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ORIGINAL ARTICLE – BREAST ONCOLOGY

# Implementation of a Post-mastectomy Home Recovery Program in a Large, Integrated Health Care Delivery System

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## ABSTRACT

**Background.** The number of outpatient mastectomies, with and without reconstruction, has increased nationwide. In well-selected patient populations, same-day surgery for mastectomy is a safe option. A pilot project was initiated within the Kaiser Permanente Northern California health-care system to facilitate surgical home recovery (SHR) for mastectomy patients, including patients undergoing implant-based reconstruction and bilateral mastectomies.

**Methods.** Surgical home recovery for mastectomy patients was implemented in October 2017. Specific measures in this initiative included management of patient expectations at initial consultation, education about post-operative home care, multimodality pain management, and timely post-discharge follow-up. All patients undergoing mastectomy were included, except those undergoing autologous tissue reconstructions. After a 6-month implementation period, rate of same day discharge over 6 months was compared before and after the SHR initiative. We also compared emergency department (ED) visits, reoperations, and readmissions within 7 days.

**Results.** Twenty-one medical centers participated in this initiative. Before implementing SHR, 164 of the 717 (23%) mastectomies were outpatient procedures, compared with 403 of the 663 (61%) after the implementation period. Although the rate of outpatient mastectomy increased significantly, there were no statistically significant differences in ED visits (5.2% vs. 5.1%, $p = 0.98$), reoperation (3.5% vs. 3.5%, $p = 0.99$), or readmission rates (1.4% vs. 2.7%, $p = 0.08$).

**Conclusions.** By implementing standard expectations and sharing best practices, there was a significant increase in the rate of home recovery for mastectomy without compromising quality of patient care. The success of this pilot program supports SHR for mastectomy.

Enhanced recovery after surgery (ERAS) strategies can facilitate outpatient recovery, improve clinical outcomes, and provide cost savings.[1–4] Surgical home recovery (SHR) permits patients to recuperate in a familiar environment leading to better physical and psychological recovery that emphasizes patient comfort, control, and independence.[5] Furthermore, same-day discharge reduces the risk of nosocomial infections and optimizes utilization of inpatient resources for higher acuity patients.[6]

Outpatient mastectomy rates have increased significantly over the past 15 years, with the rate of bilateral outpatient mastectomy increasing more than fivefold and the rate of unilateral outpatient mastectomy almost doubling between 2005 and 2013.[7] However, the widespread adoption of same-day discharge is not consistent, with many patients admitted to the hospital for 1–2 days after surgery. Discharge practices often depend on the payor or the state where a patient



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resides.[8,9] Despite studies showing that outpatient mastectomy is a feasible and safe option in well-selected populations, inpatient mastectomy rates remain high.[3,10–12]

Kaiser Permanente Northern California (KPNC) successfully applied ERAS principles to patients undergoing total joint replacements and demonstrated that with redesign of workflows, increased patient education, and improved perioperative management of pain and nausea, patients could safely recover at home.[13] KPNC then recognized an opportunity to apply these principles to patients with breast cancer. In keeping with the variability in mastectomy discharge practices noted above, we observed significant variations in practice across the 21 KPNC medical centers, with patients admitted overnight for observation at some facilities and discharged the same day at others, despite having the same type of operation. Because most breast conservation operations are outpatient procedures, this initiative focused on home recovery for mastectomy patients, including those undergoing bilateral mastectomies and implant-based reconstruction.

In 2017, KPNC initiated a regional SHR mastectomy program with the goal of decreasing practice variability and increasing same-day discharge rates. We hypothesized that we could evaluate the workflow at medical centers where patients were routinely discharged same day, standardize and spread these best practices, and increase the rates of SHR after mastectomy without compromising quality of care. The purpose of this study was to evaluate the safety and effectiveness of this program and provide a practical guide, incorporating ERAS principles, to facilitate development of future SHR mastectomy programs.

