

# Comparative Analysis of Models of Care and its Impact on Emergency Cholecystectomy Outcomes

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## Introduction

- Laparoscopic cholecystectomy (LC) is a common emergency procedure performed for the treatment of acute cholecystitis
- In Australia, there has been a shift from the traditional 'on-call' model to the acute surgical care model for the management of emergency general surgeries

### TRADITIONAL ON-CALL

- Emergency surgical patients admitted under consultant of the day
- Consultant concurrently engaged with other commitments (e.g., clinic duties, elective operations)
- Shared emergency operating theatre

### ACUTE SURGICAL UNIT

- Consultant-led surgical team
- No competing elective commitments
- Dedicated operating theatre or dedicated theatre time

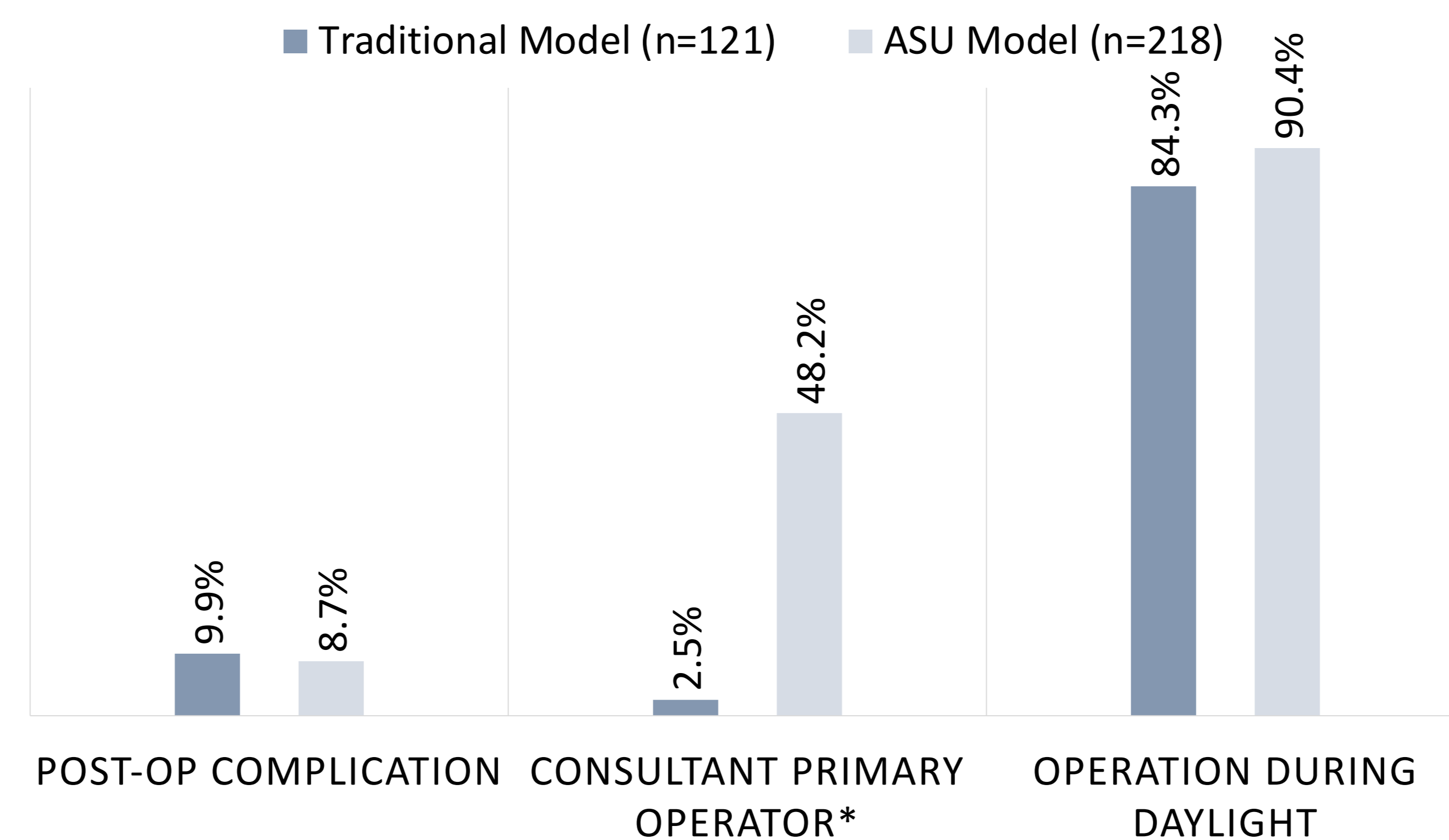
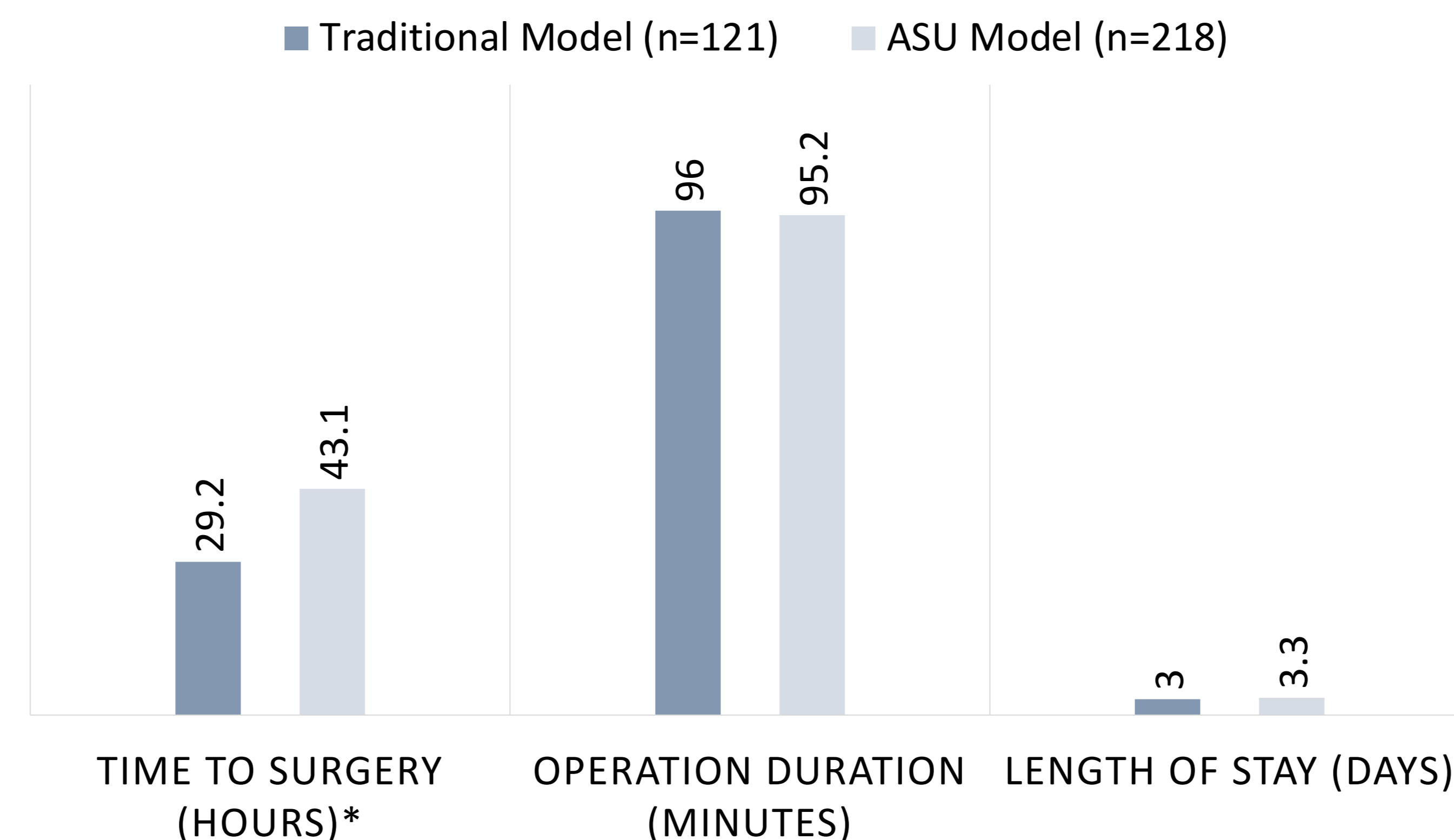
- Initial cohort studies have shown improved patient outcomes in the acute surgical unit (ASU)<sup>2</sup>
  - Reduced time to surgery
  - Decreased length of hospital stay
  - Less operations performed after-hours
- The aim of this study is to compare emergency LC outcomes between two different institutions who utilize these surgical care models

