



Destination Surgery: Creation of a Virtual Care Hotel Program for Outpatient Surgery within Urology at Mayo Clinic in Arizona

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DEFINE

BACKGROUND

The Mayo Clinic in Arizona campus has been historically challenged with hospital capacity, pre-dating the COVID pandemic. The institution is well-accustomed to *code purple* days, whereby there are no hospital beds available oftentimes resulting in delayed or deferred surgical cases. With challenge comes innovation, and the continued lack of hospital beds has resulted in many innovations in transitioning patients to outpatient care, reflected in the dramatic growth of outpatient surgery, driven from 61% in 2019 to 69% in 2022. The Department of Urology has been an early pioneer in outpatient surgery with a record-high of 86% of all urologic procedures completed as outpatient in 2022. However, in early transitions to outpatient surgical volume dating back to 2018, institutions and clinical teams frequently see increased outpatient in a bed (OPIB) cases, summarized as outpatient surgery patients that remain overnight or for an extended period occupying an inpatient/acute care bed, as they are oftentimes in place for social reasons (i.e., caregivers), convenience, or for outpatient treatment needs (i.e., infusion, etc.). The Department of Urology was identified as one of the largest contributors of OPIB cases, dating back to 2020, due to the innovation to drive more procedures outpatient.

OBJECTIVE

The Department of Urology sought to decrease the volume of OPIB surgical cases, meanwhile reducing surgical readmissions and maintaining excellent patient care and safety for urologic patients. Primary metrics of success monitored for any intervention implemented would include percentage of OPIB cases to total cases, total number of 30-day post-operative readmissions, and patient satisfaction.

MEASURE

IMPROVEMENT MEASURE BASELINE & SAMPLE SIZE

Improvement Measurement: 2,318 urologic surgical procedures were completed in 2020 with 9.9% of cases yielding an OPIB stay, and an additional 2,941 cases were completed in 2021 with 6.3% yielding an OPIB stay.

BALANCING MEASURE BASELINE & SAMPLE SIZE

Balancing Measurement: Urology 30-day readmissions were identified as *needs improvement* through the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) for the 2021 period within urology.

DATA COLLECTION PLAN FOR MEASURES

Total surgical patients and OPIB metrics were monitored via reporting through the Epic® EMR with specific analysis around OPIB by case type; 30-day readmission data was monitored via the NSQIP reporting dashboard.

ANALYZE

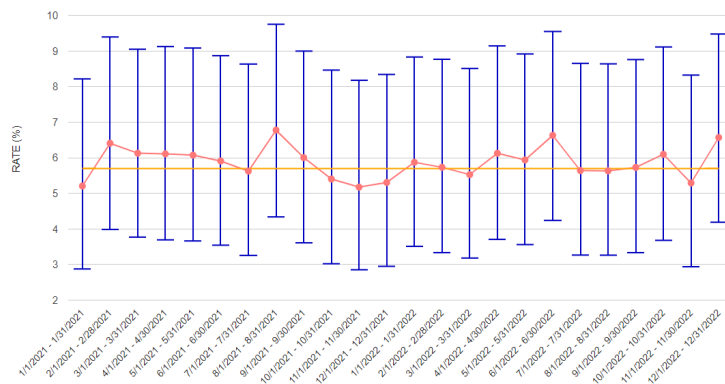
POTENTIAL CAUSES

The urology team engaged in a comprehensive review to determine opportunities to reduce OPIB stays post-operatively, without negatively impacting quality of care or outcomes.

- ❖ Analysis of primary case types resulting in OPIB status, including holmium laser enucleation of the prostate (HoLEP), robotic-assisted radical prostatectomy (RARP), and transurethral resection of the prostate (TURP) cases and data for 30-day readmissions
- ❖ In analysis of primary contributors of OPIB cases and 30-days readmissions, key insights included: (1) 71% of 30-day readmitted patients re-admit through the ER, (2) 62.9% of total surgical patients resided more than 20 miles from hospital campus, (3) the primary driver of both OPIB status and 30-day readmissions were soft calls for catheter management, pain management, or caregiver anxiety, and (4) patient and caregiver anxiety related to "being away from the hospital" the night of surgery was a significant contributor to OPIB status.

In prioritizing interventions available, implementation of a virtual Care Hotel model was selected, whereby selected patients would undergo outpatient surgery and discharge to home from the hospital. However, they would spend the first night post-operatively in a vacated "casita" on campus with a hotel-like room and bathroom that was connected via technology kits to an out-of-state nursing staff who were available if/when clinical questions arose, recognizing no on-site staff were available and therefore no hands-on care was possible.

BALANCE- 30-DAY READMISSIONS



- ❖ 30-day urology readmissions, as measured by the ACS NSQIP program improved from *needs improvement* in Q1 2022 to *as expected* by end of year. It is important to note this includes all readmissions within urology, and not just outpatient surgical procedures, as there was only 1 observed readmission through the Care Hotel since project implementation.

IMPROVE

INTERVENTIONS SELECTED AND TESTED

Beginning February 2022, surgeons identified patients eligible for the virtual Care Hotel at the time of case-booking and they were confirmed for a one-night stay following surgery with a caregiver, usually a family member or friend. Patients and caregiver were connected remotely to registered nurse (RN) staff in a centralized call center via a video-capable tablet and phone for clinical questions and monitoring. These were typically patients that would have otherwise incurred an OPIB hospital stay. Patients were educated that they were not staying in licensed clinical space, so no hands-on care was available.

