

The Hidden Cost of Complexity: RVU Inefficiency in Hand Trauma

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BACKGROUND

- Work RVUs are a major driver of surgeon reimbursement, but if inaccurate, may not reflect actual workload.
- Hand trauma cases may be undervalued**
 - RVU system is **zero-sum** (increasing one CPT lowers others)
 - Increased clinical burden** (longer LOS, higher complication risk, more follow-up)
 - Over 50% of hand surgeons report **dissatisfaction with hand call** with pay as a contributing factor ¹
- Trauma procedures may reimburse less than elective care**, despite requiring more time and resources ^{2,3}
- Objective: To characterize reimbursement efficiency across traumatic hand surgery CPT codes using national operative data**

METHODS

- Retrospective review of **ACS-NSQIP 2019-2023** filtered by common traumatic hand surgery CPT codes
- Excluded: CPTs with **<100 cases**, Operative time **<10 min or >600 min**, Missing or incomplete data, Bundled procedures
- Primary outcomes:** Operative time (min), wRVUs, reimbursement efficiency (wRVU/min)
- Statistical Analysis using R (v 4.5.1): descriptive statistics, Pearson correlation (r)

RESULTS

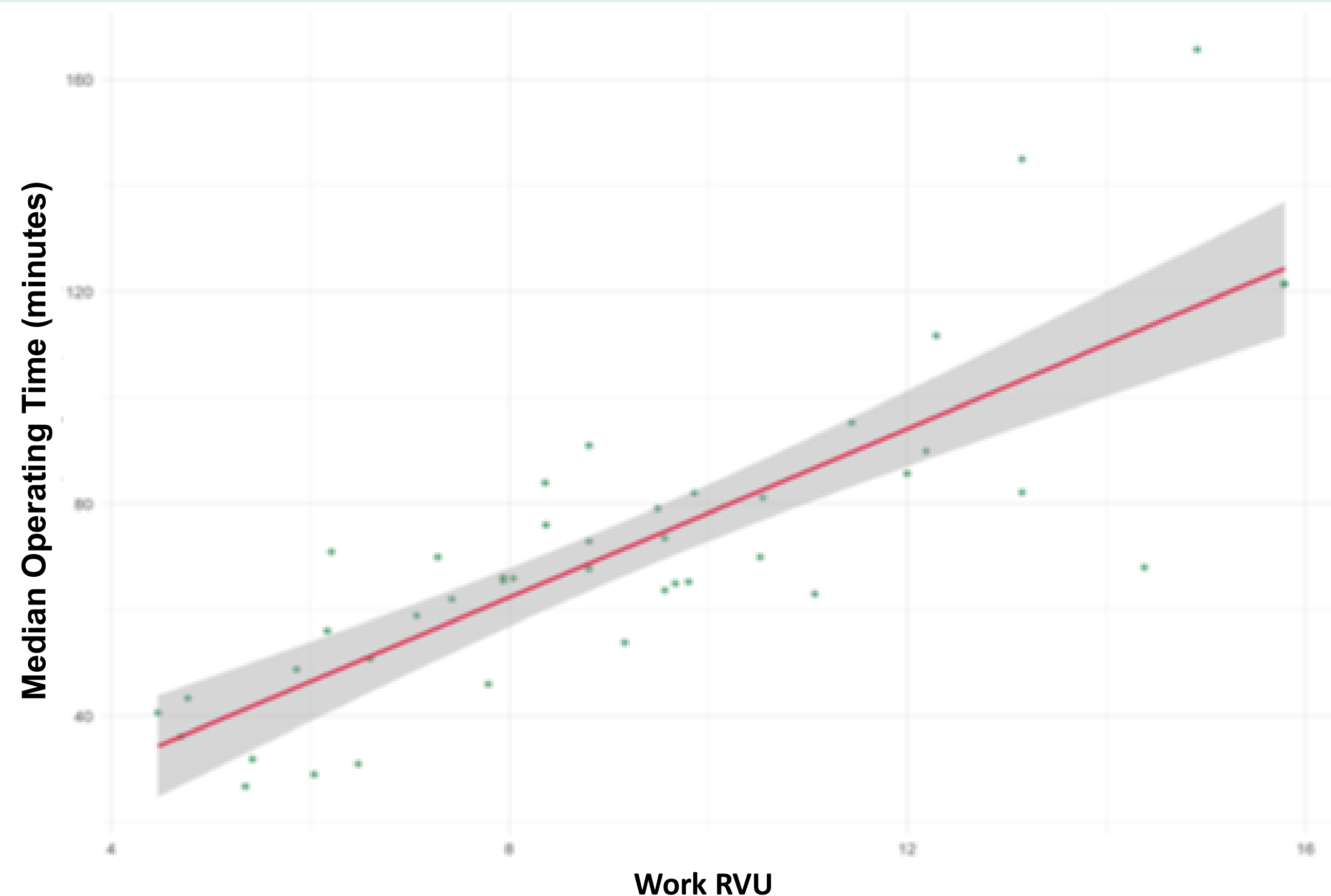


Figure 1. Median operating time vs Work RVU. **Longer trauma procedures receive more total RVUs** ($r = 0.823$, $p < 0.001$).

