Transfer of low-risk patients in emergency general surgery: Patient survey on the process of care and perceptions of safety

Min Hyuk Jang, MS, V Christian Sanderfer, MD, Debra Manning, CNS, Maria Baimas-George MD MPH, Huaping Wang, Ph.D. MPH, Lynnette Schiffern, MD, Brent Matthews, MD Caroline E Reinke, MD, MPSH

Introduction

- Emergency general surgery (EGS) patients make up a significant portion of hospital admissions, comprising 11% of all admissions, totaling over three million annually.[1]
- Heightened hospital capacity is associated with adverse outcomes among EGS patients, including increased mortality and readmission rates.[2] Given that many high-acuity hospitals are consistently at full capacity, there is a need to match appropriate patients with available hospital resources.
- EGS regionalization focuses on high-risk operations in high-volume centers, enabling a triage system for transferring high-acuity patients to resource-rich facilities. However, benefits of interfacility transfer for low-acuity patients remain unclear.[3-4]
- Evaluating the transfer of low-risk surgery patients to affiliated community hospitals has shown promise in maintaining high-quality care and outcomes while also saving bed days and operating room time at tertiary care centers. However, the individual patient perception of care, satisfaction, and safety regarding such transfers remains to be evaluated.

Objectives

Aim 1: Understand patient experience and perceptions of safety related to process of care for emergency general surgery care for low-risk digestive disease conditions → Hypothesis 1: patients who present to a lower acuity hospital or FS-ED will have improved perception of the process of care and safety compared with those transfer from a higher acuity hospital.

Aim 2: Describe patient perception of written and verbal information provided at time of discharge from an admission for a digestive disease EGS diagnosis → Hypothesis 2: patients who transfer to a community hospital will report greater satisfaction with postoperative care compared to direct admits from the community hospital-ED.

Aim 3: Evaluate patient experience and perception of safety based on insurance status, education level, and Social Vulnerability Index (SVI) → Hypothesis 3: SVI status will influence perception of discharge information and understanding.

Methods

- Study conducted from May 2023 to March 2024
- Prospective identification of patients undergoing non-elective laparoscopic appendectomy or cholecystectomy
- Data collected from electronic medical record (EMR) review: patient demographics, ED length of stay (LOS), OR (Operating Room) characteristics, and 30-day outcomes
- Patients contacted by telephone post-discharge, survey conducted using a five-point Likert scale and open-ended questions. Univariate analysis used to compare differences and thematic responses

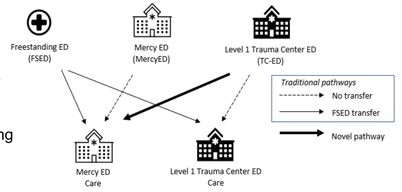


Figure 1: Patient transfer/ admission pathways

Results

(a)

	No transfer	FS-ED to CH	TC to CH	p-value
	N =69	N =52	N =60	
Age (years)	37 (26-55)	40 (30-55)	38 (29-52)	0.61
Female gender	68.5%	65.6%	66.7%	0.93
Race				0.19
White	56.2%	77.1%	68.1%	
Black or African American	32.6%	16.4%	26.1%	
Others/unknown	11.2%	6.6%	5.8%	
Ethnicity				0.75
Hispanic or Latino	10.1 %	4.9 %	5.8 %	
Not Hispanic or Latino	85.4 %	91.8 %	91.3 %	
Unknown or Not Reported	4.5 %	3.3 %	2.9 %	
Insurance				0.46
Commercial & Medicare	71.9 %	78.7 %	68.1 %	
Medicaid & Self-pay	24.7 %	18.0 %	23.2 %	
Medicare	3.4 %	3.3 %	8.7 %	

(b)

	No transfer	FS-ED to CH	TC to CH	p-value
	N =69	N =52	N =60	
ED LOS (hours)	6.1 (4-9.2)	4.7 (3.5-6.4)	6.8 (5.6-8.9)	**0.0003**
AAST Grading				0.049
Grade 1	82.0 %	86.9 %	72.5 %	
Grade 2	4.5 %	3.3 %	14.5 %	
Grade 3	9.0 %	8.2 %	5.8 %	
Grade 4	2.25 %	0 %	7.25 %	
Grade 5	2.3 %	1.6 %	0.0 %	
Procedure type				0.43
Laparoscopic Appendectomy	61.8 %	54.1 %	52.2 %	
Laparoscopic Cholecystectomy	38.2 %	45.9 %	47.8 %	

Figure 2: Patient Demographics Information (a) and Objective EMR Report (b) gathered in Same Hospital, Freestanding ED, Level 1 Trauma Center ED to CH (N= 69, 52, 60, respectively)

