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readmission, and mortality rates. In high MELD patients ( $n=1,016$ ), those transferred were more likely older, White, obese, and septic. Transferred patients had increased mortality (7.6% vs 4.2%,  $p=0.044$ ), LOS, reoperation, and complications. After controlling for differences between transferred and nontransferred patients, transfer status was not independently associated with increased mortality (OR=1.593,  $p=0.177$ ), postoperative complications or LOS, but was associated with increased risk for reoperation. Sepsis and laparoscopic surgery were independently associated with higher and lower mortality, respectively.

**CONCLUSION:** Transfer status is not independently associated with mortality, postoperative complications, or prolonged LOS, suggesting patients with advanced liver disease undergoing nonelective cholecystectomy may not benefit from interfacility transfer.

### Women Surgeon-Scientists: What Is the Current Status of NIH Funding?

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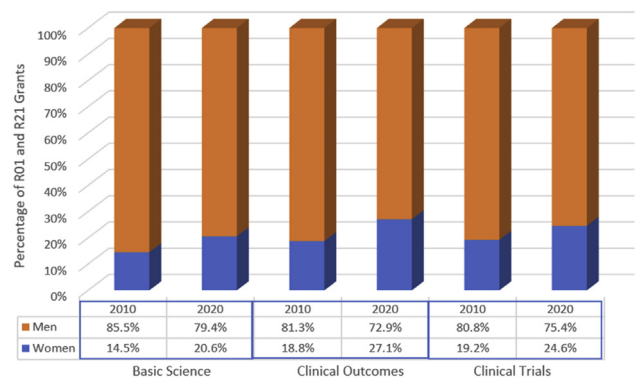


**INTRODUCTION:** Funding disparities based on demographic variables have recently garnered significant attention. However, current literature on the status of women surgeon-scientists remains conflicting.

**METHODS:** In order to better assess the current NIH-funding status for women surgeons, we queried a pre-existing comprehensive database of 2010 and 2020 NIH-funded surgeons. The Association of American Medical Colleges (AAMC) Active Physician data were used to calculate total surgeon populations. Bivariate chi-square analyses were performed using population totals and substantiated by z-tests of population proportions using JMP (v13.0.0). All reported data are a comparative analysis with men surgeon-scientists.

**RESULTS:** Although women comprised 27.4% of funded surgeons in the US, they hold only 21.7% of total NIH funding awarded to all surgeon-scientists in 2020. The number and proportion of funded women surgeon-scientists, however, significantly increased ( $n=262$ , 25.4% in 2020 vs  $n=136$ , 19.0% in 2010,  $p<0.05$ ), as did their funding, \$189.7M from \$75.9M (21.7% in 2020 vs 12.3% in 2010,  $p<0.05$ .) Basic science, clinical outcomes, and clinical trial R01 and R21 grants also increased among women surgeon-scientists (Fig. 1). Furthermore, the proportion of women surgeons overall with NIH funding significantly increased (0.66% in 2020 vs 0.49% in 2010,  $p<0.05$ ). Women and men had similar R01 application attempts before success (mean 2.7 vs 2.3,  $p=0.60$ ) and similar K-to-R award conversion rates (23.5% vs 26.7%,  $p=0.55$ ).

**CONCLUSION:** Women surgeon-scientists are gaining in number, proportion, and funded grant costs. While these results are promising, increased academic opportunities for women are still needed to further close the existing gender gap.



**Figure 1.** Percentage of total R01 and R21 grants awarded to men and women by types of research – basic science, clinical outcomes, and clinical trials. The percentage of R01 and R21 grants in each research type increased significantly for women compared to men from 2010 to 2020 ( $p<0.05$ ).

### Access to Surgical Care for Benign Gallbladder Disease During Covid-19 at a Safety-net Hospital

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**INTRODUCTION:** The COVID-19 pandemic has disproportionately affected vulnerable populations, including reduced access to timely surgical care. We aimed to evaluate the impact of COVID-19-related hospital capacity changes on the treatment of benign gallbladder disease at Zuckerberg San Francisco General Hospital (ZSFG), a safety-net hospital serving the county of San Francisco.

**METHODS:** We performed a retrospective study comparing the surgical treatment of benign gallbladder diseases 6 months before and after San Francisco's shelter-in-place (SIP) order on March 17, 2020. For patients referred through the outpatient clinic, we compared patient demographics, clinic wait times, and surgical wait times between the time periods. For patients undergoing cholecystectomy, we compared demographics, surgical wait times, number needing emergent surgery, and length of hospital stay between the time periods. Univariate statistical methods were used.

**RESULTS:** Referrals dropped from 60 cases pre-SIP to 36 cases post-SIP. The wait time for clinic evaluation was 3.1 months pre-SIP compared to 1.5 months post-SIP. The number of emergent cholecystectomies increased by 4% from pre- to post-SIP ( $p=0.60$ ). In-hospital wait time for emergent operations decreased by 0.5 days post-SIP ( $p=0.76$ ), while outpatient wait times for scheduled surgery increased by 9 days ( $p=0.76$ ).

