in the Korean War, some Air Force medics were assigned to Army and Navy hospitals to care for the Air Force patients being treated there.

In July 1951, one year after the Korean War broke out, funds became available to begin constructing a full-service Air Force medical care system. Air Force medical leaders immediately began to plan for several teaching and research centers oriented to the Air Force. Starting in 1951, Air Force medics were removed from Army facilities and the Air Force Surgeon General, Maj. Gen. Harry G. Armstrong, Medical Corps, sought congressional approval to build a large Air Force general hospital system. In July 1953, the Air Force was authorized to construct about 85 new medical facilities worldwide. By late 1953, the Air Force had 180 medical treatment facilities and 80 percent of Air Force inpatients were hospitalized in Air Force facilities. The first large Air Force hospital, at Elmendorf AFB, Alaska, opened with 400 beds in September 1955. A comparable facility opened at Wright-Patterson AFB, Ohio, in 1956.

In the 1950s, the largest and most diversified medical treatment facility in the Air Force was located on the northern edge of Lackland AFB, nine miles west of San Antonio, Texas. Because of a shortage of physicians, the hospital had just downsized to an infirmary in June 1950 when American entry into the Korean War suddenly gave it new life. Within six months, the hospital expanded to almost 1,000 beds, treating thousands of recruits while serving as a major debarkation point for casualties returning from Korea.

By the end of the Korean War, the Lackland hospital was well on its way to becoming the largest major Air Force medical center. The hospital obtained accreditation as the

Air Force's first teaching facility and as a specialty treatment center, providing complete medical and dental care to military members and their families assigned to approximately fifteen Air Force installations in the Southwest. Since many of the hospital's World War II buildings badly needed repair, the Air Force obtained congressional approval for construction of a permanent nine-story, two-wing hospital with 500 beds, located just north of the old World War II cantonment hospital. Ground was broken for the new building on 1 October, 1954, and the Air Force Surgeon General, Maj. Gen. (Dr.) Dan C. Ogle, dedicated the new USAF Hospital Lackland on 16 November 1957.

At the same time, the Air Force constructed other major medical facilities at Elmendorf, Wright-Patterson, Travis, and Andrews Air Force Bases. By 1958, the Medical Service reached its historic peak - 134 hospitals and 128 clinics and dispensaries, with 13,900 beds. Military dependents and retirees were afforded care in military facilities, but always contingent on the availability of staff and other resources.

By 1960, however, the need for a large number of sophisticated base medical facilities had been partially alleviated by the Dependents' Medical Care Act of 1956, which granted the Armed Services authority to purchase hospitalization-related services for dependents and children. (In 1966, Congress extended this benefit to outpatient dependent care and to military retirees, their dependents, and survivors not covered by MEDICARE.) The increasing specialization of American medicine was making it difficult to recruit enough well-trained physicians to maintain specialized care at all the larger Air Force bases.

By 1960, the Medical Service made a conscious decision to construct a partially regionalized system of 13 specialty centers. Aeromedical evacuation to these facilities would provide specialized care when it was unavailable in a base's surrounding community. As the new decade opened, the Medical Service began to reduce the number of its medical treatment facilities, while increasing the size of the staff and services at the regional specialty centers and the six largest Air Force hospitals.

Development of the Air Force peacetime aeromedical system in the mid-1950s permitted centralization of specialized Air Force physicians primarily at Lackland, where the growing size of the local patient population already justified an advanced facility. At the same time, other centers began to augment their specialties and medical education programs. In the 1950s and early 1960s, the Wilford Hall USAF Hospital received almost 30 percent of its inpatients by transfer from facilities outside the Southwest. In July 1969, the creation of a regionalized USAF Hospital System with six designated referral centers, including Wilford Hall, significantly reduced this transfer workload into Lackland, putting the Wilford Hall Medical Center on more of a parity basis with the other five Air Force medical centers.

By 1960, Lackland had established residencies in anesthesiology, general surgery, internal medicine, obstetrics and gynecology, orthopedic surgery, pathology, pediatrics, radiology and urology. A substantial fellowship program was also soon inaugurated. The other large hospitals followed suit. Air Force medical education gained a well-deserved reputation for national excellence. By the late 1960s, Air Force Medical Corps graduates consistently out-performed their civilian peers and other Services peers on national medical examinations.

Although the personnel strength of Medical Service continued to grow from 1960 to 1990, the number of facilities and inpatient beds steadily declined. This occurred mainly because the American medical profession as whole was finding more ways to deliver effective health care in outpatient settings. The steady decrease in Air Force workdays lost to illness also reduced the need for inpatient wards and large medical staffs. Starting in 1992, the Medical Service also began to reduce its personnel strength. This followed logically from a large number of air base closures and a substantial drawdown in the size

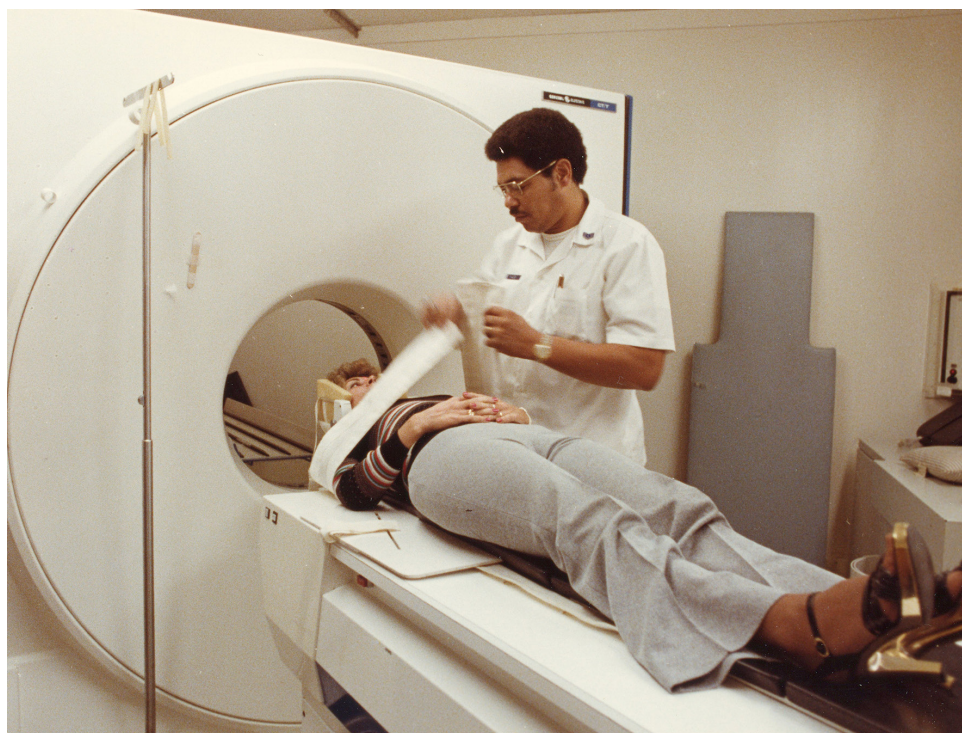
of the active duty Air Force. The active duty Air Force no longer required the same level of medical resources as during the Cold War. By 1999, the Air Force had roughly the same number of facilities and inpatient beds as it had in July 1950, on the eve of the Korean War.

### **The Patients and Their Benefits.**

The Air Force Medical Service's patients increased in both number and variety during its first decades. In the 1940s and 1950s, most of the patients were active duty Air Force members; by the 1980s, these patients made up only a small minority of the workload. Dependents and retirees were the bulk of the new patient population. All DOD medical facilities by law could not discriminate against patients from the other Services. As a result, many of these new patients at the largest Air Force facilities came from other services. Most new patients, however, were affiliated with the Air Force.

Visits by retiree beneficiaries increased dramatically, especially after the Vietnam War. In the early 1960s, such beneficiaries were only about 5 percent of the workload; in the late 1980s, they made up more than one-third of Air Force patient visits, and this percentage continued to grow in the 1990s. Air Force dependents, however, were the main beneficiaries. Starting in the early 1960s, dependents were the largest patient category, about 45 percent of the Medical Service's workload.

In the 1980s and 1990s, the reduction in the number of medical treatment facilities forced the Medical Service to refer more family members and retirees to the civilian medical community. From 1966 to 1994, these patients were reimbursed for their care by CHAMPUS (the Civilian Health and Medical Program of the Uniformed Services) and thereafter by the new DOD TRICARE program. Neither program afforded completely free medical care because patients were personally responsible for a portion of their costs.