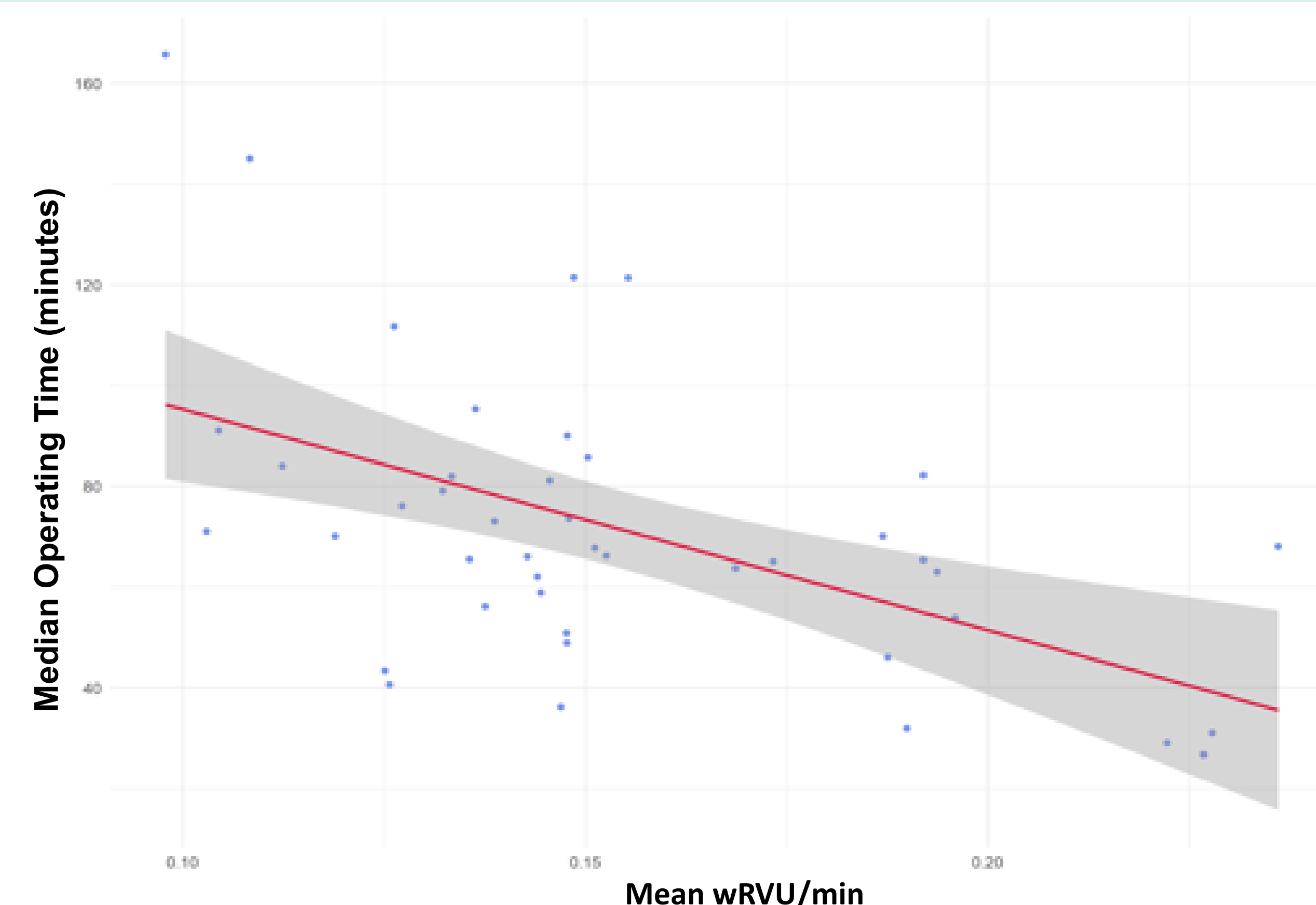


Figure 2. Median operating time vs. Mean Work RVU/Minute. **Longer trauma procedures generate lower reimbursement value per operative minute** ($r = -0.527$, $p < 0.001$).