**CONCLUSION:** With the reduction of nonemergent surgery and clinic visits due to COVID-19, a higher proportion of patients required emergent cholecystectomy, occurring with shorter in-hospital wait times despite hospital capacity reductions. Our pathways to

cholecystectomy require further examination of the reduced clinic referrals and elective surgery wait times, considering the well-known delays for procedures in our vulnerable patient population.

**Table**

<b>Characteristics of Cholecystectomy Operations</b>			
	<b>Pre-SIP (n=88)</b>	<b>Post-SIP (n=84)</b>	<b>P-value</b>
Female gender (n [%])	64 (72.7%)	60 (71.4%)	0.85
Age (y, mean +/- SD)	47.1 +/- 15.2	46.1 +/- 17.1	0.35
Emergent surgery (n [%])	61 (69.3%)	61 (72.6%)	0.60
Wait time for elective surgery (months, mean +/- SD)	4.8 +/- 2.5	5.1 +/- 4.2	0.76
Wait time for emergent surgery (days, mean +/- SD)	3.2 +/- 3.4	2.7 +/- 2.0	0.30
Length of hospital stay (days, mean +/- SD)	4.2 +/- 3.0	4.4 +/- 3.6	0.76

### **Analysis of Results of Hand-Sewn vs Mechanical Esophageal Anastomosis after Total Gastrectomy: A Systematic Review and Meta-analysis.**

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**INTRODUCTION:** The complications related to esophagojejunal anastomosis are among the leading issues in the postoperative period of total gastrectomy. This review aims to evaluate the surgical outcomes of hand-sewn esophageal anastomosis compared to mechanical anastomosis for the reconstruction of total gastrectomy.

**METHODS:** A systematic review and meta-analysis of comparative studies evaluating hand-sewn and stapled anastomosis was performed.

**RESULTS:** A total of 12 studies were selected, comprising 1,761 individuals. The operation time was higher in the hand-sewn anastomosis group (mean difference [MD] = 22.13 minutes; 95%CI: 3.97, 40.29). However, the risk for anastomotic fistula was not different between the groups (difference risk [DR] = 0.00; 95% CI: -0.03, 0.03). Also, the rate of intracavitary abscess (DR = -0.02; 95%CI: -0.07, 0.02); the reoperation rate (DR = -0.00; 95%CI: -0.01, 0.01); postoperative complications (DR = 0.12; 95%CI: -0.01, 0.25); postoperative mortality (DR = 0.02; 95% CI: -0.02, 0.06); anastomotic stenosis (DR = -0.01; 95%CI: -0.03, 0.00); and length of hospital stay (mean difference [MD] = 3.52 days; 95%CI: -0.49, 7.53) were no different between groups.

**CONCLUSION:** The results indicate that the hand-sewn and stapled esophageal anastomosis have similar surgical outcomes. Stapled anastomosis has a shorter operation time.

### **Bailout Procedures for the Difficult Gallbladder: Comparing Outcomes of Laparoscopic Sub-total Fenestrated Cholecystectomy, with Open Cholecystectomy**

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**INTRODUCTION:** Although laparoscopic cholecystectomy is one of the most common operations performed, there is no consensus on the best approach in severe cholecystitis, when inflammation obscures hepatocystic anatomy. Traditionally, this situation required conversion to open cholecystectomy (COC); however, alternative approaches have been described in the past decade. We compared outcomes of several different bailout procedures for severe cholecystitis, focusing on COC and subtotal fenestrated laparoscopic cholecystectomy (FLC).

**METHODS:** Retrospective comparison of bailout procedures FLC, COC, open subtotal fenestrated (OFLC), and laparoscopic reconstructing cholecystectomy (LRC), performed between 2015 and 2020. ANOVA, Kruskal-Wallis, or chi-square tests with multiple pairwise comparisons were used; family-wise error rate was maintained at 0.05. Logistic regression models were conducted to examine associations.

**RESULTS:** One-hundred fifty subjects were included: 50 FLC, 85 COC, 10 OFLC, and 5 LRCs. Patient demographics and clinical presentations were similar between groups, except shorter duration of symptoms seen in COC ( $p < 0.05$ ) (Table 1). FLC had shorter operative time, ICU admissions, and length of stay than COC ( $p < 0.05$ ). COC had fewer biliary leaks (OR = 0.38 [0.14, 0.97]) and were less likely to have drain placement (OR = 0.31 [0.12, 0.82]). There were 7 (8.2%) cases of ileus, 4 (4.7%) cases of bleeding, and 2 (2.4%) cases of bile duct injury seen only in COC.

**CONCLUSION:** FLC was associated with fewer complications, and no bile duct injury, even in severely inflamed cholecystitis. In contrast, COC was associated with a higher rate of biliary injury, bleeding, ileus, ICU admission, and longer hospital stay.

### **Bearing of BMI on Surgical Outcomes after Ostomy Reversal**

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