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Impact of a Standardized Handoff Tool between Gastroenterology and
PACU Nurses' Communication and Satisfaction

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Abstract

Problem: Patient handoff between nurses is a critical moment where it is imperative that complete and accurate information is exchanged. Handoff of patient information can be complex, and the use of unstructured, non-standardized handoffs could result in poor communication leading to the omission of pertinent information and a decrease in patient safety and staff satisfaction. Several studies have found the use of standardized handoff tools improve communication, decrease omission of critical information, and improve staff satisfaction. While the use of standardized handoff tools is best for patient handoff and safety, there still appears to be a gap in utilization in some areas of nursing.

Methods: This quality improvement project utilized a descriptive observational design. Development of a new GI specific handoff tool was designed after obtaining feedback from both GI and PACU staff and reviewing the current handoff tool. Pre-implementation and post-implementation staff survey data were compared to determine if perceived communication and nursing satisfaction improved in relation to the application of the new handoff tool. Completion rates for items on the new GI handoff tool were also calculated.

Results: Descriptive statistics, Fisher Exact tests, and two-tailed Mann-Whitney tests were utilized to determine statistical significance between staff surveys. No statistical significance was determined in the GI responses for either communication or satisfaction surveys. Two questions were found to be statistically significant in the PACU responses from the communication survey and one question was found to be statistically significant from the satisfaction survey. There was one question that was statistically significant in the combined staff surveys. The documentation completion rates for the most part either

met or exceeded the 90% completion rate. One documentation item did not meet the 90% completion rate.

Implications for Practice: The implementation of the new standardized handoff tool did show improvement in the perceived communication and satisfaction with PACU nurses. No statistical improvement was shown with GI nurses, but there should be continued education on the use of the new standardized handoff tool. Almost all of the documentation items were identified correctly indicating a beneficial aspect of the new handoff tool.

Impact of a Standardized Handoff Tool between Gastroenterology and PACU Nurses' Communication and Satisfaction

Complete and accurate handoff of patient information between healthcare providers is imperative for the wellbeing and safety of the patient; however, handoffs can be complex and failed handoffs continue to be a recurrent issue in the healthcare setting (The Joint Commission [TJC], 2017). This complexity has sparked TJC to mandate the use of more standardized handoff tools to help minimize miscommunications and avoidable medical errors. The use of a standardized handoff tool, such as Situation, Background, Assessment, and Recommendation (SBAR), can be invaluable in many areas of healthcare, but areas with high risk, high acuity patients with multiple transfers of patient care between various healthcare providers are particularly prone to errors and miscommunication (Njambi et al., 2021; Wich et al., 2021). The area of concern is the postoperative handoff between the gastrointestinal (GI) lab nurses and the Post Anesthesia Care Unit (PACU) nurses. The transition of care between these two departments is considered high risk because of the nature and relationship between the GI lab and PACU: the PACU cares for those recovering from endoscopic surgical procedures requiring anesthesia who typically cannot engage in their transfer of care and cannot verify pertinent information.

An informal and unstructured patient handoff can result in omission of critical patient information, inconsistency between nurses, increased risk of errors, and decreased nurse satisfaction (Methangkool et al., 2019). Reports have concluded about 80% of adverse events are related to miscommunication, and the second most common factor specific to recovery unit adverse events is miscommunication between healthcare providers (Methangkool et al., 2019; Wich et al., 2021); furthermore, inadequate patient

handoff can have detrimental results on the healthcare system and of course, the patients themselves. According to TJC (2017), a study released in 2016 found failures in patient handoff communication were responsible for roughly 30% of malpractice claims; unfortunately, these malpractice claims resulted in 1,744 deaths in U.S hospitals and medical practices and a staggering \$1.7 billion in malpractice costs over five years (TJC, 2017).

According to a study by Abela-Dimech and Vuksic (2018), only 34% of the nursing staff in their study were satisfied with the patient handoff they received and only 52% of the nursing staff stated the patient handoff report helped them prioritize patient care. Staff satisfaction can be a valuable measure to evaluate how a certain protocol or policy is working or not working and can also be used to recognize any unintended consequences or negative effects of a new protocol or policy (Methangkool et al., 2019; Nasiri et al. 2021). In the case of this study, the current way patient handoff is being conducted is not conducive to providing high quality care; moreover, the lack of structured communication could compromise patient and staff safety and thus result in decreased staff satisfaction (Abela-Dimech & Vuksic, 2018).

An opportunity has arisen to develop and implement a standardized handoff tool at a large suburban, midwestern hospital. The current handoff process between GI and PACU uses a small patient data sheet. This data sheet has basic patient information such as past medical history, allergies, height/weight, NPO status, blood thinner use, beta-blocker use, procedure to be done, IV site and size, etc., on the front of the data sheet; however, there is no specific GI related procedural information located on this sheet. Therefore, the GI nurses resort to using the back of the patient data sheet, which is blank,

to handwrite what is done intraprocedurally. This results in an informal and unstructured form of handoff; in addition, having multiple specimen samples, i.e., biopsies, during a procedure requires the GI nurse to write the specimen sample information quickly to keep up with the physician taking the samples which could increase the possibility of omitting sample information or omitting other actions conducted during a procedure. These handwritten notes are then used in the handoff to PACU nurses.

Reviewing the literature on important intraprocedural information to hand off between other surgical service departments to PACU, such as anesthesia technique and type of airway, helped identify what intraprocedural information is needed for handoff between GI and PACU. In addition, handwritten notes by the GI nurses on the back of the current patient data sheets were reviewed to identify common information shared in the current handoff process and in-person interviews with staff also provided valuable input in the creation of a standardized handoff tool. After analyzing handwritten notes and staff feedback from in-person interviews, an improved handoff tool was developed.

The Iowa Model of Evidenced-Based Practice will serve as the framework for this quality improvement project (Iowa Model Collaborative et al., 2017). The purpose of this project is to implement and evaluate the impact of a handoff tool on communication and satisfaction between GI and PACU nurses. The aim of this project is to have at least a 90% completion rate of the improved handoff tool by nurses at the end of four weeks, while also improving nursing staffs' perceived communication and nurse satisfaction. The primary outcome measure is to determine if there is an improvement in perceived nursing communication, at least a 90% completion rate utilizing the improved handoff tool during patient handoffs, and improved satisfaction after handoff tool implementation.

The question for study is: Among GI and PACU nurses, how does implementing a standardized handoff tool improve perceived nurse communication, improve completion rate of new handoff tool, and improve nurse satisfaction during patient handoff in four weeks?

Review of Literature

To conduct the literature review search, PubMed, CINAHL, UMSL Summon search, and Google Scholar were utilized. Key search terms and phrases included *patient handoff and safety, SBAR handoff, SBAR communication, perioperative handoff/handover, PACU handoff tool, nursing handoff*, with the use of the Boolean operators AND and OR. Initially, 9,102 results were generated using the key search terms and phrases. Inclusion criteria included articles from 2017-2022, published in the English language, full free text, articles that reference patient handoffs and/or satisfaction, and academic journals. Exclusion criteria included publications older than five years, not in English language, publications without full access to article, and studies that did not reference nurse handoff communication and/or satisfaction. After inclusion and exclusion criteria were applied, 531 publications were generated. Further criteria included using articles which stated what study design was used (e.g., clinical trials, meta-analysis, RCT, systematic review), examined standardized nurse handoff communication between surgical service units (OR, GI) and PACU, and studies examining standardized handoffs between nurses in general, as well as studies looking at nurse satisfaction with implementation of standardized handoff tools. 224 articles remained and ultimately 10 publications were selected after determining the content of the articles met the needs of this review of literature by analyzing the titles and abstracts of the articles (Appendix A).