An x-ray technician positions a patient in the computerized tomography scanner (CAT) at Lackland AFB, Texas, October 1978.

In the 1980s, the persistent budget overruns and the rapid cost growth of the CHAMPUS program necessitated major reforms. In October 1992, the Department of Defense placed a large portion of the Air Force, Army, and Navy medical budgets into a new Defense Health Program. Two years later the Department inaugurated the TRICARE program, which involved management as well as fiscal reforms. Medical and health care for retirees, dependents, and survivors who could not obtain military medical treatment became the responsibility of regionalized managed care contractors. A major innovation was to allow qualified beneficiaries to choose a level of personal financial risk taking into account their individual medical needs.

### **Reengineering Air Force Healthcare – the 1990s.**

Reengineering peacetime healthcare began in 1992 with a series of internal reforms. Managed care reforms were tested further, and in October 1992 the Air Force adopted a cycle ergometry program for annual physical fitness testing, abandoning the run/walk test. In the mid-1990s, Maj. Gen. (later Lt. Gen.) Charles H. Roadman II designed a five-part “Parthenon” strategy, named after its icon. The strategy emphasized readiness reengineering, structural reforms, managed care innovations, customer satisfaction, and new disease prevention programs.

In October 1994, the Medical Service 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.

Starting in 1995, the organizational reforms of the Parthenon strategy began to reengineer medical readiness units, small hospitals and clinics, and then moved toward a reengineering of the six Air Force medical centers. Customer Satisfaction emphasized both high-quality healthcare and the professionalism and caring attitudes of Air Force medical providers. The Medical Service was particularly active in devising 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. By 1999, the Parthenon strategy was well on its way toward repositioning the Air Force Medical Service for the new Millennium.

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# MAJOR ORGANIZATIONAL CHANGES 1949-1999

- 1 July 1949:** The Air Surgeon's Office of the U.S. Army transferred to the Air Staff and began to function as the Air Force Surgeon General's Office. The Office was physically located in a temporary building, "Tempo 8," in McLean Gardens, northwest Washington D.C.
- 1 April 1969:** The new DOD Forrestal Building on Independence Avenue, Washington D.C., opened for business. The Army operated the new facility, but the Air Force was allocated about one-third of the new office space. The Air Force Surgeon General's Office moved into the building in the fall of 1969.
- 1978:** A reduction and realignment of the Air Force Departmental headquarters staff and other Air Force activities in the National Capital Region included the Office of the Surgeon General. The Air Force presence in Washington was reduced by about 1,500 manpower authorizations. About 130 positions in the Office of the Surgeon General, both military and civilian, transferred to Brooks AFB, Texas, to form the Air Force Medical Service Center (AFMSC). It consisted of the directorates of Professional Services (SGP), Health Plans and Programs (SGX), and Health Care Support (SGS) - and also the Office of the Chief, Medical Service Corps.
- December 1978:** The Office of the Surgeon General relocated from the Forrestal Building to Building 5681, the R.V. Maisey Building, at Bolling AFB. Other tenants in the Maisey Building were the Air Force Historian, the Secretary of the Air Force's publications office, and the Air Force District of Washington's accounting and finance office.
- Spring 1983:** The Office of the Chief, Medical Service Corps, returned to Bolling AFB.
- 20 June 1984:** AF Vice Chief of Staff approved relocation of SGP to Bolling AFB, Washington D.C. including the relocation of 36 manpower. All sections of SGP moved to Washington, with exception of the USAF Radioisotope Committee, the Health Promotion Program, the Family Advocacy Program, and a Professional Services Liaison Officer. The relocation began in May 1985 and was completed by October 1985.
- 1 July 1985:** The Air Force Medical Service Center was renamed the Air Force Office of Medical Support (AFOMS), which continued to function as the southern arm of the Surgeon General's Office.
- 19 December 1985:** The Medical Wartime Hospital Integration Office (AFOMS/MWHIO) was realigned from AFOMS to AF/SGH. MWHIO remained an Air Force element at Fort Detrick, Maryland.
- 4 September 1990:** The SGP Health Promotion Program at Brooks AFB moved to Bolling AFB, to facilitate communication with HQ USAF/ Personnel (DP).
- July 1992:** The SG Directorate of Professional Services (SGP), still split between Bolling and Brooks AFBs, became a new field operating agency, the Air Force Medical Operations Agency (AFMOA), but remained in the R.V. Maisey building. AFOMS at Brooks AFB was redesignated the Air Force Medical Support Agency (AFMSA).
- Spring 1997:** As part of a remodeling effort in the Pentagon and at Bolling AFB, most tenants of the R.V. Maisey Building moved to other quarters. The Surgeon General's Office, however, remained in the building, on its second, third, and fourth floors.
- January 1998:** The 11th Wing, host unit at Bolling AFB, began a major renovation of the Maisey Building that allowed the Surgeon General's Office to consolidate its space on the third and fourth floor, occupying the vacated Air Force History vault on the fourth floor.

# REORGANIZING FOR A NEW CENTURY

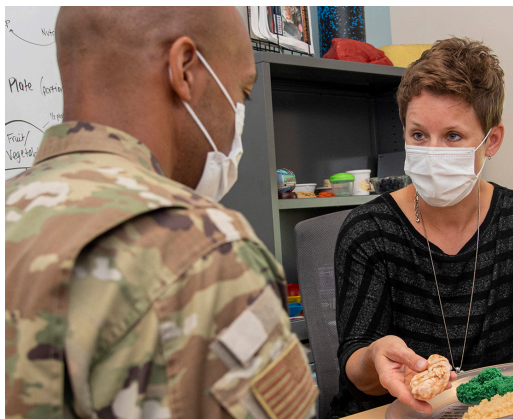
Even as the Department of Defense was centralizing the majority of its medical budget within the Defense Health Program in the early 1990s, the end of the Cold War and the accelerating shift to out-patient and managed care brought new organizational shifts to the AFMS and the rest of the Air Force. Change was certainly in the air as venerable major commands like Strategic Air Command, Tactical Air Command, Military Airlift Command, and Air Transport Command were caught up in a round of reorganizations and consolidations which produced Air Combat Command, Air Mobility Command, and Air Education and Training Command. At the installation level, Gen. Merrill A. McPeak, Chief of Staff of the Air Force (1990-1994), championed an Objective Wing, creating a structure in which wing commanders would be in overall command at the Air Force's bases. In response, Surgeon General Alexander Sloan and his successors, Surgeon General Edgar R. Anderson, Jr., and Surgeon General Charles H. Roadman II, proposed and implemented first an Objective Hospital and then an Objective Medical Group (OMG) which was, in turn, to be composed of subordinate medical operations, aerospace medicine, medical support, and dental squadrons. The directors of installation military treatment facilities thus became group commanders directly subordinate to the commander of their local wing, with a subordinate structure that was more familiar to the Line of the Air Force. Furthermore, the reorganization opened group command to AFMS officers across the force since command duties are not specialty specific.

While initial implementation rolled out across the AFMS in 1994, SG Anderson emphasized that it was also an opportunity for continuous quality improvement, to retain the benefits of the new structure while minimizing perceived drawbacks. While the OMG better aligned medical units to the base/installation wing structure with a clear chain of command and a squadron structure that was similar to the Line facilitating leader development, the roles and authorities of the traditional MTF professional staff, such as the chief of medical staff, chief nurse, and chief administrator, needed to be clarified as functional advisors.



Col. Greg Tims, 90th Missile Wing commander looks over a dental flight poster board with Senior Airman Tommy Vinh, 90th Medical Operations Squadron, during his 90th Medical Group tour.

Once the OMG organization was established, it then provided the basic structure within which AFMS MTFs operated going into the 21st century and upon which later modifications could be made. In 2004, Gen. John P. Jumper, Chief of Staff of the Air Force (2001-2005), directed the development of an AFMS “Flight Path” that would improve the development of “expeditionary medics.” Among other things, the Flight Path structure, which the AFMS implemented in 2007-2008, reinvigorated the prominence of the functional advisors within the medical groups, while enabling officers from all corps to serve in command of at least clinics.



**Tracy Boucher, right, 436th Operational Medical Readiness Squadron registered dietitian, discusses proper nutrition with an Airman at Dover AFB, Delaware.**

More recently, in February 2019, the Secretary of the Air Force directed further reform at the squadron level. Following a pilot at the 366th Medical Group, Mountain Home AFB, Idaho, this Medical Squadron Reform changed the squadron structure at AFMS MTFs, which would now be based on an Operational Medical Readiness Squadron (OMRS) focused on active duty care and ensuring the readiness of the force to go to war, and a Healthcare Operations Squadron (HCOS) focused on the delivery of all beneficiary care and support functions.

