

# Recent Workforce Trends in Orthopaedic Surgery: Overall Attrition is Increasing, yet Female Orthopaedic Surgeons are Leaving More Frequently and Much Earlier in their Careers

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## INTRODUCTION:

The attrition rate of physicians in the United States has been an increasing concern, especially considering the recent COVID-19 pandemic. Prior studies have shown that reasons for leaving clinical practice vary widely and include professional dissatisfaction, disability, or the pursuit of alternative career opportunities. There is a lack of studies assessing attrition within orthopaedic surgery, particularly regarding demographics and timing of those who are electing to leave practice. As the population continues to age, there is an increasing need for a growing workforce to address the aging population, making attrition of orthopaedic surgeons an important societal issue to understand. As such, the purpose of this study was to assess the rate of attrition in orthopaedic surgery and assess demographic profiles and timing of those who are leaving the field of orthopaedic surgery.

**METHODS:** A repeated cross-sectional analysis was performed using the publicly available Medicare Physician and Other Practitioners data from year 2015-2021, and this was linked by National Provider Identifier to the publicly available Physician Compare database. We included all orthopaedic surgeons who were active in the database. Physicians exhibiting attrition were those not identified within the orthopaedic surgery workforce during a given study year (e.g., 2020) but who were identified as part of the workforce in the immediately preceding study year (e.g., 2019). We calculated the orthopaedic surgery workforce proportion that exhibited attrition annually, specifically assessing the covariates of gender and years in practice. The study was deemed exempt by our local institutional review board.

**RESULTS:** A total of 27,704 independent orthopaedic surgeons were included from 2015 to 2021. During the study period, the annual overall attrition rate in orthopaedic surgery increased from 4.1% in 2015 to 5.2% in 2020 ( $p < 0.01$ ) (Table 1). The mean annual attrition rate was higher among female orthopaedic surgeons ( $5.9\% \pm 0.9\%$ ) compared to male orthopaedic surgeons ( $4.6\% \pm 0.4\%$ ) ( $p = 0.016$ ) (Table 2). The mean total number of years in practice at time of attrition for females was  $15.2 \pm 2.5$  years (Range 0-40 years), which was significantly lower than the mean for males of  $29.1 \pm 0.6$  years (Range 0-66 years) ( $p < 0.01$ ) (Table 3).

## DISCUSSION AND CONCLUSION:

Orthopaedic surgery continues to have low rates of gender diversity, while research shows that gender concordance of surgeons with patients positively affects patient outcomes. Furthermore, female surgeons and internists have been shown to have lower 30 day mortality than their male counterparts. This study aimed to assess the rate of attrition in orthopaedic surgery and evaluate the demographic profiles of those leaving the field. This study demonstrates that attrition among orthopaedic surgeons seems to be increasing in recent years, consistent with other fields during the time of COVID-19. Further, this data demonstrates a significant difference in attrition rates between male and female orthopaedic surgeons from 2015 to 2021, with female orthopaedic surgeons exhibiting both a higher mean annual attrition rate and a tendency to leave practice earlier at the time of attrition compared to their male counterparts. This data suggests that females are serving far less total career years than males and leaving earlier into their careers. These findings underscore the importance of addressing the attrition of orthopaedic surgeons and calls for further investigation into the underlying factors contributing to departure, especially with research demonstrating the importance of gender diversity among orthopaedic surgeons. Understanding the reasons behind attrition and developing targeted strategies to mitigate attrition is crucial. Future studies and interventions should focus on improving job satisfaction, work-life balance, and addressing potential gender-specific challenges to promote not only recruitment but retention and a diverse orthopaedic workforce.

Table 1 – Overall Annual Attrition Rate and Years in Practice at Time of Attrition

Year	Total Surgeons	Overall Mean Annual Attrition Rate	Mean Years in Practice Overall
2015	21,355	4.1%	28.6
2016	21,393	4.2%	27.4
2017	21,537	4.8%	27.3
2018	21,578	4.6%	28.3
2019	21,638	5.2%	29.9
2020	21,537	5.2%	27.6
2021	21,499	x	x
MEAN (SD)		4.7% (0.4%)	28.2 (0.9)

Table 2 – Annual Attrition Rate Comparison Between Males and Females

Year	Mean Annual Attrition Rate Males	Mean Annual Attrition Rate Females
2015	4.1%	4.5%
2016	4.1%	6.8%
2017	4.7%	5.8%
2018	4.6%	5.1%
2019	5.1%	6.9%
2020	5.1%	6.4%
2021	x	x
MEAN (SD)	4.6% (0.4%)	5.9% (0.9%)
P-value	0.016	

Table 3 – Mean Total Years in Practice at Time of Attrition, Males and Females

Year	Mean Years of Practice Males	Mean Years of Practice Females
2015	29.5	12.2
2016	28.2	16.1
2017	29.0	12.2
2018	29.0	18.3
2019	29.9	16.9
2020	28.9	15.4
2021	x	x
MEAN (SD)	29.1 (0.6)	15.2 (2.5)
P value	p<0.01	