

Study Summary

An assessment of the clinical and economic impact of establishing ileocolic anastomoses in right-colon resection surgeries using mechanical staplers compared to hand-sewn technique

A systematic literature review, meta-analysis and value model analysis.

Roy S, Ghosh S, Yoo A. Surg Res Pract. 2015;749186.

Conclusion

Mechanical stapling can be considered as a clinically and economically favourable option (in terms of AL rates, reoperation rates, OR time and hospital costs) compared to hand suturing for establishing anastomoses in patients undergoing right colon surgery.

Study Aim

To compare clinical outcomes and costs associated with mechanical stapling versus hand-sewn suturing in creation of ileocolic anastomoses after right-colon surgery.

Methods

- A meta-analysis¹ comparing clinical outcomes for mechanical stapling vs hand-sewn suturing for right-colon resection and colonic anastomosis was updated
- A value analysis model was developed to estimate the net cost savings due to the reduced anastomotic leak (AL) rates, reoperations/readmission rates and operating room (OR) time which are associated with mechanical stapling versus hand-sewn suturing for right-colon resection
- A scenario analysis was conducted to provide a conservative estimate of the cost impact of mechanical stapling vs. hand-sewn suturing in order to examine the level of data robustness
- The model utilised clinical data from the meta-analysis and cost data from publicly available literature

Primary Endpoint:

- Rate of AL



A hypothetical cohort of 100 patients who underwent right colon surgery were modelled to estimate cost savings from a US hospital perspective

Secondary Endpoints:

- Rate of reoperation, time for anastomosis and net cost savings determined by the model



A scenario analysis was conducted to provide a conservative estimate of the cost impact of mechanical stapling vs. hand-sewn suturing in order to examine the level of data robustness

Results

Clinical Outcomes

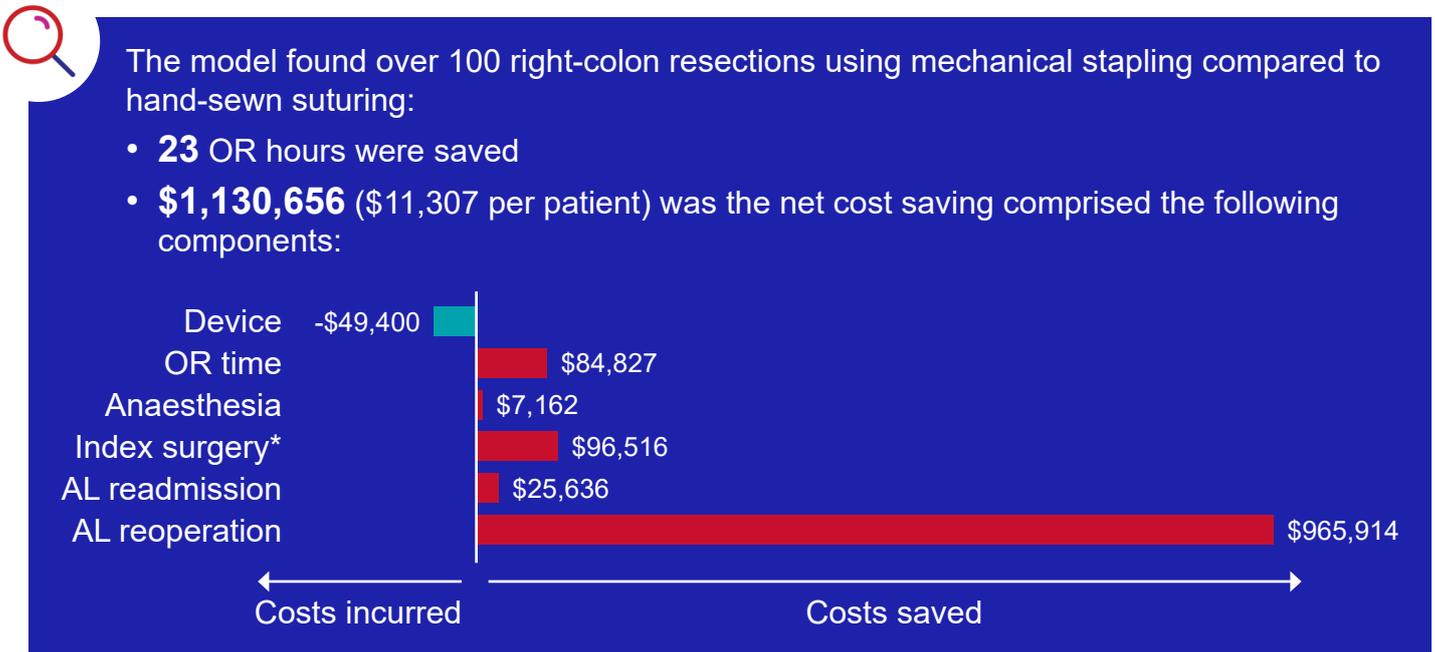
The meta-analyses of 1,172 patients across 8 RCTs reported:



One individual publication which analysed 8 studies, and was included in the meta-analysis, also reported that mechanical stapling compared to hand-sewn suturing resulted in:



Value Analysis Model



*Calculated by the reduction in number of ALs multiplied by the incremental cost of an initial hospitalisation with AL compared to without AL.

The scenario analysis with conservative assumptions confirmed that the results of the model were robust, demonstrating an **overall net saving of \$153,907** over 100 patients in US hospital settings

References: 1. Choy PYC, Bissett IP, Docherty JG, et al. Stapled versus handsewn methods for ileocolic anastomoses. Cochrane Database of Systematic Reviews, no. 9, Article ID CD004320, 2011.