Reorganizations and reorientations also continued at the higher echelons of the AFMS, particularly in the Office of the Surgeon General and its Field Operating Agencies (FOAs), the Air Force Medical Operations Agency (AFMOA) and the Air Force Medical Support Agency (AFMSA), as well as their relationships to the Major Commands (MAJCOMs) and MTFs. In November 2005, AFMOA began to report directly to the Assistant Surgeon General for Medical Operations (SGO) and AFMSA to the Assistant Surgeon General for Medical Modernization (SGR). In December, the reorganization moved most of the AFMSA divisions to AFMOA, with the exception of its Force Development (SGC), SGR (the foundation unit of the new AFMSA), and Population Health Support staff. By late 2006, AFMOA and AFMSA were respectively formally subordinated as FOAs to the SG3 Healthcare Operations and SGR Modernization directorates.

No sooner had these changes taken effect when consolidations and reductions at the Air Staff level and an Air Force-wide reduction in the size of the MAJCOMs, including the offices of their Surgeons, prompted the AFMS to reconsider the support that an enlarged AFMOA might provide to the offices of the MAJCOM Surgeons and to the medical groups at the wing level. Meanwhile AFMSA, as the FOA for “common processes associated with execution of policy and clinical processes,” would focus more on supporting the Air Staff element of the Surgeon General’s Office. In 2009, AFMOA bedded down in San Antonio as part of this initiative to consolidate headquarters management functions and to provide a centralized “reach-back, reach-out” FOA as if it were local to each MTF. Likewise, in 2014, the various functional directorates within the Office of the Surgeon General consolidated into two main directorates: Manpower, Personnel, and Resources (SG1/8) and Medical Operations and Research (SG3/5).

In 2015, the civilian workforce took a step towards better integration with the rest of the AFMS with the codification of a civilian medical career field and the establishment of a Medical Civilian Corps on par with the officer corps and enlisted force. Although civilian





**Ribbon Cutting of the new Wilford Hall Medical Center. Lackland AFB, Texas.**

employees had always been an integral part of the AFMS, the action created a Corps Chief who could advocate for hiring, training, and development.

Two additional factors accelerated the evolution of the AFMS structure in the 21st century even as MTFs, like civilian hospitals, continued to reduce their in-patient capacities and implement managed care reforms. First, due to the 2005 Base Realignment and Closure (BRAC) Commission's recommendations the AFMS was forced to realign its priorities. The next major factor was the 1 October 2013 establishment of the Defense Health Agency (DHA) which assumed initial responsibility for certain shared services across the Military Health System such as the Tricare program, pharmacy services, medical education and training, logistics, acquisitions, and research and development.

The BRAC brought major changes. Not only did it force several MTFs to convert to clinics with ambulatory surgery centers and drive the development of consolidated multi-service markets in areas such as the National Capital Region; but it also caused shockwaves at two of the major AFMS institutions. The realignment at Lackland AFB, Texas, included relocating the inpatient medical functions of the 59th Medical Wing's Wilford Hall Medical Center to the Brooke Army Medical Center, Fort Sam Houston, Texas. The last inpatient left the venerable facility



**Maj. Gen. Curtis M. Bedke (left), Air Force Research Laboratory commander, presents the 711th Human Performance Wing flag to Thomas S. Wells, 711th HPW director, during a 25 March 2008 activation ceremony at Wright-Patterson Air Force Base, Ohio.**





**Incoming commander, Brig. Gen. Mark Koeniger speaks at the official activation of the Air Force Medical Readiness Agency, at Defense Health Headquarters, Falls Church, Virginia, 28 June 2019.**

in September 2011 as the 59th became the Air Force component of a joint San Antonio military medical system.

Additionally, the BRAC-directed closure of Brooks AFB, Texas, drove the relocation of the aerospace medicine research, consultative and training missions located there. USAFSAM moved to the Air Force Research Laboratory at Wright-Patterson AFB, Ohio, as part of the new 711th Human Performance Wing, activated on 31 March 2008, creating a center of excellence for human performance sustainment and optimization. Likewise, the 2010 establishment of the joint Medical Education and Training Campus (METC) at Fort Sam Houston created a platform for the integration of similar Service-specific training.

The BRAC also directly impacted the Office of the Surgeon General even as the DHA was coming into being. It prompted an initial move in 2010, after 32 years at Bolling AFB, D.C., to commercial office space in Northern Virginia, and a follow on move, in May 2012, to the new Defense Health Headquarters (DHHQ) in Falls Church, Virginia. For the first time the offices of all three military Services' Surgeons General, the Tricare Management Activity, and components of the Office of the Secretary of Defense for Health Affairs were colocated. When the DHA stood up at the DHHQ the following year, the Office of the Surgeon General and its FOAs began transferring staff for shared services such as Health Information Technology, Pharmacy, Facilities, and Public Health to the new agency.

In April 2015, the Surgeon General, Lt. Gen. Thomas Travis addressed the AFMS regarding quality issues from patient safety to punctual reporting. While an annual review found the AFMS to be performing adequately, the Surgeon General noted that there was room for improvement. He championed a new initiative dubbed "Trusted Care" that focused on patient-centered care, standardized processes and created problem solving cultures. It was based on a High Reliability Organizational (HRO) model originally used in the nuclear power and aviation industries. HROs consistently achieve better-than-expected outcomes despite operating in complex or high-risk environments, and healthcare HROs demonstrate significantly reduced rates of patient harm, high-quality care, and a systematic approach to process improvement that sets them apart from their peers. In October 2015, the AFMS published the Trusted Care Concept of Operations which envisioned the AFMS as a high reliability healthcare system providing safe, world-class care in-garrison, enroute, and in the deployed setting.

A sea-change in the relationship between the armed services and the DHA came with the passage of the National Defense Authorization Acts for 2017 and 2019. The legislation



**Lt. Gen. Thomas Travis, Air Force Surgeon General, talks to Airmen during his visit to Joint Base Andrews, Maryland.**

directed the transfer of authority, direction, and control of the MTFs across the Military Health System from the individual services to the DHA to occur no later than 30 September 2021. The Surgeon General remained the principal Air Force advisor on all health and medical matters and on health readiness requirements and safety, and continued to be responsible for recruiting, organizing, training, and equipping Air Force medical personnel. Nevertheless, this transition precipitated a massive shift in personnel, budget, and organization. Roughly three quarters of what had been the AMFS budget was now to be administered by the DHA as part of the Defense Health Program for healthcare delivery. At the MTFs, nearly the entirety of their military and civilian staffs

moved under the DHA rating chain. MTF commanders now found themselves dual-hatted. On one hand, they were responsible to the DHA, through intermediate “market” and Defense Health Agency Region (DHAR) organizations for the delivery of healthcare to their beneficiaries, and, on the other hand, they remained responsible to the Line of the Air Force, through their local wing commanders, for readiness.

The transfer of the bulk of the support to the MTF’s to the DHA, and hence AFMOA’s mission, also drove changes for the Surgeon General’s field operating agencies. On 28 June 2019, the Air Force inactivated AFMSA and redesignated AFMOA as the Air Force Medical Readiness Agency (AFMRA), headquartered at the DHHQ with the personnel who did not transfer to the DHA. At the same time, the two Directorates under the Air Force Surgeon General reorganized. The Medical Operations & Research Directorate (SG3/5) became the Medical Operations Directorate (SG3/4) and the Manpower, Personnel, & Resources Directorate (SG1/8) became the Manpower, Personnel, and Operational Resourcing Directorate (SG1/8). In addition to providing functional personnel support across the staff, AFMRA also acted as an informal directorate focused on the readiness of the medical force, while SG3/4 focused on the medical readiness of the Air Force writ large.

The readiness responsibilities of the AFMS evolved further in 2019 with the establishment of U.S. Space Command as a unified Combatant Command and the U.S. Space Force as a separate branch of the Armed Services. The Air Force Surgeon General thus became responsible for two Services within the Department of the Air Force and the medical readiness of Space Force Guardians to meet the unique mission sets and operate in their specialized environments. This included establishing an interim Space Force Directorate within the Office of the Surgeon General with initial operating capacity on 1 October 2021. The Department of the Air Force subsequently formalized this structure on 10 March 2023.



