



Transforming Rural Surgical Care: Hospital-at-Home for Colorectal Surgery

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BACKGROUND

HOSPITAL-AT-HOME (HAH) CARE

- Hospital capacity constraints create accessibility barriers for patients.
- HaH programs aim to reduce hospital capacity constraints by either expediting the rate of discharge for admitted patients or bypassing inpatient stay altogether.
- HaH programs mobilize traditional inpatient care practices into the patient’s own home.
- HaH have been shown to reduce patient length of stay, improve patient-reported care satisfaction, and decrease hospital readmission rates [1,2].

ADVANCED CARE AT HOME (ACH)

- ACH is a novel HaH program that is currently implemented at three Mayo Clinic sites.
- A 20-month evaluation of ACH found no fatal outcomes, despite most patients presenting with moderate to major illness severity [3].

CURRENT GAPS IN CARE

- Accelerated discharge models [4-7] have been used successfully in colorectal surgery.
- Few, if any studies have described using HaH models for colorectal surgery patients in rural settings.

METHODS

We report a case series of retrospectively collected data for colorectal surgical patients receiving post-operative care in coordination with HaH over a 28-month period.

DESCRIPTIVE DATA

- Patient Characteristics
 - Surgical Procedures
 - Length of Stay (LOS)
 - Medication Requirements
- Escalation Back to Brick-and-mortar (BAM) Hospital
 - BAM Hospital Bed Days Saved
 - Surgical Morbidity

RESULTS

PATIENT DEMOGRAPHICS AND MEDICAL HISTORY

- Four patients underwent a total of five colorectal surgeries with post-operative care coordinated with HaH
 - Procedures included 2 laparoscopic right hemicolectomies, laparoscopic colostomy reversal, robotic low anterior resection with diverting ileostomy, and ileostomy reversal (Fig. 1)
 - Three surgeries were performed for adenocarcinoma, one for Crohn’s disease, and diverticulitis (Fig. 2)
- Median (interquartile range [IQR]) patient age and ASA score were 52 (45,65) and 2 (2,3) respectively.

POST-OPERATIVE STAY

- Median (IQR) length of stay (LOS) in BAM hospital was 25 (23,26) hours (range 5-77 hours) prior to transfer to HaH
- Median post-op intravenous fluid was 607mL per 24 hours (560, 620)
- Median (IQR) daily morphine milligram equivalents (MME) was 2.7 MME per 24 hours (0, 4.9)
- Total median (IQR) LOS was 4 (3, 6) days
- Total hospital days saved in BAM hospital was 13 days with a mean of 2.6 bed days saved per hospitalization

POST-OPERATIVE COMPLICATIONS

- One patient was transferred back to BAM hospital
 - Transferred for evaluation of fever and tachycardia
 - Complication resolved with fluids and no septic source was identified
- No additional post-operative morbidity or mortality occurred

