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Research Article

ASSESSING PATIENT HANDOFF PROCESS AMONG SURGICAL RESIDENTS: COMMUNICATION ERRORS AND IMPROVEMENT STRATEGIES

Dr Uday Kiran G*

Assistant Professor, Department of General Surgery, Great Eastern Medical School & Hospital, Ragolu, Srikakulam, India.

ABSTRACT

This study aimed to evaluate the patient handoff process among junior surgical residents in accredited residency programs, with a focus on identifying communication errors and areas for improvement. Surveys were distributed to all accredited residency programs with 130 and 24 responses received out of 488 programs, respectively. Findings revealed that 170 and 100 respondents, respectively, did not receive any patient handoff training beforehand, and 27% and 64% reported inadequate handoff systems in their institutions. Standardizing verbal handoffs emerged as a key strategy for improving patient handoffs. The study underscores the importance of standardized handoff forms in ensuring patient safety and care continuity during transitions. Efforts to address communication errors in the handoff process are crucial for minimizing harm to patients.

Key words: Patient handoff process, Surgical residents, Communication errors, Standardization, Patient safety.

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INTRODUCTION

A handoff of patient care ensures continuity of care and patient safety by transferring care from one provider to another [1]. Residents, nurses, and surgeons handle patients multiple times a day. The most common causes of sentinel events are incomplete patient handoffs and communication failures. Defining sentinel events as unexpected events that result in death or serious injury, including loss of limbs or function. [2] 12.3% reported experiencing major harm from handoffs. In spite of the importance of patient handoff, information about it among junior surgical residents was lacking [3]. The present study aimed three¬fold: to better understand how junior surgical residents conduct verbal and written patient handoffs during residency programs in general surgery in the Zone 1s and Zone 2. Identifying the factors residents perceive as necessary to improve their current handoff process, we have to identify the common reasons why handoffs fail.

Corresponding Author
Dr Uday Kiran G

METHODS

There were 94 questions in our survey that assessed every step of the patient handoff process. First, demographics and general questions about patient handoff were asked, followed by verbal handoffs and how they were conducted, and finally written handoffs. Questions about minor and major harm were asked in the fourth and fifth sections. Participants' perspectives on improving existing handoffs at their institutions were obtained in section six.

Survey

Survey Monkey was used for one-time data collection. An accompanying request was sent to program directors to forward the link to eligible residents. Non-responders were not reminded due to the confidentiality of their emails.

Handoffs and harms to patients

Handoffs are the exchange of information between healthcare providers across the continuum; to include an opportunity for clarifying, clarifying, and confirming." A minor harm is one with limited clinical consequences. In this study, a major harm was defined as something that resulted in a complication, injury, or death as the result of communication failure or incomplete handoff.

Statistics

The data are presented as counts and proportions. Survey Monkey provided us with summary statistics.

RESULTS

Aspects of respondents

Among the Zone 1 and 2 areas, Patients accredited surgical residency programs, 130 participated in the survey. We did not collect reasons for non-participation. The following table shows the demographics of participants.

Patient handoff questions

Seventy-nine percent and seventy-one percent of zone 1 and Zone 2 junior surgical residents said they received handoffs appropriately, while 18% and 29% did not. In participants, surgical residents, 55% and 13.5%, respectively, said the handoff is always interactive. Senior residents supervised handoffs only 3% of the time among surgical residents; staff members never supervised them. The residents report that the handoff occurs at a specific time and at a designated location. Compared to 14% of zone 2 surgical residents, 54% of Zone 1 surgical residents reported being interrupted while the process of handing over was in progress. Medical personnel paging, nurses paging, trauma alerts, and new consults or admissions were the most common reasons for handoff interruptions.

In the Zone 1 and Zone 2, interruptions during patient handoff resulted in information loss, decreased quality of communication, decreased patient care, and harm to patients. Cross coverage residents and night float residents experienced the most difficulty with handoff, followed by primary team residents and moonlighting residents, respectively. Zone 1 typically cover 20–39 patients when they are on call, including services and consults, while 25% cover 40–60 patients. During their on-call hours, 39% of Zone 2 residents saw 40-60 patients, 35% saw 60+ patients, and 25% saw 20-39 patients. In their surgical training, about 77% of Zone 1 and 96% of Zone 2 did not receive patient handoff training. As well, both groups reported that their institutions' existing hand-off systems are inadequate. Furthermore, 29% of Zone 1 and 37% of Zone 2 believe that existing handoffs prevent continuity of care.