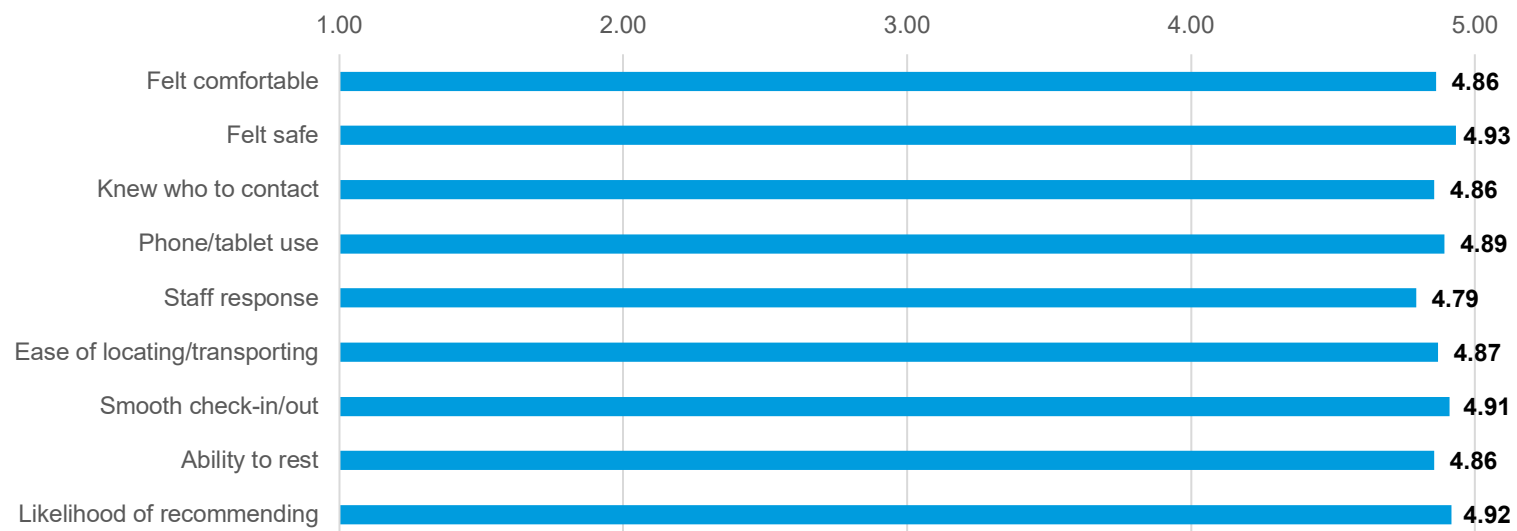
COMPARISON FOR THE IMPROVEMENT MEASURE

- ❖ Total volume of 274 unique patients stayed in the Care Hotel from February 7, 2022 – December 31, 2022
 - ❖ Case breakdown: 140 HoLEP, 88 RARP, 9 transurethral prostatectomy (TURP), and 34 other urologic case types
 - ❖ 83 out-of-state patients (30%) vs. 191 in-state patients (70%); of all in-state patients, 77 unique patients (40%) were from outside of Phoenix metro
 - ❖ 78 additional Care Hotel patient stays planned with 54 patients admitted via OPIB and 24 patients electing to go home instead; 1 readmission for shortness of breath and chest pain and 2 ER visits for bladder spasm without readmission (i.e., patient returned to Care Hotel)
- ❖ Total volume of urologic surgery cases increased 25% from 2021 to 2022, yet total OPIB cases declined 1% for the same period. This decline in OPIB cases was most evident in HoLEP procedures, which increased by 78% from 2021 to 2022, yet OPIB cases declined by 11%. This has returned 274 bed days back to the hospital
- ❖ Results showed a decline in total OPIB cases in the department from 9.9% of all urologic surgery patients having an OPIB stay in 2020 to 5.3% in 2022.

COMPARISON FOR THE BALANCING MEASURE

- ❖ Urology 30-day readmission, as measured through American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) improved from *needs improvement* to *as expected* between January 2022 and December 2022.
- ❖ Patient satisfaction was positively impacted, as evidenced by an average score of 4.88 out of 5 (positive) on all questions asked of patients in the patient experience survey that was extended upon discharge from Care Hotel. A total of 234 patients have completed the survey across 274 unique patient stays for the same period.

BALANCE- PATIENT EXPERIENCE



IMPROVE- OUTPATIENTS IN A BED

Total Surgical Cases			
	2020	2021	2022
RARP	247	252	267
HoLEP	179	244	435
Other	1,892	2,445	2,988
TOTAL	2,318	2,941	3,690
Total OPIB Cases			
	2020	2021	2022
RARP	94	41	33
HoLEP	54	55	51
Other	81	88	110
TOTAL	229	184	194
% OPIB			
	2020	2021	2022
RARP	38.1%	16.3%	12.4%
HoLEP	30.2%	22.5%	11.7%
Other	4.3%	3.6%	3.7%
TOTAL	9.9%	6.3%	5.3%

CONCLUSION

The Care Hotel model for post-operative outpatient surgical patients and their families has demonstrated great success in reducing outpatients in a bed within the Department of Urology, without negatively impacting 30-day readmission rates, meanwhile improving patient satisfaction and comfort. This model of care delivery is highly translatable across other surgical departments, including those without physical space for a Care Hotel, as patients can utilize the telehealth platform in other locations (i.e., home, rental, hotel, etc.).