FIGURE 1: Procedures

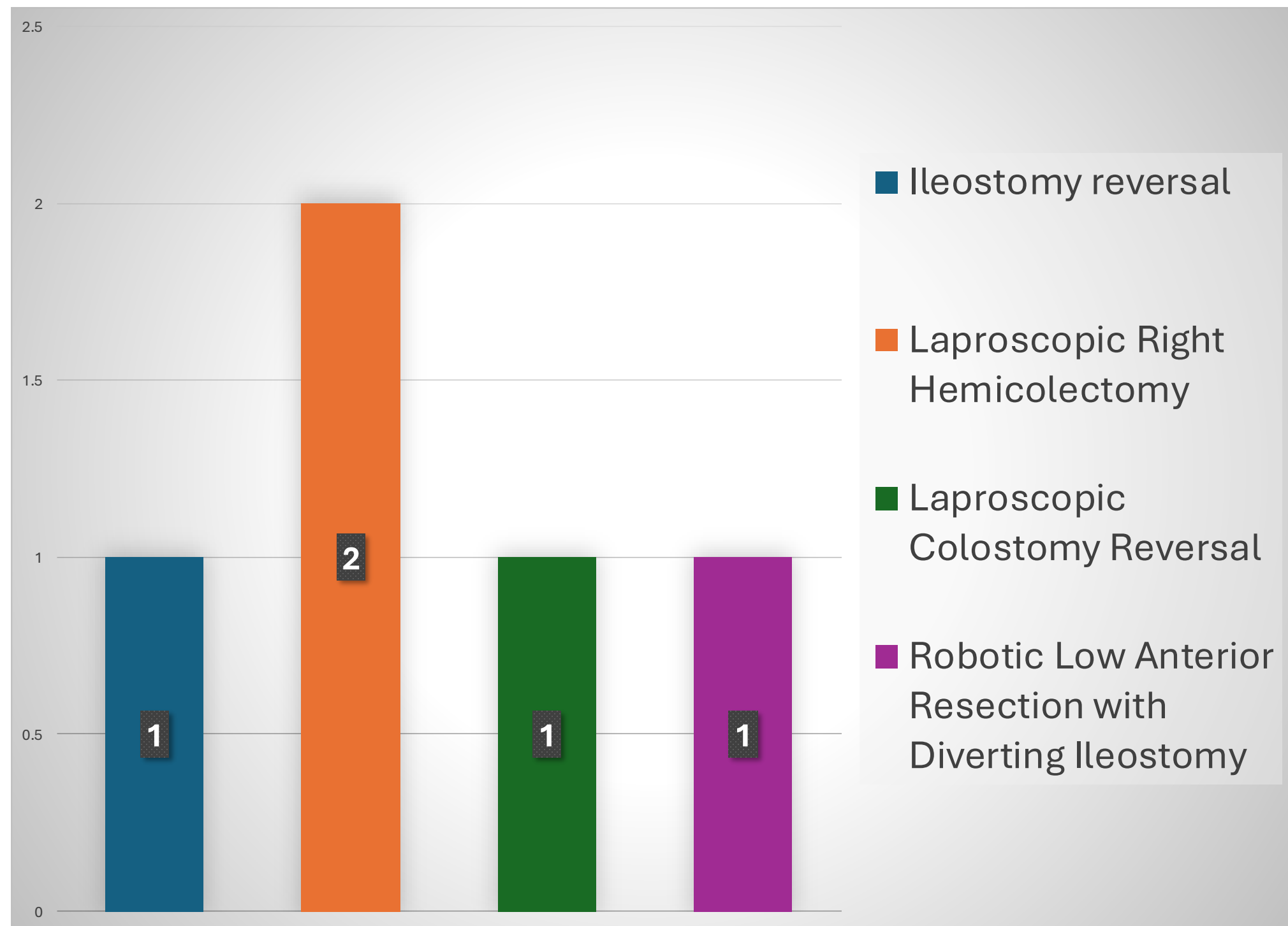


FIGURE 2: Diagnoses

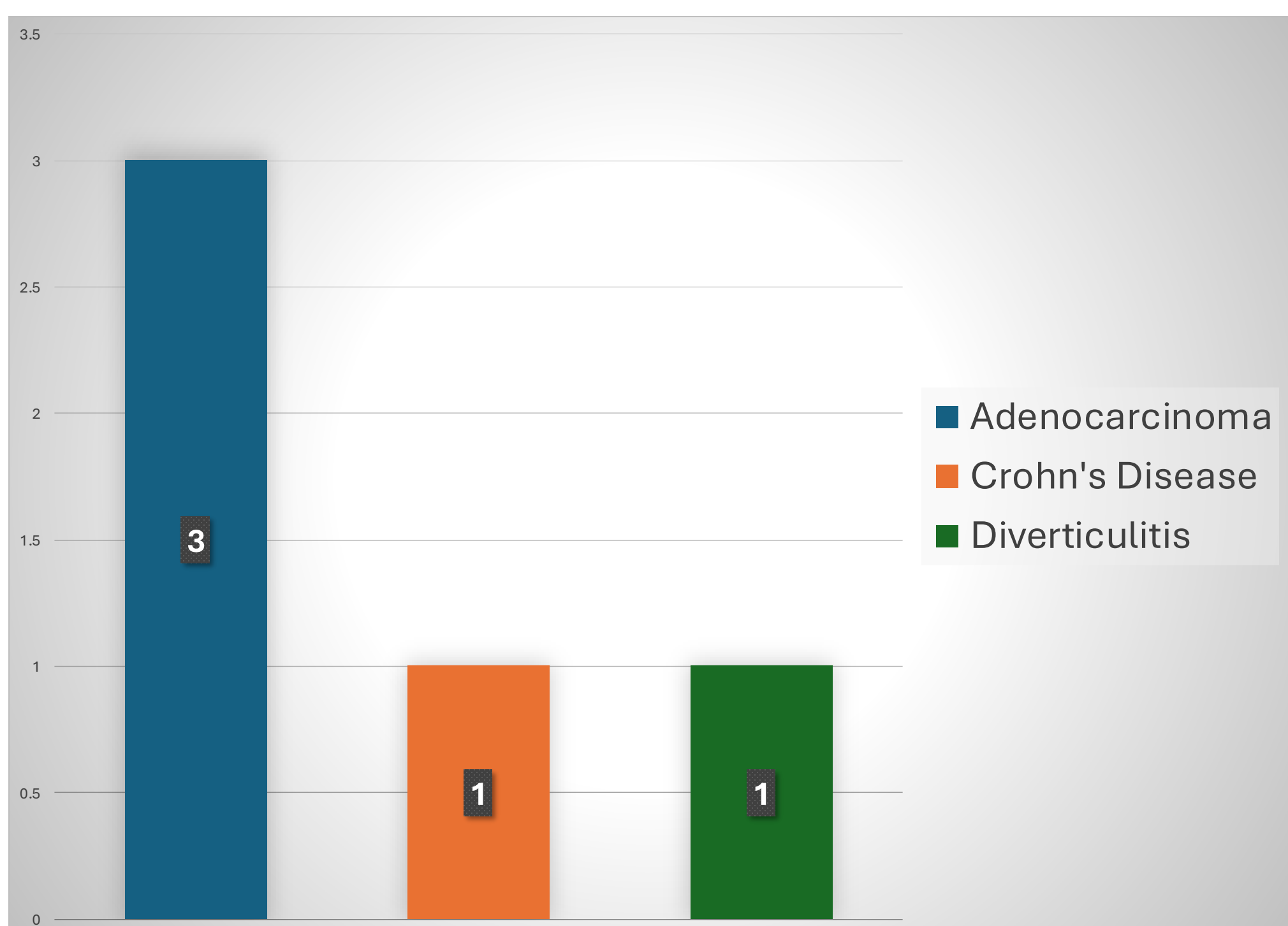


TABLE 1

Patient Demographics	Total (n = 5)
Median Age (IQR)	52 (45, 65)
Median ASA Score (IQR)	2 (2, 3)
Post-operative Stay	
Median BAM LOS in Hours (IQR)	25 (23, 26)
Total Median LOS in Days (IQR)	4 (3, 6)
Total BAM Hospital Days Saved	13
Mean BAM Bed Days Saved Per Hospitalization	2.6
30 Day Transfers to BAM	1
Median Volume of IV Fluids Administered per 24 Hours Post-op in mL (IQR)	607 (560, 620)
Median MME Administered per 24 Hours Post-op (IQR)	2.7 (0, 4.9)
Post-operative Complications	
Surgical Site Infection	0
Deep Vein Thrombosis	0
Urinary Tract Infection	0
C. Difficile Infection	0
Mortality	0

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CONCLUSIONS

Post-operative management of well-selected colorectal surgery patients in HaH was safe and favorably viewed by patients

One patient who underwent colorectal resection with HaH preferred HaH over BAM for subsequent ileostomy reversal

These findings are noteworthy given the rurality of this HaH program and the hospital’s capacity constraints

Major limitations include: 1) eligibility restricted to patients living within 30 miles of the hospital, and 2) limitations in insurance coverage options for HaH services.

Surgical HaH use cases remain an area of opportunity to offer acute care for patients with cancer and chronic diseases in the comfort of their own homes