Temporal Trends and Disparities in Utilization, Discharge Disposition, and Hospital Charges Following Inpatient Laparoscopic Cholecystectomy in the United States

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VA ACS
Poster Presentation

BACKGROUND

Laparoscopic cholecystectomy (LC) is the standard of care for symptomatic gallbladder disease in the U.S.

Despite clinical efficiency, hospital charges have increased substantially. Prior studies show disparities by race/ethnicity, payer, and hospital ownership in LOS, discharge, and post-acute care access.

Hypothesis: Utilization patterns vary but remain stable over time, while charges increase disproportionately—implicating system-level pricing drivers.

METHODS

Data: HCUPnet (HCUP/AHRQ) — nationally representative inpatient estimates
Period: 2013–2022 | **Population:** Adult inpatient LC
Primary Outcomes: Avg LOS, discharge disposition (routine, AMA, post-acute, home health, death), avg hospital charges & costs/stay
Strata: Sex · Race/Ethnicity · Payer · Hospital Ownership
Analysis: Linear regression across years (p<0.05); IRB-exempt aggregate data

KEY FINDINGS — OVERALL (2013–2022)

+82.6%	+51.7%	~2.5 d
Avg Charges/Stay $37K → $68K	Avg Costs/Stay $9.8K → $14.8K	LOS — Stable p for trend=NS

CONCLUSIONS

- LOS and discharge disposition vary meaningfully by race/ethnicity, payer, and hospital ownership but remain **stable over time**.
- Hospital charges and costs increased substantially across **all subgroups** despite stable utilization, implicating **system-level pricing** rather than clinical complexity.
- Private for-profit hospitals: charges doubled (+105.7%) while costs rose only +37.7% — largest charge-to-cost divergence of any ownership type.
- Black non-Hispanic patients experienced the largest relative cost increase (+33.2%), raising equity concerns.
- Policy efforts should prioritize price transparency, equity, and alignment of charges with actual resource use.

SEX-STRATIFIED TRENDS (2013–2022)

Metric	Female	Male	Note
Avg Charges 2013	$36,881	$38,779	Male higher
Avg Charges 2022	$68,379	$68,624	Converged
% Δ Charges	+85.4%	+77.0%	↑ Relative ♀
Avg Costs 2013	$9,526	$10,230	Male higher
Avg Costs	$14,609	$15,147	Converged

RACE/ETHNICITY TRENDS (2018–2022)

Group	Chg 2018	Chg 2022	% Change	Avg LOS
Asian/PI	$57,631	$73,646	+27.8%	2.4-2.6 d
Black NH	$51,042	$68,437	+34.1% !	2.7 d
Hispanic	$56,839	$73,984	+30.2%	2.3-2.4 d
White NH	$48,708	$64,458	+32.3%	2.4-2.5 d

↑ = largest relative increase; all groups p<0.01. Hispanic & Asian/PI: highest absolute charges despite shortest LOS.

AVG CHARGES BY RACE/ETHNICITY (2018 vs 2022)

LIMITATIONS

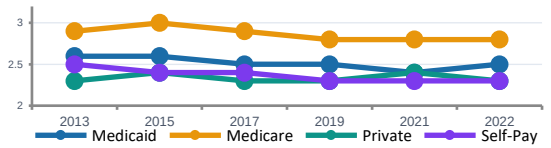
- HCUPnet = aggregate data; no patient-level comorbidity adjustment
- Race/ethnicity: subject to misclassification or missingness
- Charges ≠ actual payments or negotiated rates
- Outpatient LC not captured — findings limited to inpatient settings

PAYER-STRATIFIED TRENDS (2013–2022)

Payer	Avg 2013	Avg 2022	% Change	Avg LOS
Medicaid	$38,311	$68,771	+79.5%	2.4-2.6 d
Medicare	$40,684	$68,125	+67.5%	2.8-3.0 d
Private	$35,903	$68,004	+89.4%	2.3-2.4 d
Self-Pay	$37,037	$70,901	+91.4%	2.3-2.5 d

Medicare: longest LOS + high post-acute use (LOS 2.8–3.0 d, routine Dc ~89–91%). Self-pay & private insurance: biggest % charge rise despite shortest stays. All payers: charges rise independent of LOS.

AVG LENGTH OF STAY BY PAYER (2013–2022)



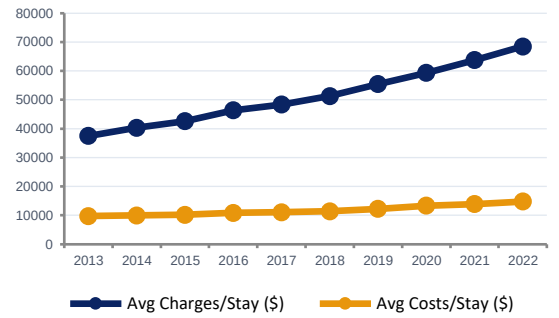
HOSPITAL OWNERSHIP TRENDS (2013–2022)

Ownership	Chg 2013	Chg 2022	% Δ Chg	% Δ Cost	LOS
Government	$31,682	$55,580	+75.4%	+55.1%	2.6–2.7
For-Profit	$54,328	$111,774	+105.7% ↑	+37.7%	2.4–2.6
Not-for-Profit	$34,224	$59,889	+75.0%	+54.4%	~2.5

For-profit hospitals: charges MORE THAN DOUBLED (+105.7%) vs. modest cost growth (+37.7%) — largest charge-to-cost divergence. All ownership types: stable LOS (≥96% routine discharge), confirming pricing—not complexity—drives escalation.

AVG CHARGES BY OWNERSHIP (2013 vs 2022)

OVERALL TEMPORAL TRENDS: CHARGES & COSTS/STAY

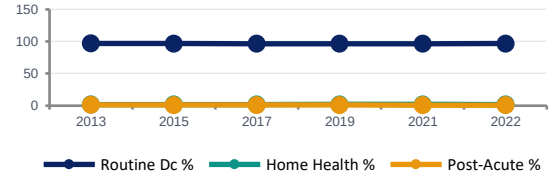


OVERALL KEY METRICS

+82.6%	+51.7%	~2.5 d	>96%
Charges 2013→2022	Costs 2013→2022	LOS All years	Routine Dc All years

DISCHARGE DISPOSITION TRENDS (2013–2022)

All discharge categories stable — charge escalation occurred independent



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