

The Association between Academic Productivity and Sunshine Act Supplemental Income among Fellowship Programs for Shoulder and Elbow Orthopaedic Surgery: A Retrospective Analysis of the Open Payments Database

Brandon Joseph Martinazzi, William Lewis Johns, Anthony Baumann¹, Deven Philip Curtis, Albert Thomas Anastasio, Kempland Corbin Walley², Surena Namdari³

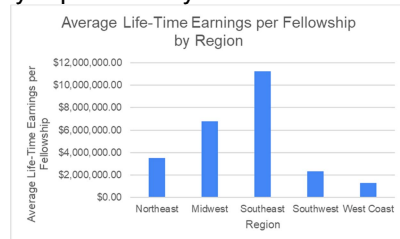
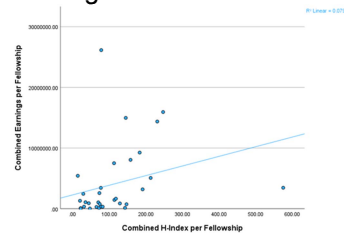
¹College of Medicine, Northeast Ohio Medical University, ²University of Michigan | Michigan Medicine, ³Rothman Institute

INTRODUCTION: The Physician Payment Sunshine Act was established in 2010 to increase transparency of financial relationships between industry and physicians. Due to this legislation, the Centers for Medicare and Medicaid Services created a publicly available “Open Payments” database containing information on payments made to physicians. Given that orthopaedic surgery residents are undoubtedly influenced by their mentors throughout their education, an understanding of how academic productivity correlates with industry supplemental income at a particular fellowship may help guide residents wishing to pursue a career in shoulder and elbow surgery, especially for those interested in working closely with industry throughout their careers. The purpose of this study was to determine the relationship between academic productivity, various fellowship-specific characteristics, and physician supplemental income to help guide residency decision making and provide a current snapshot of orthopaedic academia.

METHODS: This study is a retrospective analysis of the academic and industry productivity of shoulder and elbow orthopaedic surgery fellowships in the United States as of March 2023. This study utilized the Centers for Medicare and Medicaid Services (CMS) website for physician lifetime earnings (dollars), the Scopus website to determine each individual physician’s H-index as a proxy for academic productivity, and the American Shoulder and Elbow Surgeons (ASES) website for fellowship information. Other variables collected included presence of an affiliated Masters of Business Administration (MBA), ranking of an affiliated hospital on Newsweek, and reputation ranking of an affiliated residency program on Doximity. Life-time earnings reflects all years reported on the CMS website (2015-2021).

RESULTS: As of March 2023, there are a total of 33 shoulder and elbow orthopaedic surgery fellowships (100% of total fellowships) in the United States with 139 physicians (95.2% of total physicians) as fellowship faculty with complete information available for data analysis. Mean combined physician H-index per fellowship was 110.97 ± 105.70 (range, 14.00 – 575.00). Mean life-time earnings per fellowship was $\$4,038,881.25 \pm \$5,994,313.06$ (range, $\$31,901.18 - \$26,145,147.28$). There was significant and moderate positive correlation between combined fellowship H-index and total life-time earnings per fellowship ($p=0.001$, Spearman’s rho = 0.540). Total life-time earnings per fellowship has no significant association with region of the fellowship program in the United States ($F=2.16$, $p=0.100$). There was also no significant association between total life-time earnings per fellowship and ranking of affiliated residency program on Doximity ($p=0.978$), ranking of affiliated hospital on Newsweek ($p=0.676$), and presence of an affiliated MBA program ($p=0.143$).

DISCUSSION AND CONCLUSION: There is a significant and moderately strong positive correlation between academic productivity and industry supplemental income in shoulder and elbow orthopaedic surgery fellowships in the United States. However, there is no significant association between level of supplemental income and fellowship-specific characteristics such as location, hospital affiliation, and residency affiliation. This study can inform fellowship applicants seeking information on industry productivity of shoulder and elbow orthopaedic surgery fellowships.



Fellowship Program by Combined Total Life-Time Earnings	Combined Payments	Total Life-Time Earnings	Combined Payments	Total Life-Time Earnings	Average Total Life-Time Earnings per Physician per Fellowship	
1	3	26,145,147.28	1521	16	3	8,715,049.09
2	5	15,939,991.32	2159	247	5	3,187,999.26
3	5	7,430,000.14	1007	247	5	1,486,000.03
4	3	14,311,294.12	2334	201	3	4,770,431.37
5	3	1,238,899.22	1603	161	3	412,966.37
6	3	8,330,000.00	1667	168	3	2,776,666.67
7	3	7,801,581.16	1668	153	3	2,600,527.05
8	3	1,423,797.80	2117	14	3	474,599.27
9	3	8,399,251.80	1681	215	3	2,799,751.93
10	3	3,143,021.71	1594	336	3	1,047,673.90