



# PROJECT AIR FORCE

THE ARTS  
CHILD POLICY  
CIVIL JUSTICE  
EDUCATION  
ENERGY AND ENVIRONMENT  
HEALTH AND HEALTH CARE  
INTERNATIONAL AFFAIRS  
NATIONAL SECURITY  
POPULATION AND AGING  
PUBLIC SAFETY  
SCIENCE AND TECHNOLOGY  
SUBSTANCE ABUSE  
TERRORISM AND  
HOMELAND SECURITY  
TRANSPORTATION AND  
INFRASTRUCTURE  
WORKFORCE AND WORKPLACE

This PDF document was made available from [www.rand.org](http://www.rand.org) as a public service of the RAND Corporation.

[Jump down to document](#) ▼

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

## Support RAND

[Purchase this document](#)

[Browse Books & Publications](#)

[Make a charitable contribution](#)

## For More Information

Visit RAND at [www.rand.org](http://www.rand.org)

Explore [RAND Project AIR FORCE](#)

View [document details](#)

## Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND PDFs to a non-RAND Web site is prohibited. RAND PDFs are protected under copyright law. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see [RAND Permissions](#).

This product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

# Air Force Physician and Dentist Multiyear Special Pay

Current Status and Potential Reforms

---

Edward G. Keating, Marygail K. Brauner, Lionel A. Galway,  
Judith D. Mele, James J. Burks, Brendan Saloner

Prepared for the United States Air Force

Approved for public release; distribution unlimited



RAND

PROJECT AIR FORCE

The research described in this report was sponsored by the United States Air Force under Contract FA7014-06-C-0001. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

**Library of Congress Cataloging-in-Publication Data** is available for this publication.

ISBN 978-0-8330-4697-0

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

**RAND**® is a registered trademark.

© Copyright 2009 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND Web site is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (<http://www.rand.org/publications/permissions.html>).

Published 2009 by the RAND Corporation

1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665

RAND URL: <http://www.rand.org>

To order RAND documents or to obtain additional information, contact

Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Email: [order@rand.org](mailto:order@rand.org)

## Summary

---

Since the advent of the all-volunteer force, the U.S. military has struggled with how best to attract and retain physicians and dentists. As of September 30, 2007, there were approximately 3,400 physicians in the Air Force's Medical Corps and 900 dentists in its Dental Corps. Both populations have declined in recent years. The Air Force Medical Corps has had a pattern of decreasing annual accessions that dates back to 1990. Dental Corps accessions, however, have been variable from year to year.

The Air Force's three largest Medical and Dental Corps accession paths all involve sizable lags between an individual's commitment to serve in the Air Force and actual provision of trained medical or dental services. The foremost accession tool is the Health Professions Scholarship Program (HPSP), in which the military pays for medical or dental school tuition, books, and fees and provides a monthly stipend to the student in exchange for a one-for-one service commitment. A related accession program is the Financial Assistance Program (FAP), in which the military provides a stipend to a non-HPSP physician in a civilian residency program in exchange for postresidency military service by that physician. The Department of Defense also operates the Uniformed Services University of Health Sciences (USUHS) medical school. USUHS students do not pay tuition and receive a stipend while at USUHS but then owe a post-USUHS seven-year service commitment (not counting time spent in residency training).

Since 1975, Air Force Medical Corps annual attrition has generally been greater than Dental Corps attrition, but the opposite has been true in recent years. Medical Corps attrition has trended downward

in recent years, while Dental Corps attrition (though highly variable from year to year) has trended upward. Our analysis suggests that the Medical Corps' downward population trend has largely been caused by accession reductions, while the Dental Corps' foremost recent challenge has been retention. (See pp. 7–8.)

Physicians and dentists in the military are officers. Along with the compensation that an officer of a given rank receives, Air Force physicians and dentists are eligible for a variety of special pays. These special pays include Additional Special Pay, Variable Special Pay, Board-Certified Pay, Incentive Special Pay, and MSP. MSP is the focus of this monograph. Under this program, qualifying physicians and dentists who make two-, three-, or four-year commitments to additional service receive additional annual payments. The Air Force asked RAND to describe the tendencies of physicians and dentists to accept MSP.

