# HOSPITAL STAY AND BILIARY EVENTS AFTER IMPLEMENTATION OF DIFFERENTIATED CHOLECYSTECTOMY MANAGEMENT

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The burden of difficult cholecystectomy extends beyond the operating room. Additional treatment, delayed discharge and subsequent biliary symptoms can affect both patients and the surgical service. Evaluating these consequences requires a distinction between the duration of an initial admission and events after discharge. Shorter inpatient treatment is useful only when accompanied by acceptable recovery.

The dissertation compared conventional surgical care with a pathway that linked perioperative risk assessment to differentiated tactics [1]. Its aggregate results provide an opportunity to examine inpatient duration and the observed events during the first three months. The analysis addresses whether less inpatient time was accompanied by a favourable pattern of recorded recovery after discharge.

**Objective and design**

The objective was to compare hospital stay and short-term biliary events between consecutive treatment periods. The source cohort included 184 patients with acute calculous cholecystitis treated at Ibn Sina City Clinical Hospital No. 1 in Tashkent in association with Bukhara State Medical Institute. The conventional group comprised 91 patients from 2020–2022; the differentiated group comprised 93 patients from 2023–2025.

Allocation followed calendar periods and was not randomized. The pathway combined risk assessment, preventive exposure measures and a defined response to unsafe anatomy. It therefore represents a complex change in clinical management. Individual components cannot be assigned separate effects from this comparison.


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The selected outcomes were postoperative length of stay, total hospital stay, any recorded biliary event during months 1–3 and biliary pain during that period. Means and values following the ± sign were retained as supplied. Binary outcomes were compared with a two-sided Fisher exact test using the published counts. Differences in average days were calculated descriptively; no new economic model or patient-level adjustment was performed.

**Inpatient duration**

Postoperative stay averaged 6.8 days in the conventional group and 4.9 in the differentiated group. The difference was 1.9 days, approximately 28% of the conventional group mean. This percentage describes a difference between observed means; it is not a reduction in an individual patient's probability of prolonged stay.

Total hospital stay averaged 8.9 and 6.5 days, respectively, giving a difference of 2.4 days. The fact that both measures changed in the same direction suggests that the observed improvement was not confined to one administrative interval. However, differences in resuscitation, preoperative assessment, discharge practice or service organization between years may also contribute.

Postoperative days accounted for the larger portion of total stay in both groups. Their reduction is compatible with improved recovery, although the data do not establish whether complications mediated the difference.

Operating time averaged 84.6±24.8 and 77.9±21.4 minutes, respectively. The original methods describe M±m, but the meaning of the displayed dispersion values and the reported tests cannot be reconciled confidently from summary tables. Continuous outcomes are therefore presented descriptively. No new significance claim is made for duration measures.

