

Commercial Insurance Rates and Coding for Lymphedema Procedures: The Current State of Confusion and Need for Consensus

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Background

- Over the past century, the surgical treatment of lymphedema has evolved from excisional operations to microsurgical restoration of lymphatic circulation with physiologic procedures: lymphovenous bypass (LVB) and vascularized lymph node transplant (VLNT).
- Coding for lymphedema procedures has not kept pace with advances in surgical treatment.
- Purpose: To examine **variation in commercial payer-negotiated rates** for the spectrum of CPT codes that may be used for lymphedema procedures.

Methods

- Cross-sectional analysis of 2021 hospital pricing data from Turquoise Health, a data broker that mines hospital websites for price disclosures, using 21 CPT codes encompassing excisional (direct excision, liposuction), physiologic (LVB, VLNT), and ancillary (lymphangiography) procedures.
- Rates normalized based on CMS Geographic Adjustment Factor (GAF)
- Price variation quantified using within-hospital ratios (WHRs) and across-hospital ratios (AHRs) for normalized commercial rates per CPT code.
- Mixed effects linear regression with random intercept by hospital modeled associations of GAF-normalized commercial rate with public payer (Medicare and Medicaid), self-pay, and list (i.e., chargemaster) rates.

Results

Figure 1. Commercial rate ratios

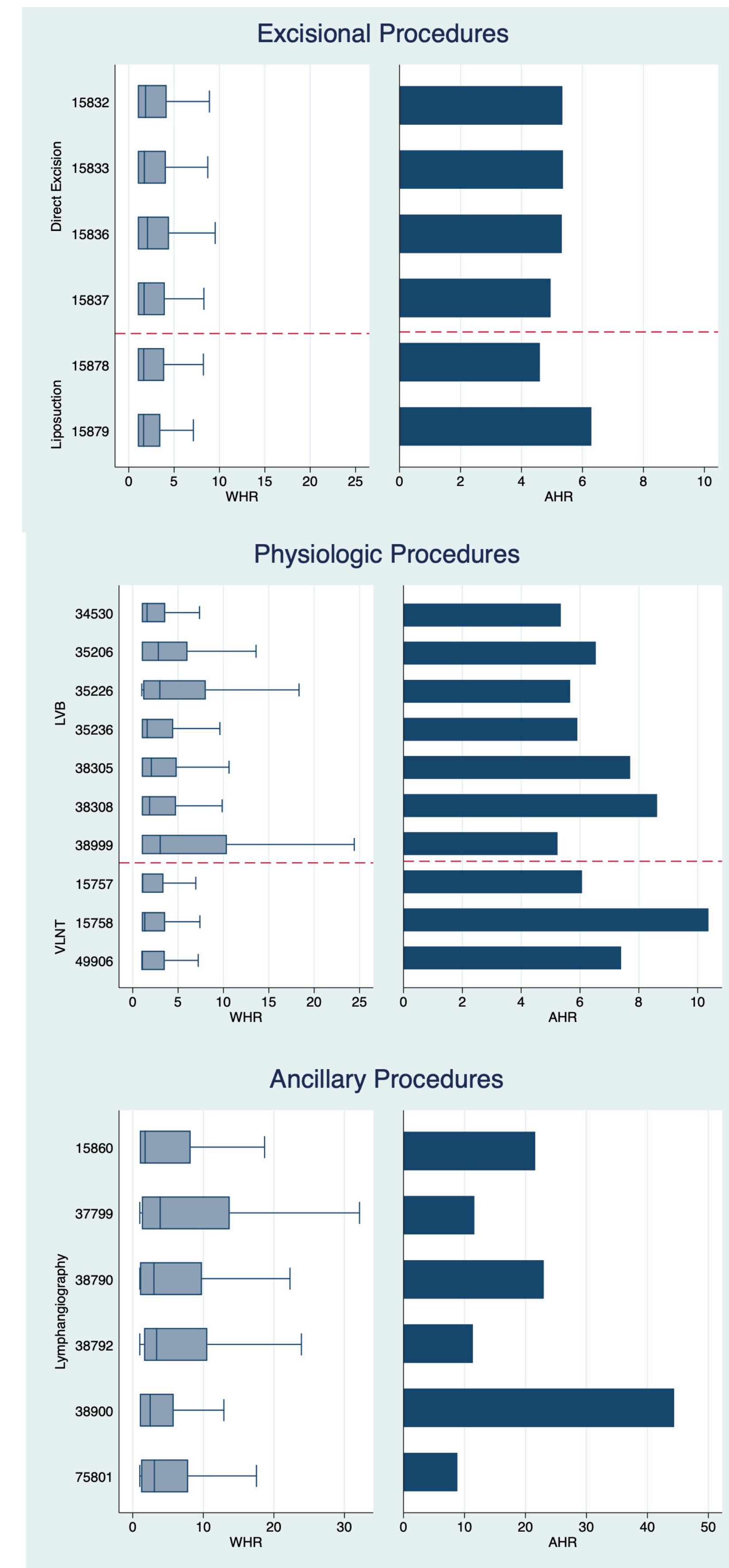
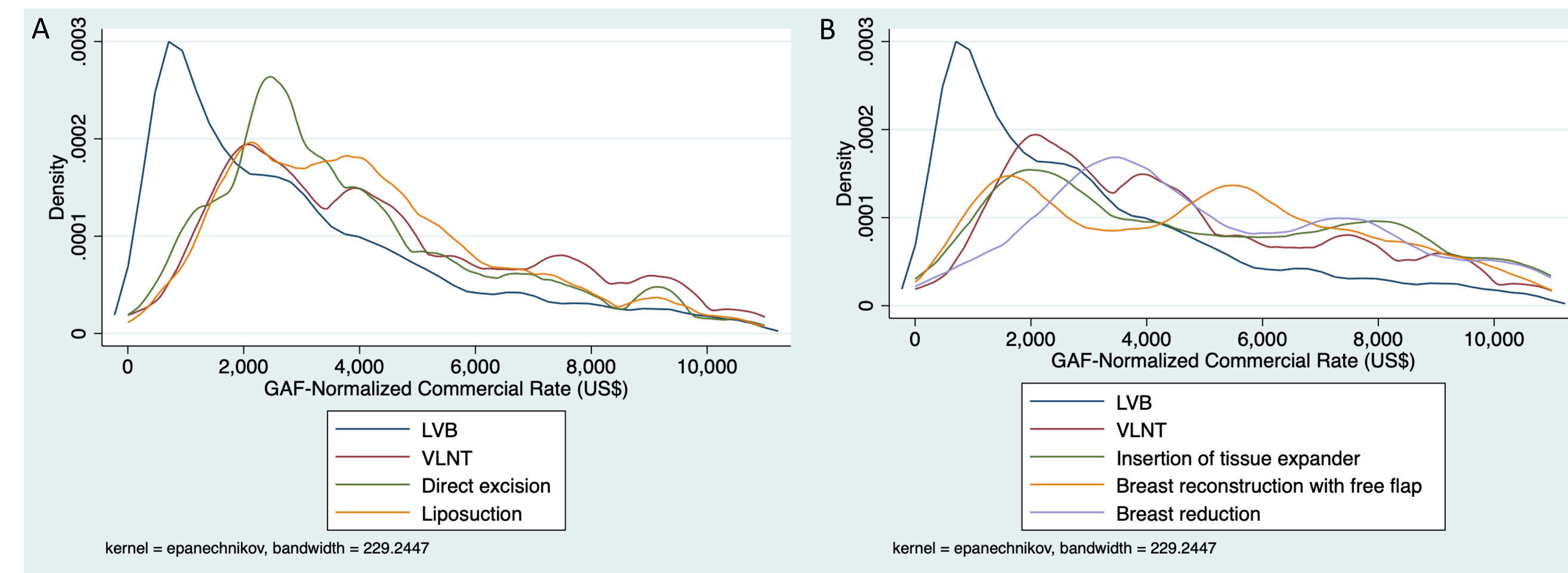