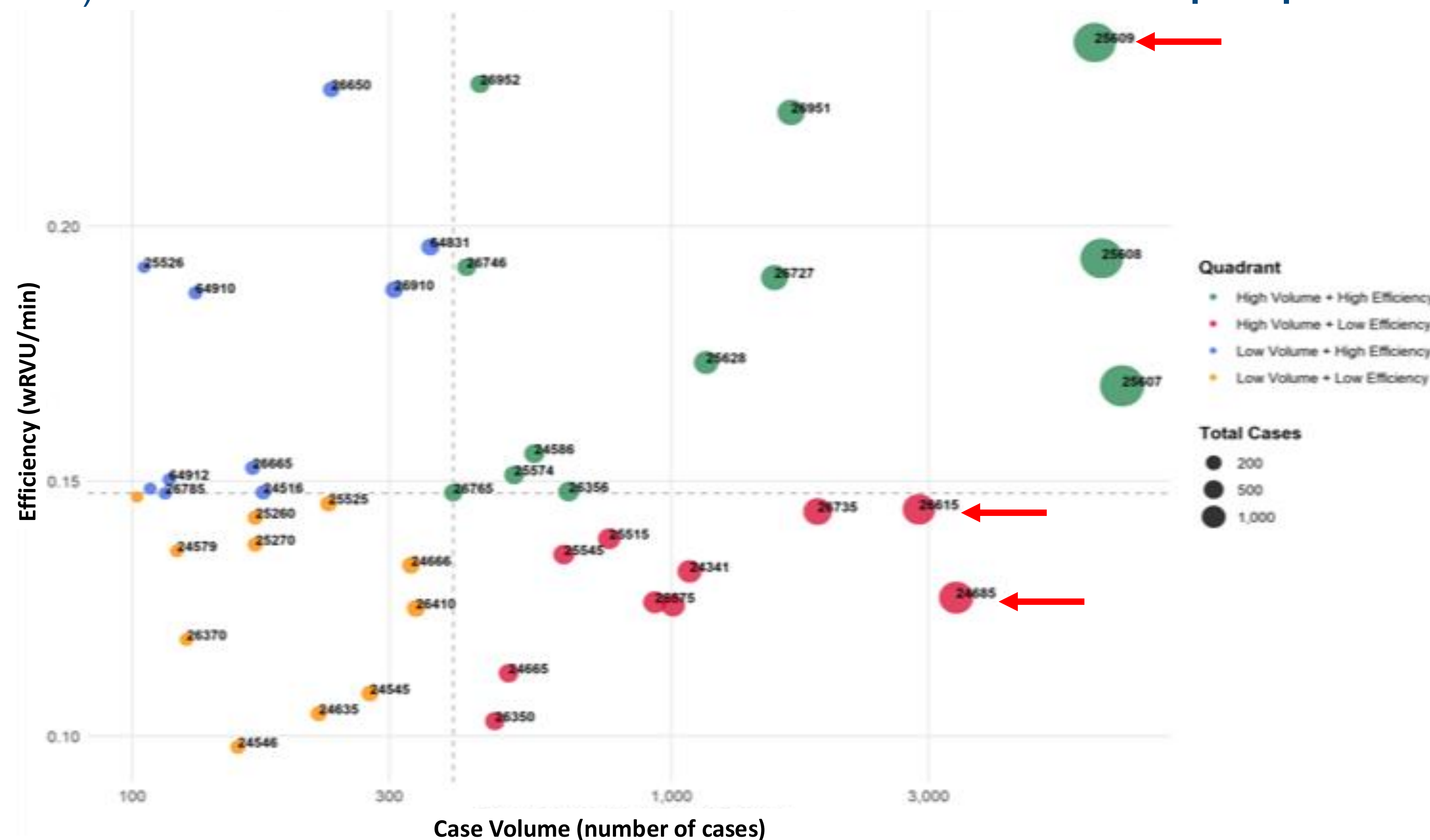


Figure 3. Volume vs Efficiency Matrix for Hand Trauma Cases.

Distal radius ORIF demonstrated the highest RVU/min (CPT 25609, RVU/min = 0.236)

Proximal ulna and metacarpal open fracture fixation had substantially lower efficiency (CPT 24685, RVU/min = 0.127; CPT 26615, RVU/min = 0.144)

CPT Code Key and Volume vs Efficiency Matrix Data available by scanning QR code



CONCLUSIONS

- While longer procedures receive higher total work RVUs, reimbursement efficiency declines significantly with operative time and complexity**
- Not all hand trauma procedures are valued equally, with substantial variation across common CPT codes
- Implications**
 - Complex trauma cases consume substantial OR resources and surgeon effort
 - Lower RVU/min may disincentivize difficult trauma call coverage
 - May contribute to dissatisfaction and burnout among hand surgeons
- Limitations:**
 - Operative time used as a surrogate for procedural complexity
 - RVU/min does not capture non-operative work
 - CPT coding may not fully reflect injury severity
- Lack of appropriate compensation for hand trauma cases could worsen access to trauma services and increase burden on safety-net centers**
- Future reform may consider urgency modifiers or alternative bundled payment models for emergent care

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