**Col. Lidia Stana Ilcus, Deputy Director of Medical Operations for U.S. Space Force and Chief of Aerospace Medicine Ops and Policy, Office of the AF Surgeon General, aboard NASA’s reduced gravity C9B “Weightless Wonder.”**

# THE IMPACT OF 9/11 ON THE AFMS



**Aerial view of the Pentagon after the E Ring collapsed 11 September 2001.**

The 9/11 al-Qaeda terrorist attacks on the World Trade Center in New York City and the Pentagon began a new era in Air Force medical operations. Air Force medics were intimately involved in the immediate response to the crisis at the Pentagon and New York City, and continued to serve for the next two decades in Afghanistan, Iraq, and around the world.

The attack on the Pentagon on Tuesday, 11 September 2001, was no less a visceral experience for the Office of the Surgeon General than for the rest of the Department of Defense staff when the hijacked American Airlines Flight 77 passenger jet crashed into the building about an hour after the first attack in New York. Indeed, the Surgeon General himself, Lt. Gen. Paul K. Carlton, Jr., was one of several Airmen awarded the Airman's Medal for their actions in and around the burning building. Initially Carlton and his staff went to the DiLorenzo Tricare Clinic to organize a medical response which then moved to the center courtyard. He then helped other medics and Pentagon personnel pull victims from the building and worked with the ad hoc medical contingent in the North Parking Lot and the courtyard before an Army physician relieved him. Eventually, after checking on the medical efforts in the South Parking Lot, the general made his way back Bolling AFB. The personnel of the Air Force Medical Operations Center (MOC) in the Pentagon stayed close to the Chief of Staff and Secretary of the Air Force, and traveled with them by helicopter to Bolling about 12:30 p.m.

Meanwhile, the staff in the Office of the Surgeon General at the Maisey Building on Bolling were temporarily displaced as their workspace became a temporary command post for the Air Force leadership. Initially, the Deputy Surgeon General, Maj. Gen. James G. Roudebush, gathered the staff in a playing field on the west side of the building, where the smoke from the Pentagon was visible. Nevertheless, the medical readiness staff quickly met at the quarters of the Surgeon General and Brig. Gen. Klaus O. Schafer, Assistant SG for Medical Readiness, Science and Technology. Presently rejoined by General Carlton, they began to organize the deployment of medics to New York and the Pentagon to assist with casualties and monitor environmental conditions. By 2:30 p.m., Carlton was ready to brief the AFMS response plan to the Chief of Staff and the Secretary of the Air Force.





**Lt. Gen. (Dr.) Paul K. Carlton Jr., right, directs responders after the Pentagon attack 11 September 2001. Carlton kept the blue vest: "It's a reminder that we live day-to-day."**

Altogether more than 500 AF medics deployed to McGuire AFB, New Jersey, in just over 24 hours from four Expeditionary Medical Support units and four Critical Care Air Transport Teams, as well as bioenvironmental engineers, mental health crisis intervention teams, and other special medical personnel along with more than 2,000 units of blood. They established a provisional 250-bed staging facility, the 21st Expeditionary Medical Group, under the command of Schafer and the Air Mobility Command Surgeon, Brig. Gen. Charles B. Green. Additional aeromedical evacuation elements were temporarily stationed at Andrews AFB, Maryland, in the National Capital Region. Although most of these medics quickly redeployed to their home bases, a small contingent of public health, mental health, dental, and radiology personnel remained at Andrews and Dover AFB, Delaware, to support ongoing operations.

While he could not have known that the ultimate U.S. response would arc across the next two decades, General Carlton's 18 September 2001 address to the men and women of the AFMS foreshadowed the future:

*"I exhort you to prepare for the long road ahead. It will be filled with challenges that will call on our very best efforts at all levels: from our newest airman to our most experienced general officers. As maintainers of the 'human weapon system,' we must continue to ensure our troops are fit to fight, and be ready to deploy with our forces as we execute the Air Force mission."*



**Maj. Leila Von Kreitor, 332nd Expeditionary Medical Group Intensive Care Unit and Intensive Care Ward officer in charge, checks vitals on a patient at the Air Force Theater Hospital at Joint Base Balad, Iraq. Von Kreitor was living in New York, 11 September 2001, and joined the Air Force as a result of 9/11.**



# OPERATIONS IN AFGHANISTAN & IRAQ

As American forces deployed across south and central Asia to bring the fight to al-Qaeda and the Taliban in Afghanistan, Air Force medics were among the first support personnel to deploy with combat elements, and they brought new tools with them. The new Expeditionary Medical Support (EMEDS) system was light enough to fit on the first deploying transport aircraft. By 2002, the upgraded 25-bed EMEDS was one-third the weight and size of the typical Gulf War era 25-bed

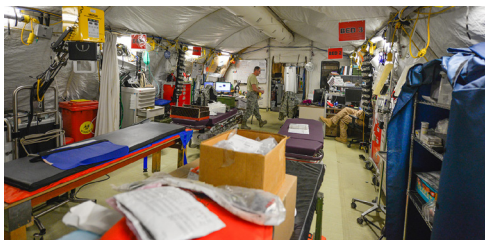
Air Transportable Hospital. A C-130 could transport an entire EMEDS Basic package, including personnel, equipment and shelters. To achieve this reduction in weight and size, the AFMS reengineered tents and medical equipment and reduced the size of the basic EMEDS supply package. The basic EMEDS units were also designed as flexible “force modules,” whose equipment and personnel might be stored at strategic locations before deployment.

A single EMEDS included 25 to 85 staff members and could provide expanded in-patient care for populations ranging in size from 500 to 5,000 people. Specialties, ranging from agent detection and patient decontamination to preventive medicine and critical incident stress management, could be added to the basic EMEDS capability depending on local needs. This increased modularity enabled the Air Force to deploy surgical capacity more rapidly and to more austere, forward locations. AFMS personnel were the predominant medical force in Operation Enduring Freedom for the first 60 days. However, medical supply and resupply in the initial period was a notable challenge.

Operation ENDURING FREEDOM also provided the backdrop for the fielding of new aeromedical evacuation techniques. Because of the small-scale nature of the initial combat operations in Afghanistan, the AFMS was able to station many of its new aeromedical teams and patient support equipment far forward in the operating theater. The immediate availability of these aeromedical resources allowed a minimal evacuation delay and



**A 455th Expeditionary Aeromedical Evacuation Squadron Critical Care Air Transport Team ensures a patient is ready to move prior to an aeromedical evacuation mission aboard a C-17 Globemaster III aircraft from Bagram Airfield, Afghanistan, to Ramstein Air Base, Germany, 8 August 2015.**



**The 332nd Expeditionary Medical Group's Expeditionary Medical Support System tent in its current configuration 10 May 2017.**

optimum usage of returning aircraft. Rapid evacuation reduced the theater medical footprint, but placed more stress on the aeromedical evacuation system as more aeromedical evacuation forces were required for dispersal to forward locations. En route, new Critical Care Air Transport Teams (CCATs), consisting of a flight surgeon, flight nurse, respiratory therapist and medical technician, made possible the evacuation of critical patients to Europe and, if necessary, to CONUS earlier than ever before. Another relatively new initiative, the TRANSCOM Regulating Command and Control Evacuation System, or TRAC2ES, facilitated patient tracking through the aeromedical evacuation chain.

When the U.S. invaded Iraq in 2003 the

EMEDS, CCATT, and TRAC2ES innovations again proved their worth. However, the logistical and transportation challenges of EMEDS resurfaced in Operation Iraqi Freedom. The light-weight packages of EMEDS equipment and supplies, spread over more than 200 unit type codes (UTCs), often failed to obtain priority shipping status. The dispersion of these assets throughout CONUS before deployment also created problems, which leaders later sought to resolve by consolidating them at CONUS hubs. Additionally, most EMEDS in theater transitioned away from CONUS reach-back to direct support from the U.S. Army Medical Materiel Center - Southwest Asia, the CENTCOM-designated Single Integrated Medical Logistics Manager which built up enough stock to support Air Force units over the course of 2003. Other lessons learned included the need for more flexibility in tailored medical force packages and adequate training for deploying personnel.



**Staff Sgt. Dana Sullivan prepares to load Ray Mitchell onto an aircraft during the first non-stop medical evacuation flight from Bagram, Afghanistan to Landstuhl, Germany, 21 March 2007.**

As new systems and procedures were being fielded, older practices and legacy systems were phased out. In the autumn of 2003, the venerable C-9A Nightingale was retired from active service. In part, this was due to a dramatic decrease in CONUS peacetime aeromedical evacuation missions from about 70,000 in 1990 to about 11,000 in 2001. A new patient support pallet (PSP) also made it possible to move even seriously and critically ill patients aboard standard transport aircraft and facilitated the assumption of the aeromedical evacuation mission by C-130, C-141, and KC-135 aircraft.