## METHODS

Surgical home recovery for patients undergoing mastectomy was implemented in October 2017 by physicians of The Permanente Medical Group (TPMG), supported by data and business consultants from our department of Quality and Operations Support (QOS). This study was conducted within the membership of KPNC, a prepaid integrated healthcare system with more than 4.3 million members. The patient population is racially and ethnically diverse and demographically similar to the Northern Californian population except at the extremes of income.[14]

This pilot program was disseminated via the regional breast clinical performance team (BCPT), composed of breast surgery leaders across the 21 KPNC medical centers. The BCPT developed a protocol that included the entire surgical team, from breast-care coordinators to postanesthesia care unit (PACU) recovery nurses (Fig. 1). The SHR Initiative included setting patient expectations at the initial consultation, educating patients about postoperative home care, using multimodality pain management to decrease postoperative nausea, vomiting, and pain, collaborating with plastic surgeons regarding reconstruction techniques, and timely postdischarge follow-up with patient by phone or secure message. Patient preparation, including drain education, varied between locations—sometimes at the initial consultation and other times during a subsequent visit with the breast care coordinator. Links were provided to a video tutorial regarding drain care. Education was reinforced by PACU nurses postoperatively.

The Kaiser Permanente ERAS pathway also was adopted for outpatient operations. Multimodal anesthesia was a component of this pathway. Postoperatively, acetaminophen and nonsteroidal anti-inflammatory drugs were generally prescribed at regular intervals with opioids occasionally recommended for breakthrough pain.

Surgeons received monthly reports on regional and medical center specific rates of home recovery following mastectomy and were encouraged to share and implement best practices. The individual adoption of each recommendation varied by surgical team. The SHR Initiative implementation period was from October 2017 to March 2018. Two cohorts for comparison were established 6 months before and after the implementation period.

A retrospective review of a prospectively maintained database was performed, and data were abstracted from the operative log of the electronic health record. All patients undergoing unilateral or bilateral mastectomy, including those undergoing immediate implant-based reconstruction, were included. Patients undergoing immediate autologous tissue reconstruction were excluded. Patient characteristics, including age, body mass index (BMI), procedure laterality, American Society of Anesthesiologists (ASA) Class, and indication for surgery, were obtained.

Malignancy classification included ductal carcinoma in situ and invasive breast cancer. Benign classification included benign diagnoses, high-risk prophylactic mastectomies, and contralateral symmetrizing procedure after prior mastectomy. Modified radical mastectomy was used to designate the number of patients who underwent an axillary lymph node dissection. Patients who were discharged directly from the postanesthesia recovery unit before midnight on the day of surgery were categorized as outpatient (OP) or length of stay 0 (LOS 0). Patients who stayed one midnight were classified as overnight admissions (LOS 1). Patients who stayed past one midnight were considered inpatient admissions (LOS $>$ 1). The primary endpoint was the rate of OP mastectomy in each 6-month period. Secondary endpoints were the rate of emergency department visits, reoperations, or readmissions within 7 days. Assumptions were made that ED visits, second operations within 7 days, and readmissions were related to the patient's index operation.

