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FISCAL IMPACT AND SURGICAL PERFORMANCE COSTS FOR THE ROUTINE USE OF ROBOTIC PLATFORMS FOR ABDOMINAL SURGICAL PROCEDURES: A FOLLOW-UP STUDY

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A follow-up analysis to our previous study [Surg Endosc. 2022 Feb;36(2):1433-1443] was initiated to continue assessing robotic platforms' fiscal impact over the past 24 months on our service lines.

Study: using the same clinical analytics, an identical analysis was conducted on patients who underwent a core intra-abdominal procedure in our health system i.e., cholecystectomy, inguinal hernia repair, colectomy, appendectomy, and hysterectomy between a 24-month period from 01/01/2021 to 12/31/2022. Data from the same medical centers was sampled to keep our data consistent. Cost differential, direct facility expenses [Average Cost per Case], contribution margin, and cost per case were assessed and reported for all three surgical techniques used, i.e., laparoscopic [L], robotic [R], and open [O].

Results: All datasets show a similar financial picture of increased operating costs when using our robotic platforms, while significant cost performance increases were noted for some procedures. Direct facility expenses per procedure [formerly Average Cost per Case] remained our best indicator to assess the actual cost of these procedures. They are as follows: 1. OP Cholecystectomy [L $4,764, R $15,578], 2. Appendectomy [L $4,571, R $13,573], 3. Inguinal hernias [L $10,402, O $7,637, R $ 21,294], 4.Colectomies [Lap $12,202, Rob $16,642, Op $15,330] and 5. OP Hysterectomies [Lap $5,765, Rob $8,805, Op $4,724].

Conclusion: Our previous in-depth study demonstrated no significant outcome difference between laparoscopic and robotically performed procedures. In this follow-up analysis, robotic procedures are again shown to have a much higher direct expenses facility cost. Additional supply robotic expenses and operating time remain the main cost drivers of robotic procedures.

Robotic surgical platforms continue to have a negative fiscal impact on our surgical service lines. Surgical procedures performed using robotic platforms are performed at a much higher performance cost than their laparoscopic techniques. The analysis reiterates that the routine use of robotic appendectomy, cholecystectomy, and inguinal hernia repair is not supported.