**A C-9A Nightingale aircraft of the 375th Aeromedical Airlift Wing, foreground, and a West German C-160 Transall aircraft are unloaded on the ramp.**

Each PSP was built on a standard cargo pallet and provided support for six litters or a combination of three airline seats and three stretchers. Additionally, multiple innovations improved the logistics of AE. On one hand, prepositioning of patient movement items in Southwest Asia reduced the burden on aircraft moving forward into the theater of operations, while, on the other, an increase in the integral litter capacity of C-17s permitted less forward staging of patient litters and PSPs. In 2006, the AFMS also streamlined the equipment load of CCATT medics from 750 to 550 pounds and began to ensure that CCATT teams followed the same duty and crew-rest standards used by other aircrew. The AFMS also developed a new En-Route Patient Staging System (ERPSS) to streamline the various air staging facilities into one platform which could scale to need and standardize training. Capable of responding to both wartime and humanitarian missions, the ERPSS was designed to provide an initial 10-bed capacity with 50 and 100-bed follow-on packages.

By 2004, the AFMS laydown in the Iraq and Afghanistan theaters spanned 24 locations

in 15 countries averaging more than 900 deployed medics. While EMEDS continued to support various locations, in September 2004 the 332d Expeditionary Medical Group assumed control of the trauma surgery mission at the Balad AB theater hospital, one of the two large U.S. hospitals in Iraq. This hospital provided definitive stabilization and preparation for air evacuation for the majority of casualties in Operations Iraqi Freedom. In Europe, over 300 Air Force medics staffed Landstuhl Medical Center in Germany, the key enroute stop for casualties returning from Southwest Asia. On 3 August 2007, the 332d left its original labyrinthine tent facility and moved its patients and equipment to a larger new hard-wall facility in a renovated building that had formerly served as the Iraqi Air Force Academy hospital. By the time the 332d closed in November 2011 – during the U.S. withdrawal from Iraq – its staff had treated some 35,000 injured military and civilian personnel.

Similarly, in Afghanistan in January 2007, the AFMS activated the 455th Expeditionary Medical Group and assumed operational control of Craig Theater Hospital at Bagram Airfield. On 21 March 2007, the first non-stop medical evacuation mission flew from Bagram to Landstuhl. The new route reduced what had been a three- to five-day flight through Kuwait to a 10-hour direct flight. This ability to quickly move even serious and critical patients out of the theater of operations to definitive care continents away was unprecedented, and those patients who reached the facilities at Balad and Bagram had historically high survival rates.

As counterinsurgency operations continued in Iraq and Afghanistan, Air Force medics were also active in the field. In addition to serving in provincial reconstruction teams and civic action programs aimed at bringing healthcare to the local populations, they joined the Army in pushing resuscitative surgery teams far forward in the battle zone. In 2011, building on lessons learned in Afghanistan and Iraq, the Air Force began fielding Tactical Critical Care Evacuation Teams (TCCETs) consisting of an emergency medicine or critical care physician and two nurse anesthetists to accompany MEDEVAC helicopters. The TCCETs enabled casualty movement at the tactical level from the point of injury to forward surgical care. This frontline treatment further reduced the time needed to prepare patients for aeromedical evacuation to more advanced care. When combined with standard and CCAT air evacuation, most patients could move from battlefield to tertiary care in as little as 48-72 hours. By comparison, patients evacuated from Southwest Asia in the Persian Gulf War of 1990-1991 took 10-14 days to return to Europe. In the Vietnam War, the return to CONUS averaged 21 days of travel. By 2018 AE crews brought over 114,000 patients out of theater.



**First Lt. Stephanie Englmeier, 321st Expeditionary Medical Squadron operating room nurse, attaches electrodes to a patient's chest to check for vital signs, at Kirkuk Regional Air Base, Iraq.**

To maintain current casualty care skills with ever fewer in-patient CONUS MTFs to serve as readiness platforms, the AFMS built military-civilian partnerships. In January 2002 the first Center for Sustainment of Trauma and Readiness Skills (C-STARS) hosted its inaugural class of students in Baltimore, Maryland. The training program included a three-week advanced trauma-care course and a number of additional programs. Additional partnerships, such as those in St. Louis and Cincinnati, followed and thousands of medics cycled through these programs. Deputy Surgeon General, Maj. Gen. John J. DeGoes emphasized the impact medical advancements played during the 2010 offensive against the Taliban in Helmand Province and said “no kidding trauma experience was a huge difference maker.” So in demand were these skills that, in one case, a medical task force



commander went so far as to meet an Air Force surgeon at the flight line fresh off a commercial airline flight and drove him straight to the operating room.

As operations wound down in Afghanistan and American forces prepared to depart, the facility at Bagram closed and the center of gravity for the AFMS in the country shifted to the MTF at Hamid Karzai International Airport (HKIA) in Kabul in June 2021. When the military situation of the Afghan National Army deteriorated and the numbers of Afghans seeking refuge abroad became apparent in mid-August 2021, AFMS medics braced to support what would become the largest non-combatant evacuation operation in history – Operations ALLIES REFUGE and ALLIES WELCOME.



**Senior Airman Felicita Torres-Perkins, asks an Afghan woman questions through an interpreter during a Women's Village Medical Outreach visit.**

This included medical support to evacuees in Afghanistan at HKIA where the medics had to manage casualties resulting first from the crush of refugees and then from a terrorist bombing on 26 August 2021. Even at this eleventh hour and in the midst of managing the flow of triage and trauma, traditional care continued. The MTF commander recalled, “Mixed in with all of this, probably within the first hour or so of receiving patients, we did have a woman who came in actively in labor. And so one of our teams pulled her off to the side and we did end up delivering a baby.”

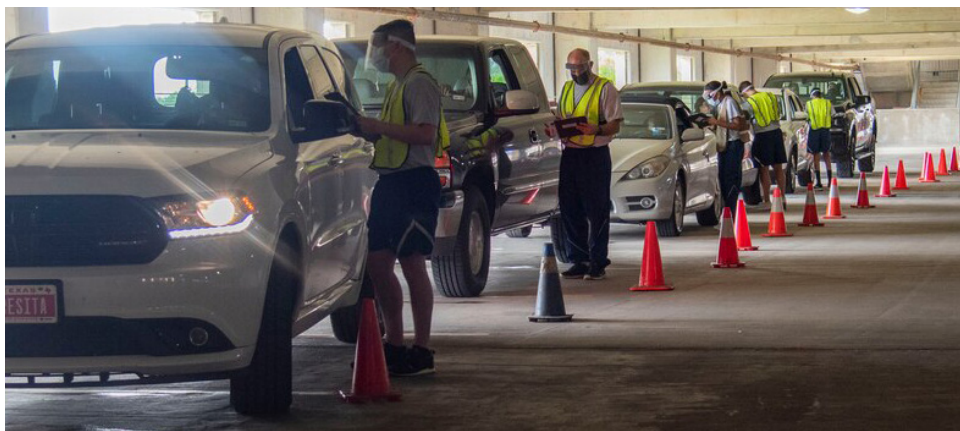
AFMS personnel also stepped up to provide enroute care and screening for medical issues of the more than 120,000 evacuees before travel to the U.S., particularly at the travel hubs of Ramstein and Al Udeid Air Base, Qatar. In Qatar and Germany, with tens of thousands of evacuees passing through and similar numbers on the ground at any one time, the staffs of the 379th Expeditionary Medical Group and 86th Medical Group worked flat-out for weeks, setting up aid stations at the flight lines and the temporary accommodations for the travelers. Ad hoc Passenger Medical Augmentation Personnel (PMAP) teams provided in air care and obstetric teams flew “Stork Missions.” In CONUS, EMEDS



**Airmen from the triage facility medical team pose for a photo at Aman Omid Village on Holloman Air Force Base, New Mexico, 22 September 2021.**



# COVID'S IMPACT ON THE AFMS



**Airmen from the 59th Medical Wing screen patients for COVID-19 at Wilford Hall Ambulatory Surgical Center, Joint Base San Antonio-Lackland, Texas, 18 August 2021.**

The AFMS played an integral part in the unprecedented whole of government response to the COVID-19 pandemic. Rather than operating as a traditional supporting arm, medics suddenly found themselves in the lead. “The pandemic brought military medical capacity and capability to the tip of the spear,” said Lt. Gen. Dorothy A. Hogg, Air Force Surgeon General 2018-2021.