Table 1. Descriptive statistics of commercial rate for physiologic procedures

Procedure (CPT code)	No. Rates	Median (IQR), \$	WHR*	AHR**
LVB				
Saph-pop vein anastomosis (34530)	5,104	4,781.38 (2,980.47 – 8,943.26)	1.58	5.66
Repair UE blood vessel (35206)	17,781	3,756.10 (2,375.66 – 6,299.60)	2.82	5.91
Repair LE blood vessel (35226)	19,567	1,910.32 (1,002.21 – 3,242.78)	2.99	7.70
Repair vessel with vein graft (35236)	6,118	5,534.09 (3,044.39 – 9,526.33)	1.59	8.62
Lymphatic channel incision (38305)	7,369	3,015.93 (1,681.70 – 5,262.50)	2.05	5.23
Lymphangiectomy (38308)	6,293	3,728.37 (2,027.44 – 6,819.05)	1.86	6.06
Unlisted procedure (38999)	23,749	1,068.63 (643.66 – 2,368.32)	3.03	10.36
VLNT				
Other flaps and grafts (15757)	3,625	4,307.49 (2,520.90 – 7,527.96)	1.10	5.34
Free fascia flap (15758)	3,551	4,298.62 (2,460.58 – 6,453.62)	1.33	6.53
Free omental flap (49906)	2,617	4,231.15 (2,159.98 – 7,512.56)	1.01	7.40