### **Trends in Accession, Retention, and Promotion in the Air Force Medical Corps (1976–2007)**

We examined the service records of physicians in the Air Force Medical Corps from 1976 to 2007. Three major trends in Medical Corps accession sources are noteworthy. First, beginning in the early 1980s, HPSP produced the vast majority of physicians, 60–80 percent of all entrants. Second, direct accessions, who made up more than one quarter of all entrants in the first few years of the all-volunteer force, had virtually disappeared by the end of the study period. Third, USUHS emerged as a stable accession source, contributing just over 8 percent of all entrants in most years. (See pp. 16–17.)

The racial and gender composition of Air Force physicians has changed considerably over time, corresponding to the increased entry of females and minorities into both the civilian physician labor market and into the Air Force Officer Corps more broadly. (See pp. 18–21.)

The data suggest that many physicians retrained and upgraded their skills while in the Medical Corps. (See pp. 22–25.)

We also found that, in virtually every accession category, the majority of entering physicians did not stay beyond their minimum

service obligations. The exception was USUHS graduates, who were just as likely to stay for more than 20 years as to leave after the end of their estimated minimum service obligations. For HPSP, the largest accession group, completing a military residency was associated with a roughly three times greater probability of staying for more than 20 years relative to those who had completed a civilian residency. (See pp. 23, 26.)

Beyond accession source, race and specialty were also correlated with retention. In particular, African Americans, Hispanics, and Native Americans stayed, on average, more than three years longer than did white non-Hispanic physicians (after controlling for accession source). More highly compensated specialties, such as surgery, obstetrics, and orthopedics, also tended to have shorter retentions than did general and internal medicine specialties. After controlling for residency length, the group with the longest retention was aerospace medicine physicians. This population was probably attracted to military service in the first place and sought a residency in a field that would allow for this kind of a career. The entering specialty with the highest 20-year retention rate was pediatricians. (See pp. 26–30.)

In general, physicians who pursued residencies in the military had much higher retention and also faster promotions. Graduates of the HPSP program who completed military residencies were promoted from both major to lieutenant colonel and from lieutenant colonel to colonel more quickly than their HPSP civilian residency counterparts. The underlying cause of this difference is not clear. (See pp. 31–35.)

To the extent that promotion speed differences might be attributable to behavioral differences in these populations, it could be a reflection of differences in commitment to military service of the two groups. The HPSP graduates who were more interested in civilian careers may have self-selected themselves into civilian residencies. An alternative, although not mutually exclusive, explanation is that military residencies helped transition physicians into the military's culture. Regardless of a physician's taste for military service when he or she was selecting a residency, those who entered military residencies had a greater opportunity to become acculturated to the expectations and roles of a physician in the Air Force Medical Corps.

## Physician Cohort Analysis

To study physician predilection to accept MSP, we focused on entering cohorts of physicians. For instance, a physician would be in the 1989 entering cohort if his or her first Air Force service as a physician occurred during FY89.

While members of an entering cohort share their first year of service as Air Force physicians, intracohort heterogeneity remains considerable. Along with having different medical specialties, some members of an entering cohort have already completed civilian residency programs, while others are just starting military residency programs.

Physicians who enter Air Force service having already completed a civilian residency are typically just three or four years away from being eligible to leave the Air Force. By contrast, a physician whose first service is as a military resident is many more years away from fulfilling his or her service obligation, since years in a military residency do not count toward educational obligation fulfillment. Indeed, data confirm that physicians who enter the Air Force with completed residencies depart Air Force service at a much faster rate. (See pp. 39–40.)

To qualify for MSP, a physician must have

- completed appropriate residency training (civilian or military)
- at least eight years of creditable service OR completed any active duty service obligation incurred for medical education and training.

We estimated when individuals became eligible for MSP on a physician-by-physician basis. A typical physician entering cohort has two peaks of MSP eligibility attainment. The first peak occurs after three to four years when civilian residency-completing physicians fulfill their initial obligation to the Air Force. We label this population “early eligibles.” The second peak occurs seven to eight years after entrance when military residency-completing physicians either fulfill their initial obligation or complete eight years of service. We label this population “later eligibles.” “Later eligible” physicians have accepted MSP at much greater rates than “early eligible” physicians. There has,

however, been an upturn in recent cohorts' early eligible MSP acceptance rates. (See pp. 44–47.)

