

# Implementation and Compliance to an Enhanced Recovery Protocol for Liver Resections

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## Background

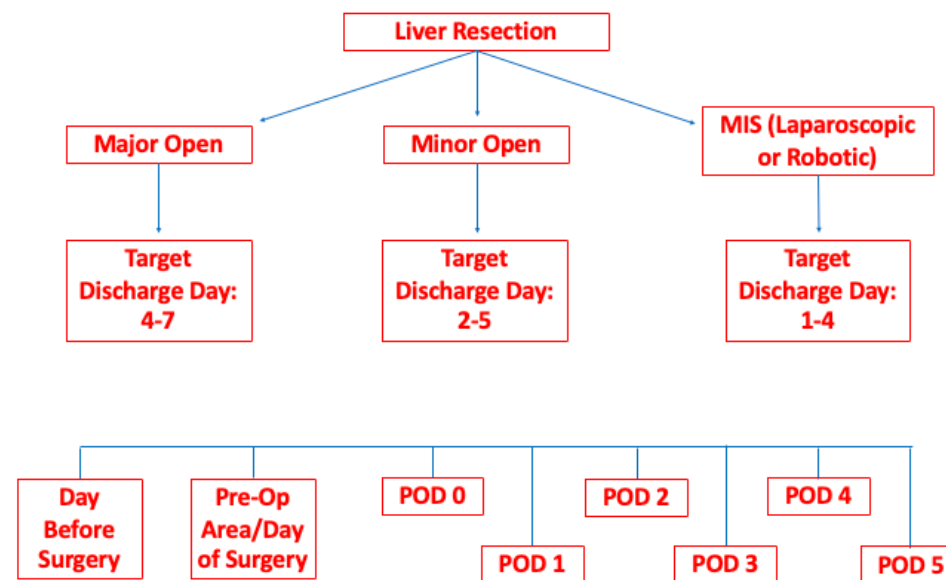
Standardizing perioperative surgical care with an enhanced recovery protocol (ERP) eliminates the variability in patient care that currently exists in large health systems, improving both quality and patient outcomes. Here, we present an ERP for liver surgery based upon the latest guidelines for the largest health system in New York, the first of its kind to exist across an expansive health system.

## Methods

We conducted a targeted search of PubMed/MEDLINE, Web of Science, and Google Scholar for literature on the perioperative care of patients undergoing liver surgery. Recommendations from the 2022 Enhanced Recovery After Surgery (ERAS) Society guidelines for liver surgery were incorporated into our pathway when in concordance with the literature and when compatible with our health system's resources/policies. The protocol was discussed in a meeting with all liver surgeons, both from the surgical oncology and transplant groups. Each item was discussed separately. If there was no agreement on any item amongst the surgeons, it was removed from the pathway.

## Results

**Figure 1. Organizational Schematic of the Liver ERP.**



Elements of the ERP were organized into the following categories: diet, fluids, pain, supplemental medications, activity, labs, phosphate repletion, and device and procedures. Key modifications included the addition of a carbohydrate loading dose the evening before and 2-4 hours before surgery, the removal of preoperative nonsteroidal anti-inflammatory drugs, an earlier transition to oral pain medications for minor open and minimally invasive procedures, administration of a single preoperative dose of steroids, and maintenance of postoperative glycemic control.

## Conclusions

Consensus was reached amongst 19 liver surgeons spanning across six tertiary sites in our health system, establishing a protocol for system-wide implementation. Given the size of our health system, there is currently variability in patient care during the perioperative period for liver surgery across sites. Through this quality improvement initiative, we designed a novel liver ERP specifically to be used across a large health system that aims to optimize patient outcomes, redefining the scope of standardized care.

## Future Directions

- Education for surgical staff and providers regarding key pathway elements
- Measurement of pathway compliance using scorecard sheets and EMR order sets