Structure and consistency during patient handoffs have been noted to be a continuing problem that nursing staff frequently identify as a source of miscommunication. With the use of an informal and unstructured patient handoff, vital patient information is more likely to be omitted or overlooked. Galatzan and Carrington (2018) noted absence of consistency and structure during the transfer of patient information to the receiving nurse is associated with errors during handoff; however, using a standardized patient handoff tool such as SBAR can help provide a consistent, logical order in delivering patient handover to the receiving nurse. The consistent and logical order SBAR provides allows the nurses to identify and correct any omitted information and can therefore improve the receiving nurse's confidence in the report they are obtaining (Stewart & Hand, 2017). However, Müller et al. (2018) found in their study the best evidence of using SBAR was limited to handoff over the telephone between nurses and physicians and further studies are needed to demonstrate the benefit of SBAR.

Stewart and Hand (2017) mention the consistent use of SBAR can improve accuracy, clarity, sufficiency, and efficacy of the information exchanged. Nurses that use SBAR can prioritize the most pertinent information needed to allow the receiving nurse to adequately care for the patient. Nurses who use SBAR as their handoff tool resulted in a more focused patient review, increased the volume of information exchanged, and reduced time spent on superfluous information (Stewart & Hand, 2017). Contrary to the positive aspects of the SBAR handoff tool, Galatzan and Carrington (2018) go on to note in one study they found nurses expressed reluctance to embrace the SBAR style and format despite negative perceptions of their current handoff.

When it comes to evaluating whether a new protocol or method is working or not working, staff satisfaction can be an important element in evaluating the success of an intervention (Nasiri et al., 2021). Nasiri et al. (2021) found before implementation of a structured handoff checklist the satisfaction with the handoff between surgical team members was 67.5%; this satisfaction increased up to 85.5% after a structured handoff checklist was implemented. Furthermore, Stewart and Hand (2017) found similar results stating 91.2% of nurses expressed satisfaction with a standardized SBAR tool and 88% recommending the SBAR tool. To a lesser degree, however, Njambi et al. (2021) found a slight increase in nursing satisfaction after implementing a standardized handoff tool from 55% to 60%.

Compliance to a new handover method can be difficult to achieve if the staff are not satisfied with the new method of giving patient handover; however, a standardized handover method which increases staff satisfaction has a higher compliance rate than those which do not satisfy the staff. Ghosh et al. (2021) established that nurses who found the standardized SBAR tool as having a positive effect on handover were more accepting and had better compliance with SBAR at two and three months post-implementation; moreover, this study found no significant difference in compliance immediately after implementation and at two and three month intervals. In other words, the compliance right after the intervention was the same as the compliance two and three months later.

Wich et al. (2021) conducted a performance improvement project within the surgical services department, which includes staff from OR, PACU, and endoscopy, to increase handoff compliance. The results are similar to those from Ghosh et al. (2021) in after implementing a standardized SBAR tool compliance increased. The low compliance

rates did not entirely fall on the staff's shoulders as the COVID-19 pandemic was occurring. The lowest compliance level in the OR was at 8% in November 2020 and 22% in the PACU of the same month (Wich et al., 2021). Post-implementation of the new revised SBAR tool showed staggering increases in compliance in both OR and PACU in the year 2021 with OR's compliance of 98% in July and PACU's compliance of 100% in September.

Handover between nurses is a moment in time where it is the responsibility of the transferring nurse to provide the receiving nurse with all the relevant patient information necessary for the receiving nurse to properly care for their patient; it is also the responsibility of the receiving nurse to clarify or ask additional questions if needed to obtain the full picture of the patient's situation. This is why good communication is so fundamental and cardinal to providing high quality patient care, and the lack of good communication is one of the main causes of reduced quality of services and patient safety (Raeisi et al., 2019); communication can be a challenge during handover, but a standardized handoff tool can help improve communication and decrease the chance of omitting needed information during the transfer of patient care.

Park et al. (2017) revealed after implementing a standardized handoff tool during patient transfers to the PACU the total number of items reported from the PACU checkoff list increased from 8.7 items to 10.9 items. This reduction in omission of patient information was also seen in a study conducted by Leonardsen et al. (2019). Nurses in this study agreed all relevant information needed in patient handover had improved post-implementation of the standardized ISBAR tool. Transfer of relevant patient information to the PACU nurses increased from 87.6% to 97.8% (Leonardsen et al., 2019). Stewart

and Hand (2017), in addition to the other two studies, found in their research that implementation of standardized SBAR tool decreased the proportion of omitting information from 31% to 11%.

The study by Park et al. (2017) demonstrated a number of items from the PACU checklist had improved during handoff communication. The three most improved items pre versus post-intervention were the transfer of patient allergies, 63% to 93%; anesthesia technique (e.g., general, regional), 58% to 93%; and airway (e.g., intubated, mask), 57% to 93%. Similarly, Njambi et al. (2021) indicated omission of certain patient information was improved after the implementation of a standardized handoff tool. Allergies mentioned during handoff increased from 55.5% to 85.5%, and proper identification of the patient had increased from 29.6% to 70% after intervention.

There are several strengths found among studies and some which share similar strengths. Ghosh et al. (2021) was able to show at the end of their study the overall handover score was higher in post-intervention than pre-intervention scores. Furthermore, strengths in other studies were also able to conclude that the overall quality of patient information communication and patient safety were improved after the implementation of a standardized handoff tool (Leonardsen et al., 2019; Park et al., 2017; Wich et al., 2021). Another strength was the ability of the implemented standardized handoff tool to have the desired effect in changing handoff behaviors in only four weeks with minimal resources and thus was found to be a feasible and useful tool in the PACU (Njambi et al., 2021). There are four systematic reviews included in this literature review. Systematic reviews provide the best level of evidence and help add objectivity to this literature review and

include Galatzan and Carrington (2018), Müller et al. (2018), Raeisi et al. (2019), and Stewart and Hand (2017).

Although there are several strengths, these studies are not without their limitations. The main limiting theme noted in the included studies is the possibility of Hawthorne Effect. There is a possibility that the end results of a study may not be as accurate as it appears. The influence of an observer, in the case of handoffs, may result in the participant providing a more comprehensive patient handover than they would have normally. Ghosh et al. (2021), Leonardsen et al. (2019), Nasiri et al. (2021), and Park et al. (2017) all describe using an observer during the standardized handoff tool implementation phase. They all note there is a possibility the end results may have been affected by Hawthorne Effect.