The surgical residents generally expressed moderate satisfaction and moderate dissatisfaction regarding patient handoffs. In terms of patient handoff, 6% of zone 2 surgical residents were very satisfied, 52% moderately satisfied, 35% moderately dissatisfied, and 8% very dissatisfied.

Verbal handoff assessment

A standardized handoff protocol was not found in 87% of and 96% of Zone 1 and 2 surgical residency programs. Compared to Zone 2 surgical residents, Zone 1 spent more time receiving handoffs (15 to 29 minutes) than Zone 1 (20.8%). It was the lack of current patient information during the verbal handoff that most commonly resulted in incomplete patient handoffs among both residents. Residents from the Zone 1 surgical community cited three reasons for not confronting their colleagues who gave the incomplete handoff: there was no major harm to the patient (35%), they forgot about it (18%), and they were afraid to confront them. Besides not having time to discuss the incomplete handoff (6%), the resident receiving it received it from a senior resident (6%). Incomplete handoffs were not reported back by Zone 2 participants for different reasons, with a delay in reporting (33%) being the most common, followed by receiving it from a resident (25%), forgetting about it (25%), and not experiencing major harm (20%).

Table: 1 Characteristics of survey participants.

Characteristic	Area no. (%)*	
	Zone 1	Zone 2
Total no. programs	488	34
Participated	130	24
Refused	40	0
No response	318	10
Male sex	130	66
Age, mean, yr	29.9	30.0
Level of training		

PGY–1	156	90
PGY–2	76	38
Hospital type		—
Global hospital	156	—
Community hospital affiliated with a university	56	—
Community hospital not affiliated with a university	16	—
VA hospital	0	—
Military hospital	6	—
Other	2	—
Type of resident	—	—
International medical graduate	46	20
Others	188	124
Specialty	—	—
General surgery	208	116
Other	34	8

DISCUSSION

A patient handoff ensures the continuity of care and safety of patients during shift changes by transferring patient information among health care providers [5,6]. There is no limit to handoffs in medicine. Several high-impact organizations, such as NASA, power plants, and railroad dispatch centers, rely on handoffs between employees every day, ensuring the safety of the community and the employee, with a high safety profile [7]. Medical errors, however, continue to plague the health care system. It was estimated by the Institute of Medicine in 1999 that 44 000 to 98 000 patients die each year because of medical errors in hospitals. [8] The economy was also affected by medical errors. Approximately $17.1 billion was spent on measurable medical errors in 2008. [9] Poor communication is one of the main causes of patient harm.

To determine how to improve patient handoff, a survey was conducted among junior surgical residents in the Zone 1s and Zone 2. Major and minor harm was most commonly caused by incomplete verbal handoffs, according to participating residents. There are several reasons why this occurs, including a Junior surgical residents lack training [10], verbal and written handoffs are not standard, patients aren't included in verbal handoffs, face-to-face interaction was lacking, information was transmitted passively, interruptions occur, time constraints apply, and sickest patients are not identified. Standardizing the handoff process and ensuring consistency and completeness have been achieved with mnemonics [11, 12]. Between 1987 and 2008, 24 mnemonics have been reported in the literature, with more than half using SBAR. [13] This suggests that there is no one mnemonic that fits all situations. Furthermore, these mnemonics were not validated.

To maintain continuity of care and respect working hours, the most junior members of the team typically hand off patients at shift changes. While patient handoff is a vital component of safety, few junior surgical residents receive it, and nearly one-third of residents recommend it at the start of residency. Patient handoff can be improved with brief training. [14,15]

CONCLUSION

This study sheds light on the critical importance of evaluating the patient handoff process among junior surgical residents in accredited residency programs. The findings highlight significant gaps in communication training and the prevalence of inadequate handoff systems within institutions. Notably, a substantial portion of respondents did not receive any formal patient handoff training, indicating a clear need for educational interventions in this area. Moreover, the study underscores the value of standardizing verbal handoffs as a key strategy for improving the efficacy and safety of patient handoffs. Standardized handoff forms emerged as crucial tools for ensuring patient safety and care continuity during transitions between healthcare providers. Addressing communication errors in the handoff process is essential for minimizing harm to patients and optimizing healthcare delivery. Moving forward, efforts should be made to implement standardized protocols and provide comprehensive training to junior surgical residents, ultimately enhancing the quality of patient care and promoting better outcomes.

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