Longitudinal Lifecycle Analysis of Voluntary Separation Among Military Physicians: Empirical Report

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ABSTRACT

Retaining military physicians is essential to sustaining military medical readiness, yet most studies treat physician attrition as a static outcome rather than a process that evolves across a physician's career. This study examined whether predictors of voluntary separation differ by career stage using longitudinal administrative data from U.S. military physicians entering active duty between 1994 and 2017. Fixed-effects logistic regression models were estimated separately for early and established career stages while controlling for demographic, military, family, and specialty characteristics. Retention determinants varied substantially across the professional lifecycle. Higher-ranked direct accessions demonstrated greater early-career separation, whereas traditional accessions showed increasing retention with clinical experience. Married physicians with dependents exhibited the strongest retention, while single-parent households experienced greater early-career attrition. Operational deployment was not associated with voluntary separation. These findings suggest that military physician retention is a dynamic process and support the development of career-stage-specific retention strategies to strengthen the military physician workforce and medical readiness.

INTRODUCTION

The Military Health System invests substantial resources in recruiting and developing physicians to support operational readiness and the delivery of healthcare to Service members and their families. When experienced physicians leave military service, the loss extends beyond staffing shortages to include diminished institutional expertise, increased replacement costs, and reduced continuity of care. Although numerous studies have examined workforce turnover, less attention has been given to how professional experience, family responsibilities, accession pathways, and specialty demands interact over time to influence physicians' decisions to remain in uniform. This study addresses that gap by examining patterns of military physician workforce stability across the span of a medical career, providing evidence to inform more targeted personnel policies and long-term force sustainment

METHODS

A retrospective longitudinal cohort study was conducted using administrative personnel records of U.S. military physicians entering active duty between fiscal years 1994 and 2017. An inception cohort design was employed to capture physicians from the beginning of their military careers and minimize left-censoring bias. Career progression was stratified into two clinically meaningful periods: Early Career (0–5 clinical years of service) and Established Career (>5 clinical years of service). Separate fixed-effects logistic regression models were estimated to examine the probability of voluntary separation across career stages. Independent variables included physician demographics, service branch, accession source, pay grade, medical specialty, educational attainment, family composition, and operational deployment history. Fiscal year fixed effects and physician-level clustered standard errors were incorporated to account for temporal changes and repeated observations within individuals, allowing the identification of career-stage-specific factors associated with workforce stability.

RESULTS

Table 1: FEGLM Estimation Results Across Career Lifecycle Stages (Military YOS Stratification)

	Early Career	Established Career
Years of Service (YOS)	-0.10* (0.04)	-0.12. (0.06)
Clinical_YOS	-0.30* (0.13)	0.39*** (0.08)
Divorced / Separated / Other	-2.09*** (0.45)	-0.57 (0.52)
Never Married	-2.39*** (0.23)	-1.05*** (0.28)
Dependents (1-2)	-2.52*** (0.21)	-1.63*** (0.25)
Dependents (>2)	-2.34*** (0.21)	-1.52*** (0.25)
Operational Deployment (Yes)	-0.07 (0.17)	0.17 (0.17)
Age	-0.01 (0.01)	0.03. (0.02)
Female	0.08 (0.13)	0.17 (0.15)
Accession Group		
Other Unknown	0.18 (0.34)	-0.17 (0.29)
ROTC	-0.52* (0.26)	-0.72* (0.29)
Service Academies	-1.64** (0.52)	-1.46** (0.46)
Pay Grade		
O-04 (Major/LCDR)	1.04*** (0.23)	2.80*** (0.42)
O-05 (Lt Col/CDR)	0.80 (0.65)	4.62*** (0.74)
Service		
Air Force	1.63*** (0.2830)	1.80*** (0.24)
Navy	1.10* (0.50)	1.19. (0.65)
Education		
Bachelor or Below	0.63** (0.24)	-1.98* (0.98)
Master's & Post-Master's	-0.03 (0.17)	-0.60. (0.32)
Research Doctorate/Post-Doc	-0.05 (0.35)	0.23 (0.56)
Unknown	0.53* (0.21)	-0.05 (0.52)