The Iowa Model of Evidenced-Based Practice was developed in 1994 as a guide for clinicians to be able to evaluate and infuse research findings into patient care (Iowa Model Collaborative et al., 2017). This model was chosen because of its basic step by step approach that can help navigate clinicians through the evidence based process. The Iowa Model of Evidenced-Based Practice has multiple steps and decision points that compose this model. Steps in the Iowa Model of Evidenced-Based Practice include 1) identifying triggering issues and opportunities, 2) stating the question or purpose, 3) forming a team, 4) assembling, appraising, and synthesizing the body of evidence, 5) designing and piloting the practice change, 6) integrating and sustaining the practice change, and 7) disseminating results (Iowa Model Collaborative et al., 2017). Three decision points throughout the model help the clinician reexamine and analyze the practice change they are trying to accomplish and include deciding 1) Is this topic a

priority?, 2) Is there sufficient evidence?, and 3) Is change appropriate for adoption in practice? These decision points help identify any weaknesses or areas which may be lacking in the approach and allow for readjustment or modifications to the practice change seeking to be improved.

Each step and decision point will be completed throughout this quality improvement process. Identifying a triggering issue was determined through analyzing daily operations between the GI lab and PACU. One guaranteed operation conducted daily between these two departments is handover of patient information and procedure outcomes. After identifying the absence of a standardized handoff tool, this became a priority topic because handoff can be a crucial moment where miscommunication can arise and staff satisfaction can begin to dwindle; thus, the development of a purpose statement was conducted, and through a detailed literature search, appraisal, and review, this topic was determined to have sufficient evidence to move forward in identifying team members to address the issue. Since there is sufficient evidence found in the literature to support the use of a standardized handoff tool, the next step in The Iowa Model of Evidenced-Based Practice can begin. Through this next step, designing and piloting a practice change, the desired practice change will hopefully be achieved and integrated for permanent use in the GI and PACU departments. Dissemination to departments outside of GI and PACU will be determined based on project outcomes.

In summary, the use of informal and unstructured patient handoff during transfers of patient care from one nurse to another provides an opportunity for critical information to be omitted. This has led to malpractice claims, enormous malpractice costs, and unfortunately patient deaths. A standardized, formal, and structured handoff tool like

SBAR can have a dramatic impact on communication and staff satisfaction. An overall improvement in communication was seen with the implementation of a standardized handoff tool in the reviewed literature. Staff satisfaction was also shown to be improved overall through the implementation of a standardized handoff tool. A gap in the literature does exist according to Galatzan and Carrington (2018). The research in this study mainly focused on structure and consistency of handoff and not necessarily the content being exchanged. They suggest further studies incorporate looking at the content of handoff and also looking at how implementing a standardized handoff tool correlates to patient outcomes. The framework this project will be following is The Iowa Model of Evidenced-Based Practice and will help formulate a structured plan to carry out the step by step process.

Methods

Design

This quality improvement project utilized a descriptive observational design. The project looked at the rate of handoff tool completion by GI RNs. Anonymous pre-implementation and post-implementation staff survey data were compared to determine if perceived communication and nursing satisfaction improved in relation to the application of the new handoff tool used in tandem with the current patient data sheet.

Setting

This project took place within the GI department and Post-anesthesia care unit (PACU) located in a 250 bed urban hospital in a Midwestern metropolitan area. The GI department has two rooms equipped to conduct outpatient and inpatient esophagogastroduodenoscopies (EGD) and colonoscopies staffed with five GI staff

nurses and two GI technicians, as well as three primary gastroenterologists. The PACU has 22 beds and is staffed with eight PACU staff nurses. The GI department conducted roughly 1,500 procedures in 2021.

Sample

A convenience sample was used in this study. The sample included five GI staff nurses and eight PACU staff nurses. An average of 28 patients per week undergo EGDs and/or colonoscopies and all of the patient data sheets used for handoff that met criteria were included in analysis. No patient or staff identifiers were used. Inclusion criteria included staff nurses who work in the GI lab or PACU. Exclusion criteria included non-GI or PACU RNs.

Procedure

Pre-implementation surveys measuring perceived communication and nursing staff satisfaction (Appendix B) were distributed to staff for one week by sending an email to each nurse with a link attachment to the anonymous online survey, while also providing a QR code staff could scan using their phones taped to each individual GI and PACU nurses' locker for convenience. The online surveys were available on Qualtrics over one week for completion.

After the week of pre-implementation survey distribution was completed, education of the GI and PACU nurses on the new handoff tool was completed. The PACU nurses were educated during morning huddle, and the GI RN's were educated after the last GI case of the day. Once staff were educated, the new handoff tool (Appendix C) was implemented for four weeks. GI and PACU RN's were asked to keep current data sheets and new handoff tool together, and PACU was asked to place both

tools in a folder labeled “Handoff data tool” located at the PACU’s nursing station when they no longer need the information. Patient data sheets/handoff tools were collected on a daily basis and stored in the project directors secure locker for protection. Identifying patient data was redacted from the patient data sheets/handoff tools at the participating hospital and no patient information left the participating hospital grounds.

Post-implementation staff surveys (Appendix D) were again distributed to staff by sending an email to each nurse with a link attachment to the anonymous online survey, while also providing a QR code staff could scan using their phones taped to each individual GI and PACU nurses’ locker for convenience. The online surveys were available on Qualtrics over one week for completion to reassess perceived communication and nursing satisfaction following the four week trial of the revised handoff tool.

Data Collection/Analysis

A two-section online anonymous survey developed using Qualtrics was used to assess nurses’ perceived communication and satisfaction. The pre-implementation survey (Appendix B) contained four demographic questions, nine communication questions, and seven satisfaction questions. The post-implementation survey (Appendix D) contained two demographic questions, nine communication questions, and seven satisfaction questions. Questions three and four from the pre-implementation survey were omitted in the post-implementation survey as these questions are demographic questions and should remain unchanged. The communication and satisfaction items included a 5-point Likert scale using *strongly disagree*, *disagree*, *neutral*, *agree*, and *strongly agree* responses. The combined communication and satisfaction surveys were adapted from Wolaridge (2019)

and Funk et al., (2016), respectively. The adapted communication tool questions were modified to replace “OR”, “CRNA” “Anesthesia provider” and “pre-op” with “GI nurse” and replaced the department “ASC” with “GI/PACU department,” and two original questions were omitted because they were related to anesthesia providers. The adapted satisfaction tool questions were modified to replace “surgery team” and “Anesthesia team” with “GI team” and “PACU team.” The response “not applicable” was changed to “neutral”, and the original seventh question was omitted because it is not relevant to GI. Revised handoff tools were collected and completion rates for each item were calculated. Data was stored on a password-protected computer. Any identifiers on the patient data sheets and handoff tools were removed onsite at the participating hospital prior to entry into the data collection tool. Statistical analyses that were used included a two-tailed Mann-Whitney test to compare pre and post survey communication and satisfaction item responses. Descriptive statistics and Fisher Exact tests were used to evaluate the demographic variables for the pre and post staff surveys. Descriptive statistics were used to evaluate the handoff tool items.