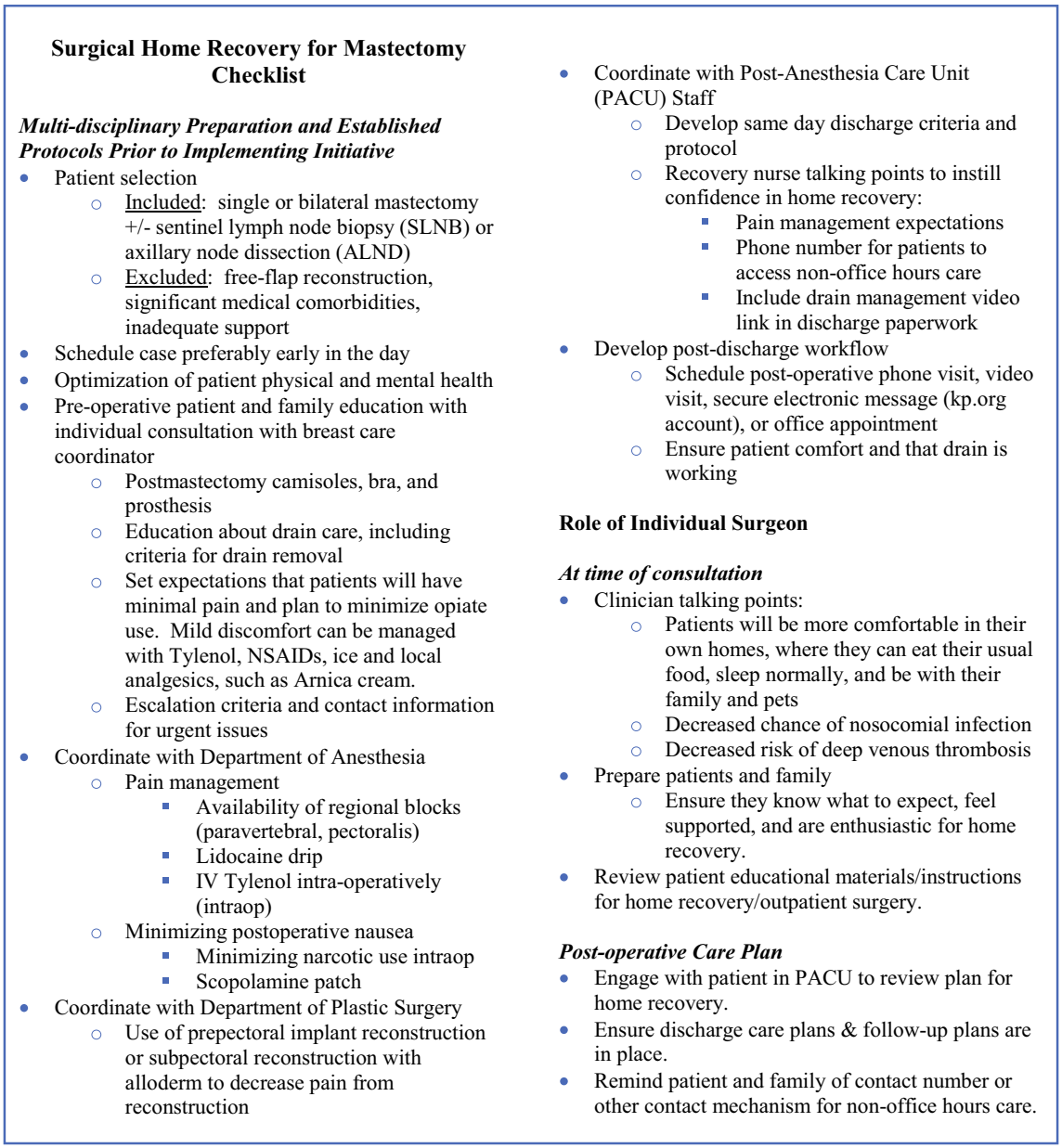


**FIG. 1** Surgical home recovery for mastectomy implementation plan

SAS software, version 9.4 (SAS Institute), was used to analyze the data. Chi square analysis and Fisher's exact tests for categorical variables, and *t* tests for continuous variables were used to compare the clinical characteristics and outcomes of the two mastectomy cohorts 6 months before and after the implementation period. A $p$ value $< 0.05$ was considered significant. The KPNC Institutional Review Board approved this study with a waiver of consent.

## RESULTS

Eighty-four surgeons performed 1380 mastectomies across 21 medical centers in KPNC. Of these, 344 (24.9%) were bilateral mastectomies and 435 (31.5%) patients underwent immediate, implant-based reconstruction. In the pre-SHR Initiative cohort (April to September 2017), 717 mastectomies were performed, and 663 mastectomies were performed in the post-SHR Initiative cohort (April to September 2018). There was no difference in age, body mass index, ASA Class, diagnosis of malignancy, rate of nipple-sparing approach, or rate of axillary lymph node

dissections (ALND) between the two cohorts overall. Approximately 93% of patients underwent mastectomy for malignancy. The rate of ALND was 21.4%.

A total of 567 patients had outpatient mastectomies. In the pre-SHR cohort, 164 of the 717 (22.9%) mastectomies were outpatient, compared with 403 of the 663 (60.8%) of the mastectomies post-SHR ($p < 0.001$). The SHR rate, which was 16% at the beginning of the study (April 2017), increased to 75% by September 2018 (Fig. 2). The average LOS for the pre-SHR cohort was 22.9 h versus 12.6 h in the post-SHR cohort ($p < 0.001$). The average length of stay in the PACU for patients undergoing same day discharge was 3 h.

We examined subsets of patients who had immediate reconstruction. Immediate reconstruction was performed for 147 of the patients undergoing outpatient mastectomy (Table 1). We observed a significant increase in patients undergoing bilateral mastectomy with reconstruction over time, 8.8% pre-SHR and 14.5% post-SHR ($p < 0.001$). Surprisingly, we noted a tenfold increase in the rate of outpatient operations in this group, from 3.2% (2/63) pre-SHR to 38.5% (37/96) post-SHR.