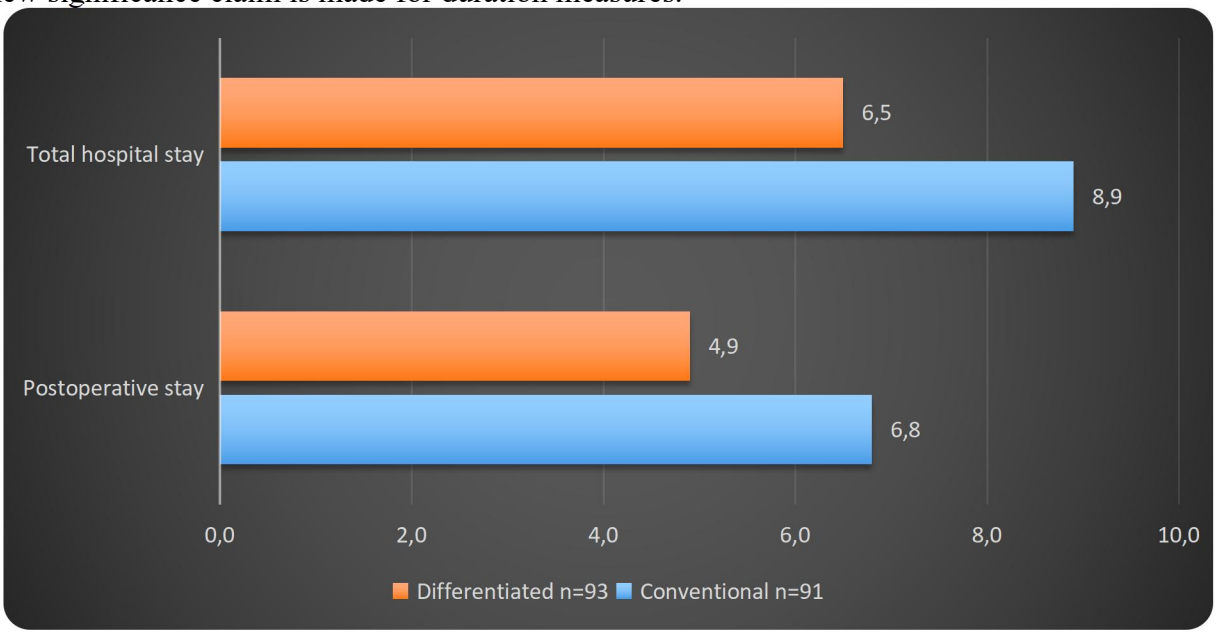



**Figure 1. Mean inpatient days in the two chronological cohorts.**

**Events after discharge**

Any biliary event during months 1–3 was recorded in 20 of 91 conventionally treated patients and eight of 93 patients in the differentiated group. The corresponding proportions were 22.0% and 8.6%, an absolute difference of 13.4 percentage points. A two-sided Fisher exact comparison gives p=0.014.


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Biliary pain occurred in 14 of 91 and five of 93 patients, corresponding to 15.4% and 5.4%. The exact p value is 0.030. Pain is meaningful for recovery and subsequent consultation, but it is not equivalent to an objectively demonstrated ductal complication. Its interpretation should remain separate from retained stones, infection or stricture.

The proportions relate to patients with recorded outcomes, whereas the source also contains mean numbers of contacts per patient. These are different measures. A patient can make several contacts, and several symptoms can occur in one patient. Adding the individual event categories or converting mean contacts directly into a patient percentage would be inappropriate.

**Table 1. Biliary recovery during months 1–3**

| MEASURE | CONVENTIONAL N=91 | DIFFERENTIATED N=93 | FISHER P |
|---|---|---|---|
| ANY BILIARY EVENT | 20 (22.0%) | 8 (8.6%) | 0.014 |
| BILIARY PAIN | 14 (15.4%) | 5 (5.4%) | 0.030 |

**Clinical and service interpretation**

The combination of shorter observed stay and fewer short-term events is more informative than either measure alone. It suggests that the later period did not achieve a shorter admission merely by ignoring the recovery after discharge. However, the study cannot establish identical ascertainment of symptoms across periods or exclude changes in how patients accessed follow up.

The findings are consistent with the purpose of a differentiated pathway: recognizing an unsafe situation early and avoiding repeated attempts at hazardous standard dissection. A protective alternative may reduce subsequent treatment burden even when it changes the operation's planned volume. Yet the source comparison evaluates the complete pathway and its historical context, not the mechanism of one manoeuvre.

Length of stay is a useful resource measure but does not constitute a cost estimate. Bed occupancy, operating time, medications and repeat procedures have different costs. No monetary saving is calculated here because the necessary price and resource data were not supplied. The service conclusion is limited to observed days and event frequencies.

The data also support using a precise observation window. The label long-term outcome could imply years of surveillance, whereas the reported follow up covers months 1–3. Later strictures or recurrent symptoms cannot be excluded on that basis [3]. Describing the endpoint as short-term biliary events keeps the claim aligned with the actual data.

**Conclusion**

The differentiated management period was associated with 1.9 fewer postoperative days and 2.4 fewer total hospital days on average. Recorded biliary events during months 1–3 were also less frequent. The combined findings support further evaluation of the pathway's clinical and service value, while the historical design and short observation period limit causal and long-term conclusions.

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