Approval Processes

Written approval was obtained from the participating hospital’s ethics committee. Once approval from the setting was obtained, the University of Missouri- St. Louis (UMSL) Institutional Review Board reviewed the project and deemed it a quality improvement project not requiring IRB review prior to implementation. There were no anticipated risks or ethical considerations for this project

Results

Staff Survey

Demographics

Five GI nurses and eight PACU nurses participated in completing the pre and post survey questionnaires. The duration of employment in a given role ranged from less than one year to ten years or more. The majority of GI and PACU nurses had three years or less of experience in their current role while one staff member had between 3-6 years of experience in their role, one with 6-10 years of experience in their role, and one with 10 or more years of experience in their role (see Table 1). Almost all the GI and PACU nurses answered as having used a standardized guideline at a previous job, while three staff members have not used a standardized guideline before; furthermore, nine total nurses stated the past use of a standardized guideline improved communication between providers (see Table 1).

Table 1*Pre-Survey Data on Duration in Nursing Role and Past Use of Standardized Handoff Tool*

Survey Question	GI Nurses (n=5)	PACU Nurses (n=8)	Total (n=13)
Duration of employment in this role?			
Less than 1 Year	1	3	4
1 to 3 Years	3	3	6
3 to 6 Years	0	1	1
6 to 10 Years	1	0	1
10 Years or More	0	1	1
Used a standard guideline in the past?			
Yes	3	7	10
No	2	1	3
If you answered yes to number 3, did it improve communication?			
Yes	2	7	9
No	1	0	1
N/A	2	1	3

A Fisher Exact test was used to determine if any statistical significance existed between GI and PACU responses to having used a standardized guideline before; the Fisher Exact test was also used to determine whether or not each group thought it improved communication. The results of the Fisher Exact tests for these questions demonstrated no statistically significant differences to these questions (use of standardized guideline $p=0.510$ and improved communication $p=0.119$).

Communication

To evaluate whether the new handoff tool improved communication between GI and PACU, a two-tailed Mann-Whitney test was conducted to determine if there was a

statistical significance between the combined GI and PACU pre and post survey responses to the nine communication questions. Statistical significance was found in two of the combined question responses: does the current handoff meet the needs to continue caring for the patient and does the current handoff occur efficiently and without interruptions (see Table 2). The increase in mean rank from the pre survey to the post survey for both questions indicates that as a combined group more nurses either agreed or strongly agreed the new handoff tool met their needs to continue caring for their patient and the new handoff tool occurred more efficiently and without interruptions compared to the previous handoff tool.

Table 2*Two-Tailed Mann-Whitney Test for Communication Results for Both GI and PACU Nurses*

Survey Questions	Pre-Survey	Post-Survey	U	p
	Mean Rank	Mean Rank		
I believe I give a complete handoff report when transferring patients to the next area of care.	15.15	11.85	106.00	0.211
The use of a standardized handoff form can decrease the amount of communication errors between the GI nurse and PACU nurse.	14.77	12.23	101.00	0.309
The use of a standardized handoff form can decrease interruptions during handoff report.	12.42	14.58	70.50	0.437
Implementing the use of a standardized handoff form can improve the efficiency and clarity of communication in the GI/PACU departments.	14.00	13.00	91.00	0.697
Use of a standardized handoff form can decrease omission of pertinent patient information during handoff report.	15.19	11.81	106.50	0.201
I am usually satisfied with patient handoff report between caregivers.	12.65	14.35	73.50	0.531
The current handoff done in the GI/PACU department meets my needs to continue caring for the patient.	10.42	16.58	44.50	0.029*
The current handoff process in the GI/PACU department occurs efficiently and without interruptions.	9.96	17.04	38.50	0.010*
I am willing to use a standardized handoff form to improve communication, efficiency, and patient safety between the GI/PACU department.	15.50	11.50	110.50	0.123

Note. * $p < 0.05$

Since these two questions were found to be statistically significant within the combined pre and post survey analysis, a separate two-tailed Mann-Whitney test was

conducted for GI nurse responses only (see Table 3) and another two-tailed Mann-Whitney test was conducted for PACU nurse responses only (see Table 4) to compare each pre and post communication question within each group. There was no statistical significance found in the GI nurse responses to the nine communication questions pre and post survey (see Table 3). However, there was a statistical significance found for two of the questions in the PACU nurse responses. The question does the current handoff meet the needs to continue caring for the patient (see Table 4) showed an increase in mean rank from the pre survey to the post survey indicating that more PACU nurses either agreed or strongly agreed the new handoff tool met their needs to continue caring for their patient more so than the previous handoff tool.

The second question that was found to have a statistical significance was the PACU nurse response to the question does the current handoff occur efficiently and without interruptions (see Table 4). Again, the increase in mean rank from the pre survey to the post survey indicates more PACU nurses either agreed or strongly agreed the new handoff tool occurred more efficiently and without interruptions compared to the previous handoff tool. The seven other communication questions did not show any statistical significance between pre and post survey responses, and the mean ranks for five questions actually decreased from pre to post survey responses.

Table 3*Two-Tailed Mann-Whitney Test for Communication Results for GI Nurses*

Survey Questions	Pre-Survey	Post-Survey	U	p
	Mean Rank	Mean Rank		
I believe I give a complete handoff report when transferring patients to the next area of care.	6.50	4.50	17.50	0.134
The use of a standardized handoff form can decrease the amount of communication errors between the GI nurse and PACU nurse.	6.50	4.50	17.50	0.221
The use of a standardized handoff form can decrease interruptions during handoff report.	5.10	5.90	10.50	0.650
Implementing the use of a standardized handoff form can improve the efficiency and clarity of communication in the GI/PACU departments.	5.50	5.50	12.50	1.000
Use of a standardized handoff form can decrease omission of pertinent patient information during handoff report.	6.00	5.00	15.00	0.549
I am usually satisfied with patient handoff report between caregivers.	4.50	6.50	7.50	0.221
The current handoff done in the GI/PACU department meets my needs to continue caring for the patient.	5.00	6.00	10.00	0.572
The current handoff process in the GI/PACU department occurs efficiently and without interruptions.	4.20	6.80	6.00	0.093
I am willing to use a standardized handoff form to improve communication, efficiency, and patient safety between the GI/PACU department.	6.00	5.00	15.00	0.549

Note. * $p < 0.05$

Table 4*Two-Tailed Mann-Whitney Test for Communication Results for PACU Nurses*

Survey Questions	Pre-Survey	Post-Survey	U	p
	Mean Rank	Mean Rank		
I believe I give a complete handoff report when transferring patients to the next area of care.	9.25	7.75	38.00	0.460
The use of a standardized handoff form can decrease the amount of communication errors between the GI nurse and PACU nurse.	8.88	8.12	35.00	0.643
The use of a standardized handoff form can decrease interruptions during handoff report.	7.62	9.38	25.00	0.393
Implementing the use of a standardized handoff form can improve the efficiency and clarity of communication in the GI/PACU departments.	9.00	8.00	36.00	0.602
Use of a standardized handoff form can decrease omission of pertinent patient information during handoff report.	9.69	7.31	41.50	0.263
I am usually satisfied with patient handoff report between caregivers.	8.50	8.50	32.00	1.000
The current handoff done in the GI/PACU department meets my needs to continue caring for the patient.	5.88	11.12	11.00	0.019*
The current handoff process in the GI/PACU department occurs efficiently and without interruptions.	6.06	10.94	12.50	0.026*
I am willing to use a standardized handoff form to improve communication, efficiency, and patient safety between the GI/PACU department.	10.00	7.00	44.00	0.143

Note. * $p < 0.05$

Satisfaction

To evaluate whether the new handoff tool improved satisfaction between GI and PACU nurses, a two-tailed Mann-Whitney test was conducted to determine if there was a statistical significance between combined GI and PACU pre and post survey responses to the seven satisfaction questions. Statistical significance was found in two of the combined question responses: satisfied with current handover and is the handover comprehensive and clear. The difference in pre survey mean rank and post survey mean rank for the combined GI and PACU responses indicates more staff either agreed or strongly agreed to being more satisfied with the new handoff tool and handoff being more comprehensive and clearer compared to the previous handoff tool (see Table 5).