When the pre-SHR cohort was compared with the post-SHR cohort, there was no statistically significant difference in presentation to the ED (5.2% vs. 5.1%, $p = 0.98$), reoperation (3.5% vs. 3.5%, p = 0.99), or readmission (1.4% vs. 2.7%, $p = 0.08$; Table 2a). A chart review of the 13 outpatients who were readmitted after the SHR initiative revealed the following reasons for readmission: hematoma evacuation ($n = 9$); monitoring for bleeding but no intervention required ($n = 2$); syncope ($n = 1$); infection requiring antibiotics ($n = 1$).

When the inpatient cohort was compared to the outpatient cohort, there also was no statistically significant difference in ER presentations or readmissions. There were statistically significantly fewer reoperations in the outpatient mastectomy group compared with the inpatients (LOS $\geq$ 1 night), 1.8% versus 4.7%, $p = 0.004$ (Table 2b). The highest rate of reoperations (18%) was in the cohort admitted for greater than one night (Table 2a).

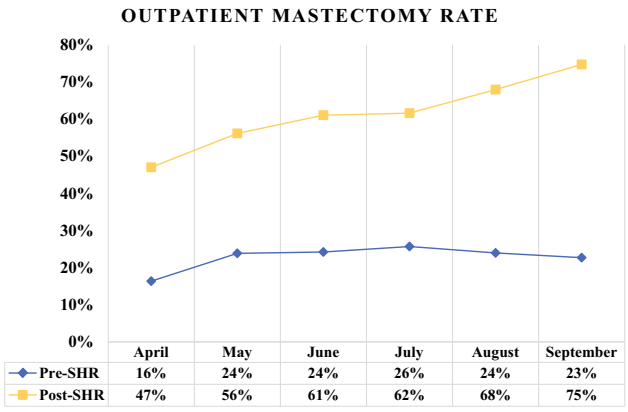


**FIG. 2** Monthly rate of outpatient mastectomy before and after surgical home recovery (SHR) initiative

## DISCUSSION

This is the first large-scale study to evaluate the efficacy of a system-wide initiative focused on the postoperative disposition of mastectomy patients. After implementing the SHR Initiative, mastectomies transitioned from a predominantly inpatient to a predominantly outpatient operation throughout KPNC over the course of 1 year. This change was achieved by creating standard expectations and sharing best practices among multiple medical centers for all mastectomy patients, including those undergoing bilateral mastectomies, implant-based reconstruction, and axillary node dissections. Notably, this change occurred without any adverse effect on patient outcomes.

In a population-based review of four Southern California counties utilizing the California Office of Statewide Health Planning and Development Database from 2006 to 2009, Kruper et al. identified a series of 4395 patients undergoing outpatient mastectomy and 402 undergoing immediate reconstruction (9.1% overall).[15] The outpatient mastectomy rate was stable over the 4 years ranging from 20.4 to 23.9%. This is consistent with the 23% rate that our organization observed before the SHR Initiative. After the SHR Initiative, the rate of OP mastectomy in KPNC significantly increased to 61%. The rate of outpatient mastectomies with immediate reconstruction also increased the post-SHR Initiative to 30% (122/403), which is much higher than reported in the aforementioned population-based study.

Other smaller series have shown that applying ERAS principles to breast surgery patients enabled same-day discharge without any effect on complication rates.[16,17] Dumestre et al.[10] showed that by applying ERAS principles to breast surgery patients, patients who underwent alloplastic breast reconstruction followed by an ERAS protocol ($n = 78$, average LOS 0.3 nights) versus a Traditional Recovery After Surgery (TRAS) protocol ($n = 78$, average LOS 1.45 nights) had no difference in 30-day ED visits (8% ERAS and 14% TRAS, $p = 0.20$), readmissions (8% ERAS and 3.8% TRAS, $p = 0.30$), or rate of hematoma (0.7% ERAS and 0% TRAS, $p = 0.35$). These authors therefore concluded that ERAS is a safe approach for breast surgery. Similarly, our study, which included 435 patients who underwent immediate reconstruction, found no statistically significant difference in 7-day outcomes between IP and OP mastectomies, with overall very low rates of complications. Low complications rates also were observed in a retrospective review by Simpson et al. The