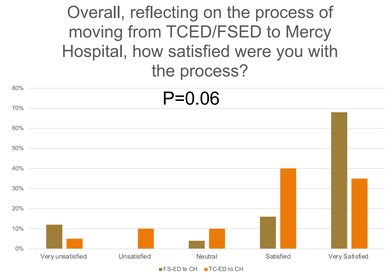


Figure 3: Transfer experiences and processes of care satisfaction from FSED to CH compared to TC-ED to CH (N= 60, 69, respectively)

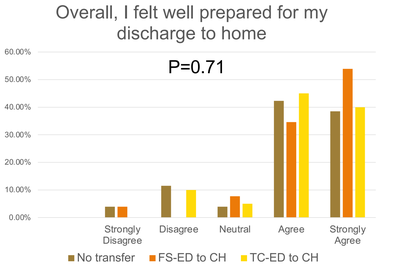


Figure 4: Postoperative experiences related across direct admission, freestanding ED transfer, and TCED to CH (N= 69, 52, 60, respectively)

(b)

	Low SVI	High SVI	p-value
	N =151	N =67	
The instructions for taking my prescription medications at home were explained clearly to me. This includes instructions on when and how to take medications, as well as any potential side effects.			0.65
Strongly Disagree	3.6 %	7.1 %	
Disagree	8.9 %	7.1 %	
Neutral	5.4 %	7.1 %	
Agree	30.4 %	42.9 %	
Strongly Agree	51.8 %	35.7 %	
The instructions for wound care and personal hygiene were explained clearly to me.			0.82
Strongly Disagree	5.4 5	6.3 %	
Disagree	1.8 %	0.0 %	
Neutral	5.4 %	12.5 %	
Agree	38 %	31 %	
Strongly Agree	50 %	50 %	

(a)

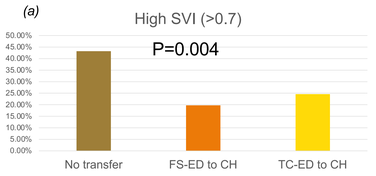


Figure 5: Post-discharge education and knowledge retention compared to low and high Social Vulnerability Index (SVI) status (a) and (b) in relation to post-discharge knowledge clarity (N = 151, 67, respectively).

Patient Experience Responses (n=72):

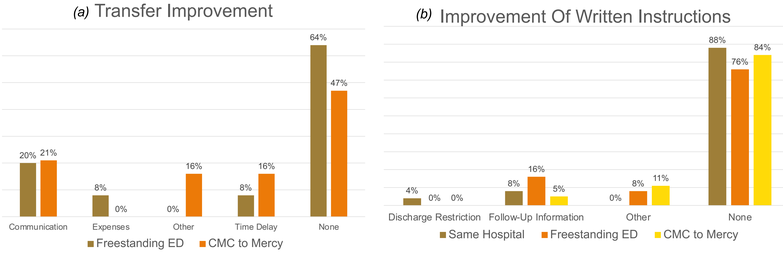


Figure 6: Patient post-discharge survey responses of (a) Transfer Improvement (b) Improvement of Written Instructions in Same Hospital, Freestanding ED, CMC to Mercy (N = 28,25 ,19, respectively)

Results

- There were no significant differences in age, gender, ethnicity, or insurance status across transfer pathway groups
- Satisfaction level was similar between transferred groups (84% from FS-ED; 75% from TC). Non-transfer groups had slightly lower levels of satisfaction noted for instructions regarding admission (69.3%) and a lower level of satisfaction for the overall process (61.6%).
- There were no significant differences in discharge satisfaction between patients with high SVI and versus those with low SVI in medication, wound care, and physical activity.

Discussion

- Transfer group with higher admission process satisfaction may stem from efficient disposition via the triage system, avoiding delays tied to hospital timeframes. Lower-level facility transitions may enhance provider-patient interactions, allowing for more personalized care.
- While overall discharge preparedness were similar, a clearer communication regarding follow-up appointments and restrictions are desired. Possible factors include differences in communication styles, cultural aspects, and healthcare providers' efforts to ensure comprehension.
- No SVI differences could indicate consistent accessibility and literacy-appropriate communication by healthcare providers, despite potential barriers faced by individuals with lower SVI.

Conclusion

Transferring patients from FS-ED and TC-to-CH for low-risk operative patients remains a viable strategy to decrease high patient volumes seen at TC with minimal safety concerns for transferred patients and equivalent satisfaction to non-transferred patients. Future studies will aim to create standardized educational packets for transferred patients to improve upon communication.

References

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