Table 5

Two-Tailed Mann-Whitney Test for Satisfaction Results for Both GI and PACU Nurses

Survey Questions	Pre-Survey	Post-Survey	U	<i>p</i>
	Mean Rank	Mean Rank		
Satisfied with current handover.	10.65	16.35	47.50	0.041*
Satisfied with GI teams	13.31	13.69	82.00	0.889
Satisfied with PACU teams	12.54	14.46	72.00	0.491
Opportunity to ask questions	13.77	13.23	88.00	0.846
Information about problems is provided	13.50	13.50	84.50	1.000
Currently timely and efficient	12.12	14.88	66.50	0.275
Overall, handover is comprehensive and clear	10.88	16.12	50.50	0.044*

Note. * $p < 0.05$

Since these two questions were found to be statistically significant within the combined pre and post survey analysis, a separate two-tailed Mann-Whitney test was conducted for GI nurse responses only (see Table 6) and another two-tailed Mann-

Whitney test was conducted for PACU nurse responses only (see Table 7) to compare each pre and post satisfaction question within each group; however, the satisfied with current handover question did not show a statistical significance in either GI or PACU tests alone; even though the analysis of the PACU separately did not show any statistical significance, this group approached significance with a $p=0.071$.

The handover is comprehensive and clear question did show a statistical significance in the separate PACU analysis (see Table 7). The increase in mean rank from the pre survey to the post survey indicates that more PACU nurses either agreed or strongly agreed the new handoff tool was more comprehensive and clearer compared to the previous handoff tool. The five other satisfaction questions did not show any statistical significance between pre and post survey responses. There was no statistical significance found in the GI responses to the seven satisfaction questions pre and post survey (see Table 6). Although no significant differences were found on any of the items from GI nurse responses, the satisfied with PACU team item approached significance at $p=0.058$.

Table 6*Two-Tailed Mann-Whitney Test for Satisfaction Results for GI Nurses*

Survey Questions	Pre-Survey	Post-Survey	U	p
	Mean Rank	Mean Rank		
Satisfied with current handover.	4.60	6.40	8.00	0.288
Satisfied with GI teams	5.10	5.90	10.50	0.661
Satisfied with PACU teams	3.80	7.20	4.00	0.058
Opportunity to ask questions	5.10	5.90	10.50	0.656
Information about problems is provided	5.80	5.20	14.00	0.729
Currently timely and efficient	4.80	6.20	9.00	0.432
Overall, handover is comprehensive and clear	5.30	5.70	11.50	0.811

*Note. *p<0.05***Table 7***Two-Tailed Mann-Whitney Test for Satisfaction Results for PACU Nurses*

Survey Questions	Pre-Survey	Post-Survey	U	p
	Mean Rank	Mean Rank		
Satisfied with current handover.	6.50	10.50	16.00	0.071
Satisfied with GI teams	8.69	8.31	33.50	0.860
Satisfied with PACU teams	9.00	8.00	36.00	0.626
Opportunity to ask questions	8.81	8.19	34.50	0.765
Information about problems is provided	8.06	8.94	28.50	0.653
Currently timely and efficient	7.62	9.38	25.00	0.332
Overall, handover is comprehensive and clear	6.00	11.00	12.00	0.015*

*Note. *p<0.05*

Documentation Completion

A total of 119 endoscopic procedures met criteria for inclusion in this quality improvement project consisting of 44 EGDs and 75 colonoscopies. Another aspect of this quality improvement project was to determine the completion rates of required documentation for a given tissue sample. Tissue biopsy sample documentation completion rates for EGDs and colonoscopies can be found in Table 8. The completion rate for sample location documentation was 100% for both procedures. Polyp sample documentation for both EGD and colonoscopy was 100% for sample location, sample type, and sample reason. Other not so common procedures done during either an EGD or colonoscopy could include dilation, placing clips/bands, or the use of injections. Fourteen EGD dilations were conducted and 100% had the size and type of dilator correctly identified. During one EGD, the specific use of clips/banding was correctly identified, and the location was correctly identified; however, the number placed was missing. On the other hand, one colonoscopy procedure that used clips/banding had a 100% completion rate in identifying the type, location, and number placed. There was only one procedure that used injections. During this colonoscopy, the injection location, injection type, and injection amount were 100% correctly identified.

Table 8*Tissue Biopsy Documentation Completion Rates by Procedure*

Documented Biopsies	EGD (n=61)		Colonoscopy (n=23)	
	Sample Type	Sample Reason	Sample Type	Sample Reason
Correctly Documented	49	55	21	21
Missing Documentation	12	6	2	2
Completion Rate	80%	90%	91%	91%

Note. n=Total number of biopsies for a given procedure

Discussion

The purpose of this quality improvement project was to implement, evaluate, and ultimately determine if there was an improvement in perceived nursing communication and nursing satisfaction between GI and PACU. In addition, the aim of the project was to have at least a 90% completion rate of documentation on the new handoff tool. In regard to the project question, there does appear to be evidence to support that the new handoff tool did indeed improve the perceived communication and satisfaction during patient handoff between GI and PACU nurses. The documentation completion rates for the most part either met or exceeded the 90% completion rate that was initially set. Unfortunately, the documentation of sample type during EGD procedures did not meet the 90% completion rate goal.

Analysis of the data showed the PACU nurses found the new handoff tool most helpful in meeting their needs to continue caring for the patient as well as occurring more efficiently and free from interruption. The PACU also seemed to find the new handoff

tool more comprehensive and clearer than the previously used handoff tool. These changes expressed through the data suggest the PACU's experience with the handoff tool had a more meaningful impact compared to GI's experience, despite the small sample size. The PACU is now able to receive report with a structured and formal handoff tool which has proven beneficial to the handoff process.

Five of the communication questions, however, had a decrease in mean rank from the pre to post survey. These decreases could be contributed to several factors. The previous way of handoff has always been conducted by writing down information on the back of the patient data sheets. The use of a separate GI specific handoff tool required the PACU nurses to adapt to the new way handoff was given to them. They also had to familiarize themselves with everything on the new handoff tool which may have been overwhelming. Similarly, the slight decreases in mean rank on a few of the satisfaction responses are also more than likely related to the reasons mentioned for the decreases in some of the communication responses.