**TABLE 1** Clinical and operative characteristics of the total patient population and outpatient mastectomy population before and after Surgical Home Recovery (SHR) initiative

| Patient and operation characteristics | Total mastectomies | | | | | Outpatient mastectomies (LOS 0) | | | | | Overnight admission (LOS 1) | | | | | Inpatient mastectomies (LOS > 1) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pre-SHR $n$ = 717 | | Post-SHR $n$ = 663 | | $p$ value | Pre-SHR $n$ = 164 | | Post-SHR $n$ = 403 | | $p$ value | Pre-SHR $n$ = 464 | | Post-SHR $n$ = 217 | | $p$ value | Pre-SHR $n$ = 89 | | Post-SHR $n$ = 43 | | $p$ value |
| | n | % | n | % | | n | % | n | % | | n | % | n | % | | n | % | n | % | |
| Age groups | | | | | 0.83 | | | | | 0.72 | | | | | 0.16 | | | | | 0.30 |
| < 40 | 68 | 9.5 | 64 | 9.7 | | 16 | 9.8 | 31 | 7.7 | | 39 | 8.4 | 25 | 11.5 | | 13 | 14.6 | 8 | 18.6 | |
| 40–64 | 388 | 54.1 | 368 | 55.5 | | 90 | 54.9 | 226 | 56.1 | | 244 | 52.6 | 122 | 56.2 | | 54 | 60.7 | 20 | 46.5 | |
| ≥ 65 | 261 | 36.4 | 231 | 34.8 | | 58 | 35.4 | 146 | 36.2 | | 181 | 39.0 | 70 | 32.3 | | 22 | 24.7 | 15 | 34.9 | |
| Body mass index (BMI, kg/m$^2$) | | | | | 0.98 | | | | | 0.55 | | | | | 0.97 | | | | | 0.57 |
| < 18.5 | 17 | 2.4 | 14 | 2.1 | | 4 | 2.4 | 10 | 2.5 | | 13 | 2.8 | 4 | 1.8 | | 43 | 48.3 | 19 | 44.2 | |
| 18.5–24.9 | 281 | 39.2 | 266 | 40.1 | | 56 | 34.1 | 163 | 40.4 | | 182 | 39.2 | 84 | 38.7 | | 26 | 29.2 | 14 | 32.6 | |
| 25–29.9 | 211 | 29.4 | 191 | 28.8 | | 51 | 31.1 | 111 | 27.5 | | 134 | 28.9 | 66 | 30.4 | | 20 | 22.5 | 9 | 20.9 | |
| ≥ 30 | 203 | 28.3 | 186 | 28.1 | | 53 | 32.3 | 116 | 28.8 | | 130 | 28.0 | 61 | 28.1 | | 0 | 0.0 | 1 | 2.3 | |
| Unknown | 5 | 0.7 | 6 | 0.9 | | 0 | 0.0 | 3 | 0.7 | | 5 | 1.1 | 2 | 0.9 | | 0 | 0.0 | 0 | 0.0 | |
| ASA class | | | | | 0.95 | | | | | 0.91 | | | | | 0.72 | | | | | 0.88 |
| 1 | 31 | 4.3 | 31 | 4.7 | | 5 | 3.0 | 18 | 4.5 | | 21 | 4.5 | 10 | 4.6 | | 5 | 5.6 | 3 | 7.0 | |
| 2 | 448 | 62.5 | 416 | 62.7 | | 104 | 63.4 | 247 | 61.3 | | 286 | 61.6 | 140 | 64.5 | | 58 | 65.2 | 29 | 67.4 | |
| 3 | 231 | 32.2 | 208 | 31.4 | | 53 | 32.3 | 133 | 33.0 | | 153 | 33.0 | 64 | 29.5 | | 25 | 28.1 | 11 | 25.6 | |
| 4 | 7 | 1.0 | 8 | 1.2 | | 2 | 1.2 | 5 | 1.2 | | 4 | 0.9 | 3 | 1.4 | | 1 | 1.1 | 0 | 0.0 | |
| 5 | 0 | 0.0 | 0 | 0.0 | | 0 | 0.0 | 0 | 0.0 | | 0 | 0.0 | 0 | 0.0 | | 0 | 0.0 | 0 | 0.0 | |
| Malignancy | | | | | 0.71 | | | | | 0.52 | | | | | 0.64 | | | | | 0.34 |
| Yes | 668 | 93.2 | 621 | 93.7 | | 155 | 94.5 | 375 | 93.1 | | 434 | 93.5 | 205 | 94.5 | | 79 | 88.8 | 41 | 95.3 | |
| No | 49 | 6.8 | 42 | 6.3 | | 9 | 5.5 | 28 | 6.9 | | 30 | 6.5 | 12 | 5.5 | | 10 | 11.2 | 2 | 4.7 | |
| Type of surgery | | | | | <0.001 | | | | | <0.001 | | | | | <0.001 | | | | | 0.38 |
| Bilateral with reconstruction | 63 | 8.8 | 96 | 14.5 | | 2 | 1.2 | 37 | 9.2 | | 59 | 12.7 | 57 | 26.3 | | 2 | 2.2 | 2 | 4.7 | |
| Bilateral no reconstruction | 104 | 14.5 | 81 | 12.2 | | 17 | 10.4 | 48 | 11.9 | | 44 | 9.5 | 18 | 8.3 | | 43 | 48.3 | 15 | 34.9 | |
| Unilateral with reconstruction | 129 | 18.0 | 147 | 22.2 | | 23 | 14.0 | 85 | 21.1 | | 105 | 22.6 | 62 | 28.6 | | 1 | 1.1 | 0 | 0.0 | |
| Unilateral no reconstruction | 421 | 58.7 | 339 | 51.1 | | 122 | 74.4 | 233 | 57.8 | | 256 | 55.2 | 80 | 36.9 | | 43 | 48.3 | 26 | 60.5 | |
| Nipple-sparing mastectomy | | | | | 0.25 | | | | | 0.009 | | | | | 0.03 | | | | | 0.49 |
| Yes | 106 | 14.8 | 113 | 17.0 | | 10 | 6.1 | 56 | 13.9 | | 68 | 14.7 | 46 | 21.2 | | 28 | 31.5 | 11 | 25.6 | |
| No | 611 | 85.2 | 550 | 83.0 | | 154 | 93.9 | 347 | 86.1 | | 396 | 85.3 | 171 | 78.8 | | 61 | 68.5 | 32 | 74.4 | |
| Axillary lymph node dissection/modified radical mastectomy | | | | | 0.53 | | | | | 0.84 | | | | | 0.50 | | | | | 0.14 |
| Yes | 158 | 22.0 | 137 | 20.7 | | 28 | 17.1 | 66 | 16.4 | | 115 | 24.8 | 59 | 27.2 | | 15 | 16.9 | 12 | 27.9 | |
| No | 559 | 78.0 | 526 | 79.3 | | 136 | 82.9 | 337 | 83.6 | | 349 | 75.2 | 158 | 72.8 | | 74 | 83.1 | 31 | 72.1 | |
| Average length of stay (hours, mean ± SD) | 22.9 ± 19.2 | | 12.6 ± 17.0 | | <0.001 | 3.0 ± 2.0 | | 3.0 ± 1.4 | | 0.98 | 22.8 ± 3.6 | | 21.8 ± 3.9 | | <0.001 | 60.1 ± 28.3 | | 56.3 ± 34.3 | | 0.12 |

