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## The Veterans Affairs Medical Center's Contribution to Plastic Surgery Education

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*Study concept and design:* Sasor, Chu, Evans, Wooden, Cohen, Tholpady.

*Acquisition, analysis, or interpretation of data:* Sasor, Chu, Evans, Cook, Wooden, Tholpady.

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This population-based study evaluates the levels of case minimums met by plastic surgery residents in Veterans Affairs hospitals.

Veterans Affairs (VA) medical centers have played a major role in graduate medical education since the 1940s. Currently, the VA health system operates 168 medical centers across the United States and supports the clinical training of more than 41 200 medical residents annually. Teaching hospitals within the VA provide subspecialty medical and surgical care and perform the majority of complex and high-risk surgical procedures.

The diversity of pathologic conditions requiring a plastic surgery skill set are prominent within the VA population: cancer reconstruction, hand surgery, facial fractures, and burn care. Educational opportunities are ample. Plastic surgery residents in university-based training programs typically rotate at the VA hospital for several months each year. This study examines the relationship between the plastic surgery service and resident education within the VA hospitals.

## Methods

All cases performed by the Division of Plastic Surgery at a single VA (R. L. Roudebush VA Medical Center, Indianapolis, Indiana) from January 1, 2010, through December 31, 2016, were reviewed. Cases performed in both the main operating room and the minor procedure room (starting April 1, 2013) were included.

Accreditation Council for Graduate Medical Education (ACGME) case logs were reviewed for all current plastic surgery residents at Indiana University School of Medicine. Surgeries performed at the VA hospital were identified and compared with case minimums required for successful completion of a plastic surgery residency. Integrated- and independent-track residents were evaluated separately. Procedures were classified as either reconstructive or aesthetic and then subdivided by body region: head and neck, breast, trunk, hand, lower extremity, and integument. This study received exempt status by the Indiana University Institutional Review Board.

## Results

A total of 5358 operative procedures were performed during the 7-year study period. A mean of 472 procedures were performed per year before 2013 compared with 1016 procedures per year after 2013. This change in operative volume directly correlates to the opening of a minor procedure room. Overall, the number of cases performed per year has steadily increased from 2012 to 2016: 450, 891, 949, 1036 and 1064, respectively.

Case logs for 16 current residents (10 integrated, 6 independent) were reviewed. A total of 7 residents (3 integrated, 4 independent) had completed all rotations at the VA hospital at the time of this study. Integrated residents spent a mean of 12.4 months rotating on the VA Plastic Surgery service during their 6-year residency, compared with 4.5 months in the 3-year independent program track. Overall, integrated residents completed a mean of 525 of 1000 required reconstructive cases and 10 of 150 required aesthetic cases while rotating at the VA hospital. Independent residents fulfilled 295 of 1000 reconstructive cases and 5 of 150 aesthetic cases. Both integrated and independent residents met 100% of case requirements in the subcategories of head/neck neoplasms, benign skin lesions, disease processes of the trunk, treatment of

Dupuytren contractures, and nerve decompressions. Residents met at least 50% of the required case minimums in treatment of pressure ulcers, hand and upper extremity reconstruction by primary closure or skin graft, tendon transfers, and arthroplasty/arthrodesis ([Table](#)).

## Discussion

The unique partnership between the VA health system and US residency training programs is beneficial to both patients and trainees. There is increasing demand for plastic surgery procedures within the VA health system and residents serve as a major part of the work force. Trainees benefit from the diversity and complexity of pathologic conditions encountered in the veteran population; a disproportionately high number of minimum case requirements are satisfied during rotation at the VA hospital. This study is limited by the fact that it is a single study review and only includes current plastic surgery residents; ACGME case logs are unavailable after a resident graduates. However, the findings have shown that the VA health system is a valuable resource in the education of plastic surgeons.

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## Figures and Tables

### Table.

#### Case Requirements Fulfilled at VA Hospital

Procedure	Required Minimum, No.	Total Mean Cases (%) <sup>a</sup>	
		Integrated (n = 3)	Independent (n = 4)
<b>Reconstructive</b>			
Head and neck			
Congenital defects	50	5.7 (11)	1.8 (4)

Neoplasms	70	166.7 (238)	109.8 (157)
Trauma	50	82.7 (165)	24.8 (50)
Breast			
Breast reduction	24	2.3 (10)	2.0 (8)
Absent breast	100	4.0 (4)	0.5 (1)
Trunk			
Wounds or deformities	23	5.3 (23)	3.8 (16)
Other disease processes	25	45.7 (183)	26.3 (105)
Hand and upper extremity			
Soft tissue reconstruction	10	12.0 (120)	4.3 (43)
Amputation	7	2.0 (29)	0.8 (11)
Tendon procedures	22	8.3 (38)	4.8 (22)
Fractures/dislocations	32	7.3 (23)	5.5 (17)
Dupuytren contracture	2	2.0 (100)	2.0 (100)
Nerve decompression	16	43.3 (271)	22.3 (139)
Arthroplasty/arthrodesis	3	2.0 (67)	1.5 (50)
Lower extremity			
Wound treatment with graft/flap	24	1.7 (7)	1.3 (5)
Other disease processes	25	7.0 (28)	7.8 (31)
Integument			
Burn reconstruction	16	10.7 (67)	4.0 (25)
Treat benign lesions	0	3.7	4.0
Treat malignant lesions	0	59.7	30.8

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<sup>a</sup>Percentage of requirements met.