Although the AFMS had experience dealing with infectious disease operations, such as the Ebola outbreak of 2014, and various operations in support of civil authorities, such as the response to Hurricane Katrina in 2005, the scope, scale, and duration of the COVID response proved to be unprecedented. As the virus spread in late 2019 and early 2020, initially affecting overseas commands, military installations such as Travis and Lackland Air Force Bases provided facilities for the Centers for Disease Control to screen and quarantine American citizens returning from Wuhan, China. By the time the World Health Organization declared a pandemic on 11 March 2020, COVID was already spreading within the United States.



**Staff Sgt. Kelvin Thomas, 316th Medical Squadron noncommissioned officer in charge of immunizations, administers the COVID-19 vaccination to Lt. General Dorothy A. Hogg, U.S. Air Force and U.S. Space Force Surgeon General, at Joint Base Anacostia-Bolling, Washington D.C., 6 January 2021.**

Fundamentally, the basic problem confronting the AFMS was ensuring that the Air Force could, in the words of Maj. Gen. John J. DeGoes, Air Force Deputy Surgeon General, “fight through” the pandemic without compromising its operational and training missions despite environments on the ground and in the air that often precluded mitigation measures such as social distancing. Many medics across the AFMS, particularly in the early phases of the pandemic found themselves working seven days a week to meet the various crises. In fairly short order, however, it also became clear that the response would be a “marathon and not a sprint” in which all three components of the Air Force as well as the civil service

and contract civilian employees would be working all-out to meet the challenge.

The Office of the Surgeon General grappled with the issues of helping develop policy and guidance in concert with the Defense Health Agency and the rest of the Department of Defense. It quickly flexed to provide clinical and public health guidance across the AFMS, particularly to the Public Health Emergency Officers (PHEOs) and clinicians at the MTFs who, in turn, provided guidance to their local base commanders. Although the science and situation were constantly evolving, public health and preventive medicine experts worked hard to ensure that the best information possible was available to inform policy decisions. Meanwhile, medical logisticians tackled the tracking and distribution of such items as ventilators, personal protective equipment (PPE), testing supplies, and, when they became available, vaccines. Likewise, an ad hoc COVID Laboratory Team addressed lab-specific issues, particularly related to diagnostic screening and surveillance testing and scaling up capability and capacity.



**Medics from the Kaiserslautern Military Community and medical instructors from Air Mobility Command participate in training scenarios inside a Negatively Pressurized Conex at Ramstein Air Base, Germany, 14 July 2020.**

The AFMS employed new tactics and tools to enable missions to continue. Operationally, the MTFs quickly retooled in innovative ways such as developing drive through predeployment and COVID screening and testing capabilities to ensure that Airmen were ready to go for their operational missions. COVID also drove expansion of cutting-edge care during patient movement such as the joint Army-Air Force extracorporeal membrane oxygenation (ECMO) program based in San Antonio which completed its 200th transport mission in February 2022.

Likewise, even amidst the pandemic, aeromedical evacuation remained a no-fail mission. Aeromedical evacuation crews and staging facility personnel took extra precautions at every stage of enroute care and thoroughly screened all patients. New technologies also enabled global patient movement of COVID cases. On 10 April 2020, Air Mobility Command (AMC) aircrew and medics conducted the first operational use of the Transport Isolation System (TIS) since its development in response to the Ebola outbreak of 2014, successfully evacuating three COVID-positive U.S. government contractors from Afghanistan to Germany.

While the TIS had the capacity for 2-4 patients, on 1 July 2020 high consequence infectious disease patient movement capability expanded dramatically with the first operational use of the Negatively Pressurized Conex (NPC). Developed in less than 100 days by AMC and Air Force Materiel Command in response to an urgent operational requirement, the NPC could accommodate up to 30 passengers while a smaller NPC-Light (NPCL) could accommodate up to 15. By March of 2022, the Air Force had a fleet of 60 such systems in its inventory and the modules had served in more than 85 aeromedical evacuations, transporting more than 350 patients across all five geographic commands.



**A U.S. Air Force Military Training Instructor engages an Airman during a basic military training ceremony at Keesler Air Force Base, 14 May 2020. Due to safety concerns stemming from COVID-19, the Air Force sent new recruits to Keesler for the first time since 1968.**

As the Air Force continued its operations across the world, training new forces to perform the mission remained critical. The Air Force had to adopt new measures to continue the training mission while protecting Airmen and Guardians. Supporting the Air Education and Training Command, the 59th Medical Wing championed “defense in depth” to ensure that Basic Military Training continued without pause. Medics rigorously screened recruits and, if necessary, quarantined or isolated them. Additionally, they advocated for a culture of safety that Military Training Instructors and other leaders in the Line of the Air Force could also employ to mitigate risks as much as possible.

Once COVID vaccines became available in late 2020, the next challenge was rolling them out as quickly and efficiently as possible across 85 Department of the Air Force sites and six continents. Medics balanced various factors in prioritizing distribution and administration. In addition to traditional concerns with minimizing the spread of the pathogen there was also the issue of ensuring distribution to beneficiaries in the United States and overseas locations, and balancing the different dosage and handling requirements of the various FDA-approved vaccines. When the Department of Defense mandated vaccines in the summer of 2021, the AFMS pivoted in support of that effort. By year’s end, medics had helped vaccinate more than 95 percent of the Total Force. Additionally, while the mandate was in effect until January 2023, the Air Force Surgeon General served as the final appeal authority for all requests for religious accommodations pertaining to immunizations. He established a Religious Resolution Team to conduct an individualized review of the appeal of each service member claiming a religious basis for an exemption from the mandate.



**Staff Sgt. Tamia Lyles, 59th Surgical Squadron otolaryngology noncommissioned officer in charge, tests a patient for COVID-19 at Wilford Hall Ambulatory Surgical Center, Joint Base San Antonio-Lackland, Texas, 18 August 2021.**

The AFMS also played a prominent role in the whole of government response to the





**Three U.S. Air Force medical Airmen exit a C-17 Globemaster III following the first-ever operational use of the Transport Isolation System at Ramstein AB, Germany, April 10, 2020.**

pandemic. The Air Force provided medics to help staff the Public Health and Medical Services Emergency Support Function #8 (ESF-8) interagency task force that coordinated the federal, state, and local countermeasures, including a general officer, Brig. Gen. John J. Bartrum, to serve as the ESF-8 deputy through October 2020. As local needs were identified and validated, the AFMS contributed forces to the Defense Support to Civil Authorities (DSCA) mission. Although the AFMS had the necessary personnel and capabilities, the long-term critical care the pandemic required was different from the preparation and staging of wartime trauma patients for onward aeromedical movement. COVID drove new organizational imperatives, protocols, training, and equipment. Planners initially developed large force packages, COVID Theater Hospitals, that could serve as deployable in-patient platforms with over 200 beds, but it quickly became apparent that it would



**Capt. Patrick McGar, 144th Fighter Wing clinical nurse, administers a COVID-19 test at a drive-thru testing site in Indio, California.**

be more efficient and effective to deploy smaller groups into civilian medical facilities to backfill their overburdened staff. The AFMS then pivoted to deploying in tailorable “medical strike teams” which could support local civilian medical systems with capabilities such as monoclonal antibody infusion, respiratory therapy, intensive care unit support, and testing. In early 2021 these were then joined by vaccination teams. These DSCA missions climaxed in early 2022 as the extremely transmissible Omicron variant of COVID-19 swept across the country before





**Lt. Gen. (Dr.) Robert Miller, Surgeon General for the U.S. Air Force tours an Emergency Operations Center (EOC) and a Training, Simulation and Quarantine Center.**

winding down in the spring. Involving hundreds of medics at any one time and drawn from MTFs across the AFMS, the DSCA mission involved a degree of careful balancing for medical readiness planners and analysts to ensure that home station missions were not adversely affected any more than necessary. Nevertheless, some capabilities inevitably degraded and on rare occasions, outright closed.

Overall, over the course of two years, the AFMS was tested in ways that it had never been before with little respite. Nevertheless, it “fought through.” Summing up the effort, Lt. Gen. Robert I. Miller, Air Force Surgeon General 2021-present, noted, “There are a lot of people who are tired, but, in the same regard, are incredibly proud of their impact.”