## Methods

- Retrospective study of patients who underwent emergency LC for acute cholecystitis at QE II Jubilee Hospital and Logan Hospital between April 2018 and March 2019
- Primary outcomes: length of hospital stay, time from admission to definitive surgery and postoperative complications
- Secondary outcomes: proportion of cases performed during daylight hours, length of operating time, rate of conversion to open cholecystectomy and consultant surgeon involvement
- Statistical significance was achieved at  $p < 0.05$
- Metro South HREC approval (LNR/2019/QMS/56922; LNR/2020/QMS/62457)

## Results

- A total of 339 patients presented with acute cholecystitis and were managed operatively with emergency LC
- Shorter mean time to surgery in the traditional group compared to the ASU group (29.2 versus 43.1 hours;  $p < 0.001$ )
- No differences in mean length of stay, operation duration and post-operative complication rates between groups, with the majority of surgeries performed during daylight hours
- The ASU group had a greater proportion of consultant-led cases (48.2% versus 2.5%,  $p < 0.001$ ) compared to the traditional group



\* $p < 0.05$

## Discussion

- Only single institution pre- and post-implementation studies of the ASU exist, with few evaluating the application of the ASU model to surgical outcomes in patients with acute cholecystitis
- Despite previous studies which found the ASU resulted in a decreased time to surgery, this study found the opposite
  - These differences may be explained by differences in how each institution runs their ASU
- The higher percentage of operations completed by surgical consultants in the ASU group was expected as the ASU is a consultant-driven service
- The traditional model in this study challenges previous studies and showed a comparable number of surgeries performed during daylight hours
  - Effectively managing theatre lists to facilitate the completion of emergency cases may be something more feasible in a smaller hospital

## Conclusion

- Patients with acute cholecystitis requiring emergency laparoscopic cholecystectomy achieve equivalent surgical outcomes irrespective of the model of acute surgical care
- This is the first comparative study of two emergency models of care for the management of acute cholecystitis

## References

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