## **Trends in Accession, Retention, and Promotion in the Air Force Dental Corps (1976–2007)**

Unlike physicians, who have many different accession sources and specialties, Air Force dentists are a more homogeneous group. Most dentists during the study period were direct accessions (particularly in the early years that were the subject of the retention and promotion analyses). This trend was reversed toward the end of the study period, in which HPSP graduates became the most common accession source. Dentists also had fewer specialties than physicians; for the most part, the Dental Corps was dominated by generalists. Although generalists did predominate, many of them continued their training while in the Dental Corps. One-third to one-half of dentists who entered in a non-residency field left with a residency completed. (See pp. 49–55.)

The retention of dentists was relatively high. A dentist entering the Dental Corps at the beginning of the study period had a greater than 60-percent chance of staying for longer than three years, greater than 40-percent chance of staying for longer than seven years, and greater than 20-percent chance of staying for longer than 19 years. Over time, however, retention at every experience level decreased. The cause of this decrease is not clear. It does correspond to the entry of HPSP graduates, but this association is not necessarily causal. Decreased retention has led to a shrinking of the Dental Corps. (See pp. 54, 56–58.)

The retention of underrepresented minorities was somewhat higher than that of white non-Hispanic dentists. Women had lower observed retention, especially at seven years of service. (See pp. 58–60.)

Promotion for dentists followed quite predictable promotion points. Promotion from captain to major, major to lieutenant colonel, and lieutenant colonel to colonel each most often happened at six-year intervals. Consistent with this pattern, more than half of all colonels were promoted in their 18th year. We found some evidence of differential promotion by gender and race in the earlier cohorts. However,

these findings were based on small samples and are not adjusted for entry year, so it remains an open question whether this association would hold with more careful statistical controls. (See pp 60–63.)

Because many of the retention and promotion findings in our analysis were restricted to entry years from 1978 to 1988 (to avoid truncation and censoring problems), they may not generalize to later cohorts.

## **Dentist Cohort Analysis**

Dentists' responses to MSP opportunities have been very different from those of physicians. Conditional on becoming eligible for MSP, dentists have accepted such pay (the Dental Officer Multiyear Retention Bonus [DOMRB]) at much greater rates than physicians have. (See p. 65.) However, most Air Force dentists have not completed residencies that would make them eligible for MSP/DOMRB. (See p. 67.) While the DOMRB has had no clear effect on dentist attrition (which has been trending up), it has sharply reduced the percentage of Air Force dentists who are within one year of the expiration of their service commitment. (See pp. 69–70.)

## **Conclusions**

In the short run, the major accession flows into the Air Force Medical and Dental Corps (HPSP, USUHS, and FAP) are predetermined. Therefore, if the Air Force wants to increase the Medical or Dental Corps populations, the only clear-cut short-run tactic would be to reduce the attrition rate of physicians and dentists whose service commitments are about to expire. (See p. 71.)

MSP is intended to keep physicians and dentists in the Air Force after their initial service obligations have expired. MSP has been successful in that eligible dentists, in particular, have often accepted it. Most eligible physicians have heretofore refused MSP, but physicians in some subpopulations, e.g., those who received residency training

at military medical centers, have shown growing inclination to accept MSP. Increasing MSP levels appears to increase the percentage of physicians who choose to accept MSP rather than leaving Air Force service. (See p. 72.)

Both the Medical Corps and Dental Corps have had accession totals and attrition rates in recent years that will not sustain the corps' current sizes. Unless the Air Force wants these corps to continue to shrink, steps must be taken to either increase accessions or reduce attrition. (See pp. 72–74.)

We recommend the Air Force focus on increasing Medical Corps accessions. Still further increases in MSP could further reduce Medical Corps attrition, but the result would be an increasingly senior Medical Corps over time. If the Air Force wishes to maintain its current Medical Corps seniority structure, accessions must be increased or at least stabilized. (See pp. 73–74.)

We urge the Air Force to consider retention bonuses for dentists who have not yet completed residencies that make them eligible for DOMRB. Dental Corps accessions have been variable from year to year but have not shown the consistent diminution seen in the Medical Corps. DOMRB-eligible dentists are being retained at a high rate. The hole in the Dental Corps' portfolio lies in retaining dentists who have not completed DOMRB-qualifying residencies. (See p. 74.)

Table S.1 summarizes our findings and recommendations.

**Table S.1**  
**Summary of Findings and Recommendations**

Category	Physicians	Dentists
Accessions	Trending downward	Static
Attrition	Near historic lows	Variable but trending up
Acceptance of MSP/DOMRB	Increased in recent years	About 50%, conditional on eligibility
Recommendation	Focus on increasing accessions	Increase retention incentives for dentists not eligible for DOMRB