### **Bibliographic Note.**

The primary sources for the update to this pamphlet are the materials compiled in the Office of the Air Force Surgeon General, “Annual Historical Reports,” 2000-2022. Those interested in U.S. military medical history of the 21st century may also wish to consult inter alia:

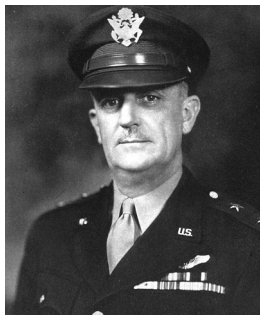
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# AIR FORCE SURGEONS GENERAL 1941 - 1967



**Maj. Gen. David N.W. Grant**  
AAF Air Surgeon  
1941 - 1946



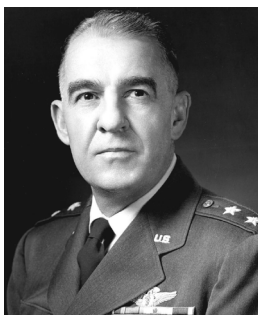
**Maj. Gen. Malcolm C. Grow**  
1 July 1949 - 30 November 1949



**Maj. Gen. Harry G. Armstrong**  
1 December 1949 - 31 June 1954



**Maj. Gen. Dan C. Ogle**  
1 July 1954 - 30 November 1958



**Maj. Gen. Oliver K. Niess**  
1 December 1958 -  
1 December 1963



**Lt. Gen. Richard L. Bohannon**  
2 December 1963 -  
30 November 1967

# AIR FORCE SURGEONS GENERAL 1967-1985



Lt. Gen. Kenneth E. Pletcher  
1 December 1967 – 30 April 1970



Lt. Gen. Alonzo A. Townner  
1 May 1970 – 31 July 1972



Lt. Gen. Robert A. Patterson  
1 August 1972 – 31 July 1975



Lt. Gen. George E. Schafer  
1 August 1975 – 31 July 1978



Lt. Gen. Paul W. Myers  
1 August 1978 – 31 July 1982



Lt. Gen. Max B. Bralliar  
1 August 1982 – 31 July 1985

# AIR FORCE SURGEONS GENERAL 1985 - 2002



Lt. Gen. Murphy A. Chesney  
1 August 1985 – 31 July 1988



Lt. Gen. Monte B. Miller  
1 August 1988 – 31 July 1991



Lt. Gen. Alexander M. Sloan  
1 August 1991 – 11 July 1994



Lt. Gen. Edgar R. Anderson, Jr.  
26 September 1994 –  
14 November 1996



Lt. Gen. Charles H. Roadman II  
15 November 1996 –  
10 October 1999



Lt. Gen. Paul K. Carlton, Jr.  
1 November 1999 –  
14 October 2002



# AIR FORCE SURGEONS GENERAL

## 2002 - PRESENT



Lt. Gen. George P. Taylor  
15 October 2002 – 31 July 2006



Lt. Gen. James G. Roudebush  
1 August 2006 – 11 August 2009



Lt. Gen. Charles B. Green  
12 August 2009 – 13 July 2012



Lt. Gen. Thomas W. Travis  
13 July 2012 – 7 June 2015



Lt. Gen. Mark A. Ediger  
8 June 2015 – 1 June 2018



Lt. Gen. Dorothy A. Hogg  
1 June 2018 – 3 June 2021



Lt. Gen. Robert I. Miller  
4 June 2021 – 14 June 2024



Lt. Gen. John J. DeGoes  
31 July 2024 – present

# **CORPS LEADERS OF THE AFMS**

## **Medical Corps.**

The Surgeon General of the Air Force and the deputy served as chief of the Medical Corps until 1 August 2003, when that office was assigned to:

Brig. Gen. David G. Young III: August 2003 – December 2007  
Brig. Gen. Byron C. Hepburn: January 2008 – May 2009  
Brig. Gen. Daniel Wyman: June 2009 – August 2014  
Brig. Gen. Sean L. Murphy: September 2014 – May 2018  
Brig. Gen. Mark A. Koeniger: June 2018 – June 2021  
Brig. Gen. John R. Andrus: June 2021 – June 2023  
Brig. Gen. Leigh A. Swanson: July 2023 – present

## **Dental Corps.**

Maj. Gen. George Robert Kennebeck: 1949 – 1952  
Maj. Gen. Marvin E. Kennebeck: 1952 – 1958  
Maj. Gen. James Simon Cathroe: 1958 – 1960  
Maj. Gen. Maurice C. Harlan: 1960 – 1964  
Maj. Gen. Benjamin Walter Dunn: 1964 – 1966  
Maj. Gen. Lee Minus Lightner: 1966 – 1970  
Maj. Gen. Roger Hombs: 1970 – 1975  
Maj. Gen. Robert L. Thompson, Jr.: 1975 – 1979  
Maj. Gen. Stanley C. Kolodny: 1979 – 1982  
Maj. Gen. Arthur J. Sachsels: 1982 – 1987  
Maj. Gen. Donald Butz: 1987 – 1993  
Brig. Gen. Jerry D. Gardner: 1993 – 1995  
Brig. Gen. Theodore C. Almquist: July 1995 – September 1998  
Col. Laurie N. Matiasovich (Director of Dental Services): October 1998 – November 1999  
Brig. Gen. Gary H. Murray: November 1999 – June 2003  
Brig. Gen. Thomas Bailey: July 2003 – December 2005  
Maj. Gen. Gar S. Graham: January 2006 – August 2010  
Maj. Gen. Gerald A. Caron: September 2010 – May 2014  
Maj. Gen. Roosevelt Allen: June 2014 – May 2018  
Brig. Gen. Sharon Bannister: May 2018 – June 2021  
Brig. Gen. Robert K. Bogart: June 2021 – present

## **Nurse Corps.**

Col. Verena M. Zeller: July 1949 – June 1956  
Col. Francis Lay: July 1956 – January 1960  
Col. Dorothy Zeller: January 1960 – June 1963  
Col. Ethel R. Kovach: July 1963 – July 1968  
Brig. Gen. Ethel Ann Hoeffly: August 1968 – May 1974  
Brig. Gen. Claire Garrecht: May 1974 – December 1978  
Brig. Gen. Sarah P. Wells: January 1979 – September 1982  
Brig. Gen. Diann A. Hale: October 1982 – October 1985

Brig. Gen. Carmelita Schimmenti: October 1985 – September 1988  
 Brig. Gen. Barbara A. Goodwin: October 1988 – December 1991  
 Brig. Gen. Sue E. Turner: January 1992 – April 1995  
 Brig. Gen. Linda K. Stierle: May 1995 – November 1999  
 Maj. Gen. Barbara C. Brannon: November 1999 – September 2005  
 Maj. Gen. Melissa Rank: October 2005 – August 2008  
 Maj. Gen. Kimberly A. Siniscalchi: September 2008 – August 2013  
 Maj. Gen. Dorothy A. Hogg: August 2013 – May 2018  
 Brig. Gen. Robert J. Marks: June 2018 – August 2020  
 Brig. Gen. Jeannine M. Ryder: August 2020 – April 2024  
 Brig. Gen. Gwendolyn A. Foster: April 2024 – present

## **Medical Service Corps.**

Col. Phillip G. Fleetwood: November 1953 – November 1957  
 Col. Leonard P. Zagelow: December 1957 – June 1959  
 Col. Bernard Korn: July 1959 – June 1964  
 Col. John V. Painter: July 1964 – July 1968  
 Col. James W. Polkinghorn: August 1968 – August 1972  
 Col. Paul C. Keller: September 1972  
 Col. Donald J. Ruffing: October 1972 – June 1975  
 Col. Kenneth W. Peters: July 1975 – September 1979  
 Brig. Gen. Donald B. Wagner: October 1979 – September 1982  
 Col. Donald S. Good: October 1982 – October 1985  
 Col. John E. Murphy: November 1985 – November 1989  
 Col. Frank G. Rohrbough: 1989 – 1991  
 Brig. Gen. Peter C. Bellisario: 1991 – June 1994  
 Maj. Gen. Michael K. Wyrick: July 1994 – November 1999  
 Col. Allen Middleton: November 1999 – April 2001  
 Col. Stephen Meigs: May 2001 – April 2004  
 Brig. Gen. Patricia C. Lewis: May 2004 – March 2009  
 Brig. Gen. Michael W. Miller: April 2009 – July 2012  
 Brig. Gen. Charles Potter: July 2012 – May 2015  
 Brig. Gen. James J. Burks: June 2015 – May 2018  
 Col. Kurt Pritchard (Interim): May 2018 – August 2018  
 Brig. Gen. Susan Pietrykowski: September 2018 – August 2021  
 Brig. Gen. Alfred K. Flowers, Jr.: August 2021 – present