Analysis of the data as a combined group did show a statistical significance in satisfaction with the new handoff tool. Although there was no statistical significance in either group alone for this question, the PACU nurse responses did approach significance with a $p=0.071$. The analysis of the data for GI nurses alone did not show any statistical improvement in perceived communication or satisfaction, but the satisfied with PACU team item did approach significance at $p=0.058$. This could mean the GI nurses felt the PACU nurses were more receptive to the handoff they gave using the new handoff tool compared to the old one. The GI nurse responses also had a few decreases in mean rank from both pre to post surveys. This again is probably related to the unfamiliarity with the

new handoff tool and having to change the way information is recorded during a procedure, which may have been overwhelming. Changing behaviors can be challenging and requires constant positive reinforcement to make the change permanent. Despite these obstacles, the handoff process was improved and this could result in a more complete handoff decreasing possible handoff errors; and even though the project did not have the intended outcomes from the GI nurses, it could be argued that the statistical significance of the PACU nurses' responses to the communication and satisfaction questions might be more vital because these are the nurses who are receiving the report and thus are responsible for the safety and well-being of the patient post-procedure.

Results from this quality improvement project did show similarities with the literature included in the review. For example, Stewart and Hand (2017) mentioned the consistent use of a SBAR tool can improve accuracy, clarity, sufficiency, and efficacy of the information exchanged. The responses from the PACU had a related outcome in increasing efficiency while also eliminating interruptions, which could provide a more efficacious and clearer handoff report. Furthermore, the PACU's responses to the communication questions determined the new handoff tool adequately met their needs to continue caring for their patients. This outcome is akin to the one found by Leonardsen et al.'s (2019) study citing participating nurses agreed all relevant information needed in patient handover had improved post-implementation of the standardized handoff tool. In regard to satisfaction, Nasiri et al. (2021) found an increase in satisfaction post-implementation of a structured handoff from 67.5% to 85.5%. The combined group responses to the satisfaction questions did show a statistical significance when comparing satisfaction with the previous handoff tool and satisfaction with the new handoff tool. In

addition, the responses from the PACU had determined the new handoff tool's comprehensiveness and clarity was statistically significant compared to the previous handoff tool.

Limitations

Limitations to this quality improvement project include small sample sizes in both the GI and PACU groups. These small sample sizes required a change in the statistical analyses used to analyze the pre and post survey communication and satisfaction item responses and demographic variables. The Mann-Whitney test was substituted for t-tests to compare pre and post survey communication and satisfaction responses. The Fisher Exact test was substituted for the Chi-square test to evaluate the demographic variables in the pre and post staff surveys. The four week time period for implementation is also a limitation of this project. Furthermore, one of the initial eight PACU nurses had left the organization during the implementation phase of the project; thus, a different PACU nurse participated in completing the post survey questionnaire.

Recommendations

Recommendations for further research could include implementing a longer study duration and larger sample size. In addition, another framework that might be well suited for this type of quality improvement project could be the PDSA cycle. Another cycle of data collection using the PDSA method could implement a longer study duration and seek out larger sample sizes at additional facilities. Furthermore, the next cycle could also try to combine the new handoff tool and the current patient data sheet into one concise document, as well as incorporate an assessments and recommendations section to make a true SBAR handoff tool. This cycle could also investigate the consistency of

documentation completeness between the new handoff tool, the pathology documentation report, and specimen labeling that is required for all samples.

Conclusion

The use of a standardized handoff tool has been shown in the literature to improve both nursing communication as well as nursing satisfaction when compared to non-structured, non-standardized handoffs. The improvement in both perceived communication and satisfaction was the driving force behind the development and implementation of this quality improvement project between the GI and PACU units. Although no statistical difference was determined in perceived communication and satisfaction pre and post survey among GI nurses, the newly developed handoff tool did show a statistical difference in perceived communication and satisfaction pre and post survey with the PACU nurses, indicating the need for change. This change, even though slight, proved beneficial to the PACU and enhanced the handoff process, which could provide better patient outcomes. Furthermore, the improvements seen within this quality improvement project are congruous with the outcomes in the literature.

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**Appendix A
Evidence Table**