**TABLE 2** Returns to care within 7 days (A) comparing mastectomies before and after the SHR initiative and (B) comparing all inpatient versus outpatient mastectomies

| A. Total no. | Total mastectomies | | | | Outpatient mastectomies (LOS 0) | | | | Overnight admission (LOS 1) | | | | Inpatient mastectomies (LOS > 1) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pre-SHR $n = 717$ | | Post-SHR $n = 663$ | | $p$ value | Pre-SHR $n = 164$ | | Post-SHR $n = 403$ | | $p$ value | Pre-SHR $n = 464$ | | Post-SHR $n = 217$ | | $p$ value | Pre-SHR $n = 89$ | | Post-SHR $n = 43$ | | $p$ value |
| Return to OR | 25 | 3.5% | 23 | 3.5% | 0.99 | 1 | 0.6% | 9 | 2.2% | 0.29 | 8 | 1.7% | 6 | 2.8% | 0.39 | 16 | 18.0% | 8 | 18.6% | 1.00 |
| Return to ED | 37 | 5.2% | 34 | 5.1% | 0.98 | 10 | 6.1% | 20 | 5.0% | 0.68 | 22 | 4.7% | 13 | 6.0% | 0.58 | 5 | 5.6% | 1 | 2.3% | 0.66 |
| Readmission | 10 | 1.4% | 18 | 2.7% | 0.08 | 2 | 1.2% | 13 | 3.2% | 0.25 | 8 | 1.7% | 4 | 1.8% | 1.00 | 0 | 0.0% | 1 | 2.3% | 0.33 |
| B. Total no. | Total $n = 1380$ | | Outpatient $n = 567$ | | | Inpatient $n = 813$ | | $p$ value | | | | | | | | | | | | |
| Return to OR | 48 | 3.5% | 10 | 1.8% | | 38 | 4.7% | 0.004 | | | | | | | | | | | | |
| Return to ED | 71 | 5.1% | 30 | 5.3% | | 41 | 5.0% | 0.84 | | | | | | | | | | | | |
| Readmission | 28 | 2.0% | 15 | 2.6% | | 13 | 1.6% | 0.17 | | | | | | | | | | | | |