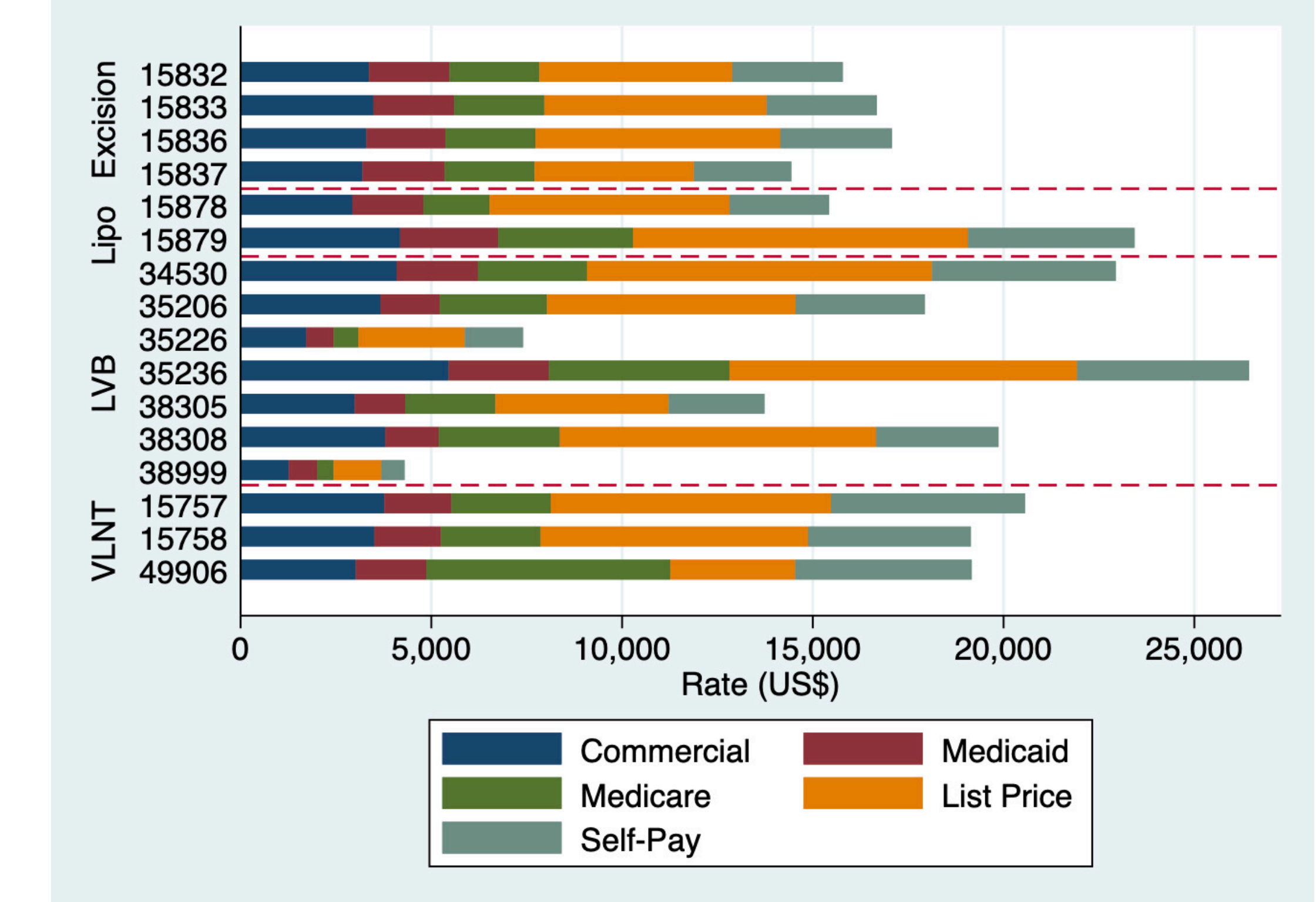
*Calculated as median of the median maximum divided by minimum commercial rate per hospital. **Calculated as median of the 90th percentile divided by 10th percentile normalized rate across all hospitals.

Figure 2. Comparative kernel density distributions of commercial rates



A) Median commercial rates for excisional procedures were higher than for physiologic procedures ($p < 0.001$, Wilcoxon rank sum test). B) Median commercial rates for physiologic procedures shown in comparison to breast reconstructive procedures.

Figure 3. Rates by payer type



For all physiologic CPT codes combined, mixed effects regression yielded significant associations of commercial rate with Medicare rate (coefficient 0.47, 95% CI 0.39 – 0.55, $p < 0.001$), suggesting that prior cost-effectiveness analyses based on Medicare rates can be generalized to commercial payer perspectives, though price variation weakens economic modeling.

Conclusions

- Commercial rates for physiologic procedures varied substantially within and across hospitals based on coding pattern.
- Physiologic procedures may be undervalued relative to excisional procedures** due to outdated coding and extensive variation.
- In order to streamline billing, preserve patient access, allocate appropriate value, and track clinical outcomes needed to support widespread acceptance, future efforts should focus on establishing a consistent coding language for lymphedema physiologic procedures.