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
<p>Galatzan, B. J., & Carrington, J. M. (2018). Exploring the state of the science of the nursing hand-off communication. <i>Computers, Informatics, Nursing</i>, 36(10), 484–493. https://doi:10.1097/CIN.0000000000000461</p>	Level I	<p>-To provide a comprehensive synopsis of the hand-off and the state of science on nurse-to-nurse communication using hand-offs.</p> <p><u>Outcome measures</u></p> <p>- Perceived increase in the effectiveness of the handoff communication</p> <p>Perceived increase in satisfaction with handoff procedure, organization, and overall content.</p>	<p>Varies depending on study but includes nurses, physicians, group interviews, patients.</p> <p>Settings include acute care units, women’s unit, medical units</p>	<p>Systematic Review</p> <p>-Conducted to identify relevant research studies addressing nurse to nurse handoff communication</p> <p>Studies published between 2007-2017.</p> <p>Databases used include CINAHL, PubMed, PsycINFO, MEDLINE, and Cochrane Library</p> <p>30 articles were kept for use</p> <p><u>Findings</u></p> <p>-6 themes were found among the 30 articles used in this review:</p> <p>1) Standardized Hand-off Tools</p>	<p>-Strengths: Systematic Review</p> <p>-Limitations: Studies in this review focus on structure and consistency of the handoff but not the content-GAP in LITERATURE</p> <p>No studies provide a direct correlation between implementing a standardized hand-off tool and improved patient outcomes.</p> <p>-<u>Recommendation</u> Further research on the content, not the structure or consistency, of the nurse to nurse communication would decrease errors but also</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				<p>2) Satisfaction With and Perceptions of the Hand-off</p> <p>3)Communication and Communication Patterns</p> <p>4) Electronic Tool Usage</p> <p>5)Memory/Cognition</p> <p>6) Hand-off Content</p> <p>This review also finds that there is little research on the content of handoff and an abundance of structure and consistency research, which does not provide a direct correlation between implementing a standardized hand-off tool and improved patient outcomes.</p>	<p>improve patient outcomes</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
<p>Ghosh, S., Ramamoorthy, L., & Pottakat, B. (2021). Impact of structured clinical handover protocol on communication and patient satisfaction. <i>Journal of patient experience</i>, 8, 1-6. https://doi.org/10.1177/2374373521997733</p>	Level VI	<p>-To assess the effect of standardized nursing handover protocol (SBAR) implementation on overall bedside nursing handover, patient satisfaction, and nurses' acceptance.</p> <p><u>Outcome measures</u> Patient satisfaction Nurses' acceptance Overall bedside nursing handover Compliance of nurses toward the implemented protocol at the end of the second and third months</p>	<p>Surgical Gastroenterology ward in India.</p> <p>10 nurses 52 patients</p> <p>2,696 observed handover processes</p>	<p>-Single-arm experimental trial Observation checklist and structured questionnaire</p> <p><u>Findings</u> -Nursing handover significantly improved after standardized protocol was implemented</p> <p>-Patient satisfaction regarding nursing handover significantly improved after standardized protocol was implemented</p> <p>-Good compliance from nurses at the immediate postintervention period and at month 2 and 3.</p>	<p>-Strengths: Study able to show positive effect on bedside nursing handover.</p> <p>-Study was able to show increased patient satisfaction after the implementation of the SBAR protocol</p> <p>-Limitations: Study was conducted in one ward only</p> <p>-Results not generalizable</p> <p>-Possible Hawthorne Effect related to participant observation</p> <p><u>Recommendation</u> Implement study across multiple wards/hospitals to increase generalizable results</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
<p>Leonardsen, A.C., Klavestad Moen, E., Karlsøen, G., & Hovland, T. (2019). A quantitative study on personnel's experiences with patient handovers between the operating room and the postoperative anesthesia care unit before and after the implementation of a structured communication tool. <i>Nursing Reports</i>, 9(1), 1–5. https://doi.org/10.4081/nursrep.2019.8041</p>	Level VI	<p>Investigate involved personnel's experiences with the quality of patient handovers between the operating room and the postoperative anesthesia care unit (PACU) before and after implementation of a structured tool for communication.</p> <p>Outcome measures Quality of communication of patient handoffs between OR and PACU</p> <p>Personnel's experiences were improved in relation to handovers that followed a logical structure, available documentation was used and all relevant information was communicated</p>	<p>Hospital in southeastern Norway</p> <p>Consecutive sampling method was used</p> <p>PACU RNs, CRNAs, Surgical RNs, CCRNs</p> <p>116 participated pre-implementation</p> <p>90 post-implementation</p>	<p>Cross-sectional, Quantitative design</p> <p>Pre and post questionnaire</p> <p>Implementation of ISBAR between OR and PACU</p> <p>Findings</p> <p>-Patient handover quality increased from 82.6% to 93.3% post implementation of ISBAR (<0.001) *Independent samples t-test was used.</p> <p>-All relevant information is selected and communicated 87.6% to 97.8% (<0.001) post implementation of ISBAR</p> <p>Results indicate that both transferring and receiving personnel had more positive</p>	<p>Limitations: Relatively small sample sizes</p> <p>Different personnel were included in the pre- and post-implementation phases</p> <p>Groups mainly women, few men</p> <p>Took place in one hospital</p> <p>Did not compare the ISBAR tool with other approaches to improving patient handovers</p> <p>Possible that the positive changes were due to the Hawthorne effect</p> <p>Strengths: Results indicate that implementation of</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				experiences with patient handovers after implementation of the ISBAR tool	<p>a structured tool for communication in patient handovers, such as the ISBAR, may improve quality and safety in handovers of patients between the operating room and the PACU.</p> <p>Recommendations: Larger sample size</p> <p>Try to make group more heterogenous (more men)</p> <p>Could conduct post implementation study at later point (>6 mos)</p>
Müller, M., Jürgens, J., Redaelli, M., Klingberg, K., Hautz, W. E., & Stock, S. (2018). Impact of the communication and patient hand-off tool SBAR on patient safety: A systematic review. <i>BMJ Open</i> , 8(8), 1-10. https://doi.org/10.1136/bmjopen-2018-022202	Level I	<p>Purpose of this systematic review is to summarize the available evidence for and evaluate the impact of the implementation of SBAR in clinical settings on patient safety as measured by the incidence of adverse events.</p> <p>Outcome measures Varied depending on study but include adverse patient/drug events, patient fall-related adverse events, unplanned ICU admissions,</p>	<p>-Setting consisted of hospitals, rehabilitation center and nursing homes.</p> <p>Participants: Nurses and physicians and ranged from 38-155 staff depending on the study.</p>	<p>Systematic Review of articles on the topic of SBAR and articles were searched in PUBMED, EMBASE, CINAHL, Cochrane Library, and PsycINFO in 2017.</p> <p>Criteria used to select articles include: (1)</p>	<p>Strengths: systematic review was conducted using the Cochrane Collaboration standards</p> <p>-Reliability was established by using two independent reviewers - Use of 5 well-known databases</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
		death/cardiac arrest, anticoagulation-related adverse events	-Study length depended on individual studies and ranged from 2-24 months	<p>SBAR was implemented into clinical routine, (2) the investigation of SBAR was the primary objective and (3) at least one patient outcome was reported.</p> <p>-11 articles were ultimately used</p>	<p><u>-Limitations:</u> Studies including SBAR as part of a larger quality improvement initiative that did not measure the incidence of adverse effects were not used in this study, which could have resulted in missed evidence for improvement of patient safety using SBAR</p> <p>-the nature of the heterogeneity of the data impeded the ability to test for publication bias or perform a meta-analysis</p> <p><u>Recommendation</u> Include studies where SBAR did not measure the incidence of adverse effects in larger quality improvement initiatives.</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
<p>Nasiri, E., Lotfi, M., Mahdavinoor, S., & Rafiei, M. (2021). The impact of a structured handover checklist for intraoperative staff shift changes on effective communication, OR team satisfaction, and patient safety: a pilot study. <i>Patient Safety in Surgery</i>, 15(25), 1-9. https://doi.org/10.1186/s13037-021-00299-1</p>	<p>Level III</p>	<p>-Conducted to evaluate the use of a structured checklist during shift delivery at the time of surgery and to determine this intervention would reduce the percentage of information omission and increase the communication quality of handover process and also see if team satisfaction increased.</p> <p>Outcome measures</p> <p>-Checklist's effect on quality of patient handoff and omission of information</p> <p>-Checklist's effect on staff satisfaction</p>	<p>-Operating room wards in two teaching hospitals from February 20th to November 21st, 2020.</p> <p>-Scrub and circulator members of the surgical team</p> <p>- 40 total participants</p> <p>-Total of 120 handovers were observed and evaluated</p>	<p>-Control intervention pilot study -The level of evidence for this study was Level 3:</p> <p><i>“Evidence obtained from well-designed controlled trials without randomization”.</i></p> <p>-Evaluating the effect of using a checklist on handover quality after the intervention in two groups: with and without checklist.</p> <p>- Examine quality of handover between scrub and circular personnel in terms of handover duration and quality, omission of information and improvement in OR staff satisfaction</p> <p>Findings</p>	<p>Strength: Study able to show an increase in satisfaction, decrease in omission of data, and overall improvement in communication</p> <p>Limitations: -Small sample size -Hawthorne Effect that could have influenced the results -COVID19 pandemic could have affected the research process</p> <p>Recommendations: -Increase sample size to obtain better conclusions and more accurate p-values -Future studies could use a camera to reduce Hawthorne effect</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				<p>*Overall improved communication -Handover process quality ^Overall score increased (checklist) after intervention for scrub role Group C → 6.5 +/- 0.9 to 7 +/- 1.5 (p<0.02) after intervention</p> <p>^Circulating role no sig. difference between before and after intervention (p<0.08)</p> <p>^ most significant increase in areas such as communication skills, organization, and professionalism</p> <p>*Handover content quality -No significance between circulators and scrub handover in group B before the intervention.</p>	