	Early Career	Established Career
Medical Specialty		
Emergency & Anesthesia	0.10*** (0.28)	1.67*** (0.39)
Internal Med & Subspecialties	0.33 (0.30)	0.62 (0.37)
OBGYN	0.63* (0.30)	1.53*** (0.39)
Operational & Preventive Med	-0.35 (0.34)	0.51 (0.42)
Pediatrics	0.18 (0.33)	0.67 (0.411)
PrimaryCare &Gen Med	0.84** (0.27)	0.94* (0.38)
Psychiatry	0.07 (0.46)	0.24 (0.53)
Surgery & Subspecialties	0.59* (0.27)	0.18 (0.42)
Family		
Div/Sep/Other x Dep (1-2)	2.70*** (0.65)	0.11 (0.80)
Never Married x Dep (1-2)	2.59*** (0.40)	1.33* (0.66)
Div/Sep/Other x Dep (>2)	-0.07 (0.80)	1.452 (0.90)
Never Married x Dep (>2)	2.55*** (0.51)	-10.61*** (0.33)
Clinical YOS x Pay Grade: O-04 (Major/LCDR)	0.90*** (0.12)	-0.21*** (0.05)
Clinical YOS x Pay Grade: O-05 (Lt Col/CDR)	0.93*** (0.19)	-0.45*** (0.07)

CONCLUSION

Military physician workforce decisions are influenced by factors that change throughout the course of a professional career. By demonstrating that predictors of voluntary separation differ across career stages, this study highlights the limitations of uniform retention policies and supports a more adaptive approach to workforce management. Career-stage-specific strategies that consider professional advancement, family circumstances, accession pathways, and specialty demands may better align with physicians' evolving needs and improve long-term workforce stability. Incorporating a lifecycle perspective into military personnel planning has the potential to strengthen physician retention, preserve institutional expertise, and enhance the readiness of the Military Health System.

Figure 1

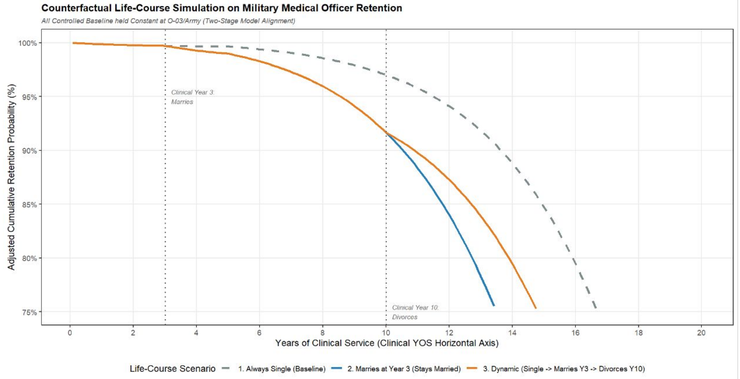
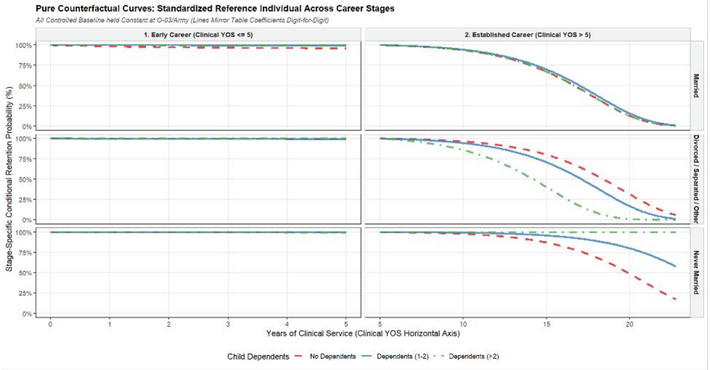


Figure 2



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DISCUSSION

The findings indicate that physician workforce decisions are shaped by a dynamic combination of professional, institutional, and personal factors that evolve throughout a military career. Rather than identifying a single set of predictors associated with physician retention, this study demonstrates that the relative importance of career progression, accession pathway, family structure, specialty, and promotion milestones changes over time. These results suggest that physician workforce behavior is best understood as a developmental process influenced by shifting professional opportunities and personal responsibilities rather than as a single retention event.

The absence of a significant association between operational deployment and voluntary separation further suggests that long-term career incentives and household circumstances may exert greater influence on workforce decisions than episodic operational experiences. This finding challenges common assumptions regarding physician attrition and indicates that career decisions are more strongly influenced by structural and professional considerations than by deployment history alone. These results also support the application of career development and life-course perspectives to military workforce research, emphasizing that physicians' motivations and institutional commitments change as careers mature.

From a policy perspective, these findings argue for a shift from broad retention initiatives toward **precision retention strategies** that target physicians at specific career milestones and according to individual workforce characteristics. Tailoring interventions to specialty, accession pathway, family composition, and professional stage may improve workforce stability, preserve institutional expertise, reduce replacement costs, and strengthen the long-term readiness of the Military Health System. Future research should examine how compensation, promotion timing, and targeted retention incentives influence physicians at critical career transition points, providing evidence to guide more effective workforce planning.