Impact of Surgical Setting on 30-day Outcomes after Cholecystectomy

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Background: Cholecystectomy is a common procedure performed by surgeons with various subspecialty training. Surgical treatment for benign biliary disease occurs in both ambulatory and inpatient settings. The focus of this study is to compare the utilization of ambulatory cholecystectomy and inpatient cholecystectomy to improve quality outcomes.

Methods: Patients ≥18 years who underwent cholecystectomy between July 2018 and April 2022 were included. The CPT codes 47562 (laparoscopic cholecystectomy-LC), 47563 (laparoscopic cholecystectomy with intraoperative cholangiogram-LCC), and 47600 (open cholecystectomy-OC) were collected. Demographic, intraoperative, and 30-day outcomes were compared for patients who underwent ambulatory cholecystectomy to those admitted. The primary outcome was operative time. Secondary outcomes included postoperative length of stay, 30-day emergency department visits, and 30-day readmission rates.

Results: 4,010 cholecystectomies were performed by 56 surgeons. 2,101 were ambulatory procedures and 1,909 were performed after hospital admission. General and subspeciality surgeons performed 87% of ambulatory cholecystectomies while acute care surgeons performed 85% of admitted cholecystectomies. The patients who underwent open cholecystectomy had the smallest volume, longest operative time, postoperative length of stay, and most frequent emergency department visits **(Table 1).** The median operative time was longest for open cholecystectomies performed over the weekend (**Figure 1**). The inclusion of a cholangiogram was associated with the lowest rate of postoperative emergency department visits.

Conclusion: The volume of cholecystectomy is shared between ambulatory and inpatient settings. Operative time and outcomes are impacted by type of procedure and occurrence on the weekend. Future analyses should incorporate this data to optimize pathways for patients that improves care to increase quality outcomes.

Figure 1. The weekend effect on operative times for cholecystectomy

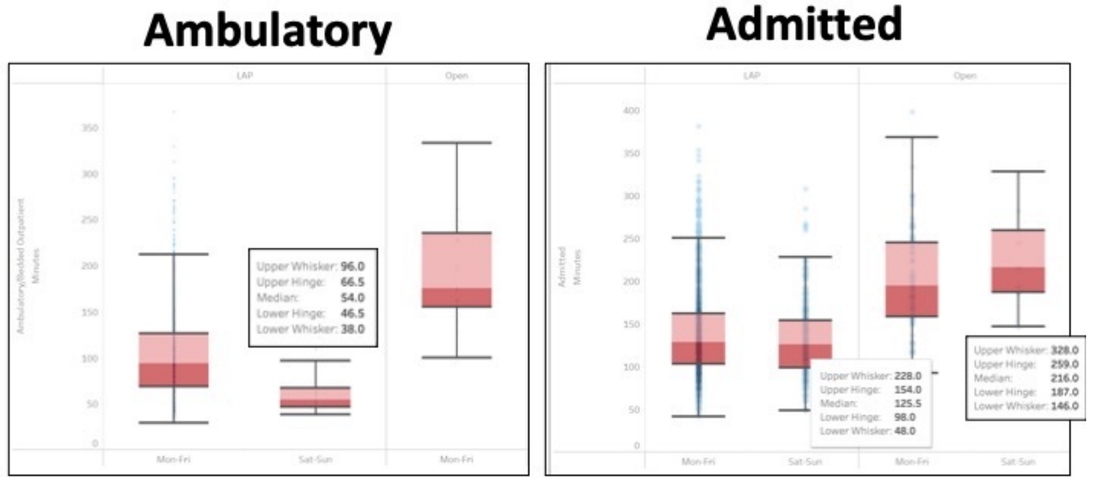


Table 1. Comparison of effectiveness for cholecystectomy performed in the ambulatory and inpatient settings

Cholecystectomy	Ambulatory (N=2,101)	Admitted (N= 1,909)	Total (N=4,010)
Volume			
LC	1,759	1,637	3,396
LCC	321	184	505
OC	21	88	109
Operative Time (min) *			
LC	60.7	90.3	74.9
LCC	88	114.2	97
OC	142.7	142	142
Length of Stay (days)*			
LC	0.5	1.7	1.1
LCC	0.3	1.7	0.8
OC	3.7	11.2	9.7
Emergency Department visit *			
LC	7.6%	11.5%	9.5%
LCC	5.9%	9.2%	7.1%
OC	19%	21.8%	21.3%

*Means are reported.

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