## **Biomedical Sciences Corps.**

Col. Alvin F. Meyer, Jr.: March 1965 – May 1969  
 Col. Frances G. Ballentine: April 1969 – January 1970  
 Col. Floyd Morris: February 1970 – September 1972  
 Col. Thomas Cocheres: October 1972 – January 1978  
 Col. Herbert E. Bell: January 1978 – August 1981  
 Col. Nicholas C. Nicholas: September 1981 – September 1984  
 Col. Phillip E. Smead: October 1984 – September 1988  
 Col. D. Dean Falconer: October 1988 – June 1992  
 Col. Jerry W. Davis: July 1992 – June 1995  
 Col. Jerry Ross: July 1995 – June 1998  
 Col. Chuck Watkins: July 1998 – November 2000  
 Col. R. David Hindelang: November 2000 – May 2002  
 Col. James H. Young: June 2002 – December 2003  
 Col. Jeffrey Sventek: January 2004 – September 2006

Brig. Gen. Theresa M. Casey: October 2006 – October 2009  
Brig. Gen. James J. Carroll: November 2009 – September 2013  
Brig. Gen. James E. McClain: September 2013 – August 2016  
Brig. Gen. James H. Dienst: August 2016 – August 2020  
Brig. Gen. Norman S. West: August 2020 – August 2022  
Col. Brent A. Johnson: July 2022 – March 2024  
Brig. Gen. Jason J. Lennen: March 2024 – present

## **Civilian Corps.**

Dr. Thomas Langdon: December 2015 – November 2017  
Ms. Ellen K. Greenwood: April 2018 – September 2023  
Mr. Stephen M. Mounts: October 2023 – present

## **Chief, Medical Enlisted Force.**

Chief Master Sgt. Ray Raymond T. Smith (Duty title was Sergeant Major, AFMS):  
September 1968 – October 1971  
Chief Master Sgt. Roy C. Yeager (Duty title was Sergeant Major, AFMS): November 1971  
– December 1972  
Chief Master Sgt. Laura Dumez: December 1994 – November 1996  
Chief Master Sgt. David Bayliss: November 1996 – September 2002  
Chief Master Sgt. Manuel Sarmina: September 2002 – October 2006  
Chief Master Sgt. Mark Withers: December 2006 – April 2009  
Chief Master Sgt. Charles R. Cole: April 2009 – May 2012  
Chief Master Sgt. Kevin J. Lambing: May 2012 – July 2014  
Chief Master Sgt. Jason L. Pace: July 2014 – July 2017  
Chief Master Sgt. George “Steve” Cum: September 2017 – July 2020  
Chief Master Sgt. Dawn M. Kolczynski: August 2020 – June 2024  
Chief Master Sgt. James M. Woods: June 2024 – present

## **Veterinary Corps (1949 - 1980).**

Brig. Gen. Wayne O. Kester: July 1949 – August 1957  
Col. Robert R. Miller: September 1957 – October 1963  
Brig. Gen. Charles H. Snider: October 1963 – March 1971  
Col. George T. Dalziel: August 1971 – December 1974  
Col. William H. Grau, Jr.: January 1975 – March 1976  
Col. Edward C. Menning: April 1976 – September 1980

## **Women’s Medical Specialist Corps and Medical Specialist Corps.**

### **Women’s Medical Specialist Corps (1949 – 1955)**

Col. Miriam E. Perry: April 1950 – June 1956

### **Medical Specialist Corps (1955 - 1965)**

Col. Audrey A. Underkofler: July 1956 – November 1961  
Col. Kathleen Creech: December 1961 – March 1965



# USAF MEDICAL BADGES AND THE MEDICAL SERVICE EMBLEM



## The Medical Service Emblem

### The staff of Asklepios.

The Air Force Medical Service's basic organizational symbol is the staff of Asklepios (one snake and staff), not the Caduceus (two snakes, staff, and sometimes wings mounted on top). The American Medical Association adopted the staff of Asklepios in 1910. The American Dental Association and American College of Surgeons also adopted it. The AFMS adopted this symbol for its officer uniforms in 1955, and its organizational emblem in 1968. It has been the predominant symbol of medicine since ancient times.

The Caduceus, the herald's wand of the god Hermes, was used infrequently as a symbol of medicine in Western history until the 20th century. Caduceus is the Latin word for the Greek kerykeion, which means "herald's wand" or "sign of peace." The Caduceus consists of a staff entwined with two snakes, topped by wings. As a symbol of neutrality it apparently was used by some Roman military medical cadre. It was not again associated with medicine until one of the great medical printers of the 16th century, Johann Froben (1460-1527) of Basel, used it on the title pages of his books starting in 1517. Sir William Butts, physician to King Henry VIII, was the first medical man to use the caduceus on his crest, starting in 1533. In 1838, another firm of publishers, J.S. Churchill of London, began to employ the Caduceus on its title pages. U.S. Army Hospital stewards began to use the emblem as a collar and cap ornament in 1856. The U.S. Marine Hospital Service, predecessor of the U.S. Public Health Service, employed the Caduceus from 1872 to 1887. The U.S. Army Medical Department adopted the same symbol for all its uniforms in 1902. The British Royal Air Force, following the precedent of the U.S. Army, adopted the Caduceus in 1918. In 1956 an Army medical officer, Col. Thomas N. Page, initiated an action to change the Army's symbol to the staff of Asklepios, but the initiative failed.

Staff of Asklepios



The Caduceus

### **Asklepios.**

Asklepios was the son of Apollo and grandson of Zeus (Jupiter). He learned the art of healing both from Apollo and Chiron, the centaur. He became so skilled in surgery and the use of drugs that he is revered as the founder of medicine. One legend says that he could raise the dead and save life. Hades accused him of stealing the dead and accepting bribes in gold; in a rage, Zeus killed Asklepios with a thunderbolt, but later restored the god to life and set his image, holding a curative serpent, among the stars. According to Homer, he was the father of the two physicians who attended the Greeks during the siege of Troy. He was the father of Hygeia (hygiene) and Panacea (the all-curing). His most constant symbols were the snake and the staff. Shrines and sanctuaries dedicated to Asklepios dotted the Mediterranean during ancient Greek and Roman times.

### **Hermes.**

Hermes was the son of Zeus and Maia. Zeus made Hermes his herald and the god of communications. He served as guide of souls to the afterworld. Zeus gave him a herald's staff with white ribbons which everyone was ordered to respect; a round hat to protect against the rain; and winged golden sandals which carried him about with the swiftness of wind. He was also the god of commerce and protector of thieves. The white ribbons were later depicted at two entwined serpents.

### **Corps Badges.**

When the U.S. Air Force Medical Service was created in July 1949, almost two years after the creation of the Air Force, the new medical personnel inherited two Army medical badges from World War II - the flight surgeon's badge and the flight nurse's badge.

The new Air Force Medical Service was constituted with six officer Corps - medical, dental, nurse, medical service, veterinary, and women's medical specialist - whose promotion lists were separate from those of the Air Force Line. None of these corps had an approved Air Force specialty badge for several years. The Air Force's Medical, Dental, and Nurse Corps badges originated in the mid-1950s. In 1955, the Secretary of the Air Force approved special badges for members of the medical and dental corps. The Air Force Uniform Regulation of February 1956 depicted the first insignia for physicians and dentists. The Nurse Corps badge was added in 1959.

The Veterinary, Medical Service, and Biomedical Sciences Corps badges originated in 1968; and, the Enlisted Medical occupational badge in 1987. The Veterinary badge disappeared with the Veterinary Corps in 1980.

The Women's Medical Specialist Corps formed in 1949 was renamed the Medical Specialist Corps in 1955 when men were admitted to it. It apparently never had a distinctive corps badge. In 1965 the Medical Specialist Corps was absorbed into the new Biomedical Sciences Corps, which received its badge three years later.

The first emblem for the entire Air Force Medical Service was approved in 1968. The six stars on the emblem represented the six corps in 1968: Medical, Dental, Nurse, Veterinary, Medical Service, and Biomedical Sciences. Although the sixth star now stands for the Enlisted Medical occupation, the design of the emblem has not changed.



**Flight Surgeon**



**Flight Nurse**



**Physician**



**Dentist**



**Nurse**



**BSC**



**MSC**



**Enlisted**



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