*SHR* surgical home recovery, *OR* operating room, *ED* emergency department, *LOS* length of stay

outcomes of 29 outpatient mastectomies with immediate reconstruction from an outpatient cancer center from 2000 to 2004 were evaluated. Only one patient (3%) required reoperation and hospitalization for bleeding.[18]

In our study, same-day discharge rates rose for all types of mastectomy surgeries, including bilateral and unilateral, and those with and without reconstruction. Reconstruction affected same-day discharge rates for both unilateral and bilateral mastectomies. Thirty-five percent of patients undergoing bilateral mastectomy without reconstruction were discharged the same day compared with 24.5% of patients undergoing bilateral mastectomy with reconstruction. For unilateral mastectomies, 39.1% were discharged with reconstruction versus 46.7% who were discharged same day without reconstruction. We hypothesized that this difference may be related to longer OR times and potentially higher rates of postoperative nausea, vomiting, and pain. In a systematic review of outpatient breast surgery, intractable vomiting, patient anxiety, and pain control were the main reasons for failing discharge.[19]

The ERAS Society has stated the consensus guideline for optimal perioperative care for breast reconstruction should not be used to justify restrictions on reimbursement for length of stay.[1] Rather, patient safety must be considered first and ERAS practices should be implemented in a measured, thoughtful, and studied manner. We agree with this perspective. The surgeons in this study used clinical judgement to determine admission status and adopted the ERAS protocols for each patient at their discretion. Regardless of whether ERAS principles are fully adopted, data suggest that same-day discharge improves the recovery of mastectomy patients.[20] Margolese et al. found that the 55 patients who underwent outpatient mastectomy reported significantly better emotional adjustment and fewer psychological distress symptoms. Inpatients reported that it took an average of 27 days to feel like they had recovered from surgery, approximately 10 days longer than outpatients.[11] Dumestre et al.[10] found that in 29 OP mastectomy patients, there was significantly less severe pain, less nausea, and patients felt more rested than the 11 patients in the transition period (mean 1.6 nights length of stay).

This study has several limitations. We used administrative data, which relies on accurate operative logs and electronic health records and lacked specific variables, such as comorbidities, reason for deferring reconstruction, and reason for inpatient admission. Chart audits were performed by QoS to ensure data integrity. Our group also independently reviewed the charts for all patients who were readmitted. The number of complications in each cohort was low, limiting the reliability of logistic regression models. Finally, we were not able to determine if the SHR for mastectomy checklist was fully implemented in each

medical center. Despite these limitations, a statistically significant change in same-day discharge rates for mastectomy patients was clearly demonstrated after implementing the SHR Initiative.

In evaluating the efficacy and safety of the SHR Initiative at KPNC, we demonstrated that with proper preparation, safe and convenient postoperative recovery can be offered to mastectomy patients in the comfort of their own homes, reducing the potential harms and costs associated with hospital admission without an increase in complication rates. The successful implementation of this program supports continued expansion of SHR after mastectomy. Future work will evaluate the adherence to ERAS protocols and whether this predicts the success of outpatient mastectomy, specifically looking at the use of opiates, regional nerve blocks, and method of implant reconstruction, as well as patients' perceptions of their care experience with home recovery. We believe that SHR for mastectomy combines the highest standard of quality, safety, and service for our patients. Given that our patient population is representative of the general population, our results can be broadly applied to any breast surgery practice.

**DISCLOSURE** No disclosures.

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