



Utility of Orthopedic Hand Surgery Fellowship Training for Plastic Surgery Residents



Jason Silvestre MD¹, Benjamin Chang MD², L Scott Levin MD², , Robert H. Wilson MD¹

1. Howard University Hospital, Department of Orthopaedic Surgery and Rehabilitation, 2. University of Pennsylvania Perelman School of Medicine

Introduction

- Plastic surgeons often select orthopedic hand surgery fellowships to complement their skills and bridge perceived deficiencies in bone and joint cases
- This study aims to quantify the impact of this approach on operative hand experience.

Methods

- ACGME case logs were analyzed for independent plastic surgery residents and orthopedic hand surgery fellows (2016-2017 to 2019-2020)
- Reported hand surgery cases were compared between residency and fellowship using student's t tests

Results

- 393 plastic surgery residents and 606 orthopedic hand surgery fellows were included
- The number of orthopedic hand surgery fellowships increased from 64 to 70 (9% increase)
- The number of independent plastic surgery residency programs decreased from 64 to 44 (31% decrease)

Results

- One year of orthopedic hand surgery fellowship training afforded more than twice the volume of hand surgery cases than plastic surgery residency training (886 ± 235 vs 428 ± 147 , $p < 0.001$)

Academic Year	Orthopedic Hand Surgery Fellowship		Independent Plastic Surgery Residency	
	No. of Programs	No. of Fellows	No. of Programs	No. of Residents
2016 – 2017	64	146	64	128
2017 – 2018	66	152	55	104
2018 – 2019	66	153	47	84
2019 – 2020	70	155	44	77
Total	-	606	-	393

Table 1. Number of Programs and Trainees at Orthopedic Hand Surgery Fellowships and Independent Plastic Surgery Residencies

Hand Surgery Case Categories	Mean Number of Reported Cases $\pm$ SD		P	Fold Difference
	Orthopedic Hand Fellowship	Plastic Surgery Residency		
Tumor	138.2 ± 63.2	22.1 ± 11.8	< 0.001	6.2
Joint Reconstruction	108.7 ± 21.6	18.8 ± 11.5	< 0.001	5.8
Nerve Decompression	158.4 ± 63.1	53.0 ± 32.6	< 0.001	3.0
Dupuytren's	18.4 ± 10.5	7.6 ± 6.4	< 0.001	2.4
Fracture Management	132.8 ± 21.7	59.6 ± 24.1	< 0.001	2.2
Wound Management	85.5 ± 43.4	48.6 ± 14.8	< 0.001	1.8
Microvascular Repair	15.8 ± 13.6	10.5 ± 9.6	< 0.001	1.5
Congenital	8.1 ± 8.1	6.5 ± 5.3	< 0.001	1.3
Nerve Repair	38.1 ± 26.5	31.7 ± 18.4	< 0.001	1.2
Tendon / Muscle	72.1 ± 36.8	64.5 ± 29.8	< 0.001	1.1
Amputation	16.9 ± 11.7	16.6 ± 8.7	0.643	1.0
Miscellaneous	41.9 ± 21.8	88.7 ± 49.5	< 0.001	0.5
Arthroscopy	51.1 ± 53.5	0	< 0.001	--
Total	886.1 ± 234.7	428.1 ± 147.2	< 0.001	2.1

Table 2. Comparison of Hand Surgery Case Volume Between Orthopedic Hand Surgery Fellowship and Plastic Surgery Residency

Results

- Case categories with the highest positive fold difference in case volume encountered during orthopedic surgery hand fellowship were Tumor, Joint Reconstruction, Nerve Decompression, Dupuytren's, and Fracture Management ($p < 0.001$)

Conclusion

- On average, orthopedic hand surgery fellowship training doubles operative hand case volume encountered during plastic surgery residency
- Significant increases are especially encountered for select case categories including bone and joint cases
- Prospective trainees can make informed decisions on the utility of orthopedic hand surgery training

References

- Drinane JJ, Drolet B, Patel A, Ricci JA. Residency Training and Hand Surgery Practice Patterns: A National Surgical Quality Improvement Program Database Analysis. Journal of Hand and Microsurgery. 2020 Jun 1.
- Carter JT, Tarabishy S, Polmear M, Gonzalez G, Herrera FA. Practice Patterns Among Hand Surgeons According to Primary Residency Training: A National Surgical Quality Improvement Project Study. Annals of Plastic Surgery. 2021 Jun 1;86(6S):S593-8.
- Mehta K, Pierce P, Chiu DT, Thanik V. The effect of residency and fellowship type on hand surgery clinical practice patterns. Plastic and reconstructive surgery. 2015 Jan 1;135(1):179-86.
- Drinane JJ, Drolet B, Roth MZ, Eberlin KR. Preparation for Hand Surgery Fellowship: A Comparison of Resident Training Pathways. Plastic and Reconstructive Surgery. 2021 Jun 9:10-97.