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				<p>**Decrease in information omission from 19.5% to 12.1% between scrub roles (p<0.00) And from 16.8 to 14.1% between circulators (p<0.03).</p> <p>-Overall mean percentage of handover satisfaction increased from 67.5% before the intervention to 85.5% after the intervention, which was also statistically significant (p < 0.00)</p>	
<p>Njambi, M., Rawson, H., & Redley, B. (2021). A brief intervention to standardize postanesthetic clinical handoff. <i>Nursing & Health Sciences</i>, 23(1), 219-226. https://doi.org/10.1111/nhs.12803</p>	Level VI	<p>The aim of this study was to explore the feasibility and acceptability of using a brief intervention to introduce a tool to standardize interprofessional PACU handoff processes between anesthetists and nurses, thereby supporting desired nurses' safety behaviors.</p> <p><u>Outcome measures</u></p>	<p>640 bed tertiary teaching and research hospital in Melbourne, Australia.</p> <p>20 bed PACU unit.</p> <p>Convenience sample of 27 nurses were used</p>	<p>Pre and post- design used to collect observation and interview data before and after using a brief intervention tool to promote safety behaviors during handoff in the PACU</p> <p><u>Findings</u></p>	<p><u>Strengths:</u> Integrates recommended best practices for both procedural and content aspects into one standard handoff process</p> <p>-study demonstrates how a standardized</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
		<p>-Desired handoff behaviors consistent with the tool to standardize handoffs</p> <p>-Nurse handoff communication behaviors expected to indicate nurses were empowered to advocate for patient safety.</p>		<p>Findings suggest the implemented standardized handoff tool improved nurse experience, and nurse handoff behaviors related to patient identification and identification of allergies, consistent with advocating for patient safety.</p> <p>-Study demonstrated the acceptability and feasibility of using a standardized handoff tool</p>	<p>handoff tool can be implemented using a simple visual aid with brief training for rapid adoption and consistent implementation</p> <p>-study showed promotion of comprehensive handoff content by utilizing the standardized handoff tools</p> <p><u>-Limitations:</u> Convenience study sample</p> <p>-Conducted at single site</p> <p>-Brief nature of the intervention to introduce nurses to the PACU hand off</p> <p><u>Recommendation</u> Larger sample size and possibly conduct study in different areas of the hospital or other hospitals to help results</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
					become more generalizable.
<p>Park, L. S., Yang, G., Tan, K. S., Wong, C. H., Oskar, S., Borhardt, R. A., & Tollinche, L. E. (2017). Does checklist implementation improve quantity of data transfer: An observation in postanesthesia care unit (PACU). <i>Open Journal of Anesthesiology</i>, 7(4), 69–82. https://doi.org/10.4236/ojanes.2017.74007</p>	Level VI	<p>Purpose is to investigate the use of a checklist to improve quantity of data transfer during handoffs in the PACU.</p> <p>Outcome measures Quantity of reported handoff items during 60 patient handovers pre- and 60 patient handovers post-implementation of checklist</p>	<p>Memorial Sloan Kettering Cancer Center PACU. June 13, 2016-July 15th, 2016</p> <p>Nurses, PACU midlevel providers, anesthesia staff, and surgical staff</p>	<p>Cross-sectional observational study</p> <p>12 item checklist was used</p> <p>5 week study length Observers were physically present at all observed handoffs between June 16th and July 15th, 2016, from 10am to 5pm.</p> <p>Overall composite scores</p> <p>Overall department scores (Surgical and Anesthesia)</p> <p>Findings Surgical and anesthesia reports increased in the average report of 8.7 items from pre-implementation period to 10.9 post-implementation</p>	<p>-Strengths: Study was able to show that the overall quantity of data transfer during PACU handoff was improved -Also, able to show a decrease in medical errors -Able to show that using a checklist can minimize omission of information during PACU handoff</p> <p>-Limitations: Hawthorne effect was present which may have affected the data transfer in the control group</p> <p>Data is based on the local context and exact results cannot be generalized for other institutions without further multicenter investigation</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				Improvements in anesthesia staff report with intervention improved the overall handoff data transfer	-Recommendation Implement this study or study components in other organizations to prove a more generalizable result
Raeisi, A., Rarani, M. A., & Soltani, F. (2019). Challenges of patient handover process in healthcare services: A systematic review. <i>Journal of Education and Health Promotion</i> , 8(173), 1-6. https://doi.org/10.4103/jehp.jehp_460_18	Level I	To identify challenges during handoff report concerning safety and quality of health services Outcome measures Data collected from this study include handover communication challenges, importance of coordination between incoming and outgoing nurses, use of a checklist in handover and applying the checklist for intrahospital patient safety, poor management and its impact on the patient handover process, and time management also was reported as a challenge to patient handover process.	Study was conducted during February 2018 to review all published articles about challenges of patient handover. Articles searched ranged from 2010-2018. 20 articles were selected for review.	Systematic Review: Conducted using the Preferred Reporting Item for Systematic Reviews and Meta-analyses guideline. Databases used include ProQuest, Ovid, Doaj, Magiran, SID, Scopus, Science Direct, PubMed, and ISI Findings Results of the study indicated that there are various challenges in handover processes and the most important challenge in handover process which leads to reduced	-Strengths: Systematic review, use of multiple databases (10), use of COSMIN's criteria to appraise the articles used, some articles reviewed were systematic reviewed articles -Limitations: Some articles were of lower quality of evidence such as descriptive, case, and cohort studies Recommendations: This article did not explicitly have a section pertaining to the strengths, limitations, and recommendations. It

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				<p>patient safety is the lack of effective communication</p> <p>- Lack of communication among incoming shift nurse and outgoing shift nurse in handover process is one of the main causes of reduced safety and quality of services and patient dissatisfaction</p>	<p>would be nice to have this section at the end to wrap up the article</p>
<p>Stewart, K. R., & Hand, K. A. (2017). SBAR, communication, and patient safety: An integrated literature review. <i>Medsurg Nursing</i>, 26(5), 297-305.</p>	<p>Level I</p>	<p>To analyze the literature addressing the Situation-Background-Assessment-Recommendation (SBAR) framework to determine its effectiveness during patient handoff communication between healthcare providers.</p> <p>Outcome measures SBARs impact on communication and patient safety</p>	<p>Varies depending on study. Examples include hospital surgical wards in Sweden, suburban hospital in mid-southern U.S., medical and ICU wards in Belgium, pediatric ER in NY.</p> <p>Samples include a variety of individuals from nurses, physicians, nursing students, patients, NPs.</p> <p>Number of participants ranging from 18 to over 500.</p>	<p>Systematic Review of literature from PubMed, CINAHL Complete, and Cochrane Library databases.</p> <p>Peer-reviewed, English language articles published between 2012-2017 were used. 21 articles were kept for this systematic review.</p> <p>Findings Four themes were identified in this study:</p>	<p>Strengths: Article was a systematic review -At least one article was a RCT</p> <p>-Limitations Majority of articles reviewed were not controlled trials. Thus, a causation cannot be concluded between the use of SBAR and the proposed variables.</p> <p>-Recommendation</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				<p>1) Use of SBAR Creates a Common Language for Communication of Key Patient Care Information</p> <p>2) Use of SBAR Increases Confidence of Speaker and Receiver of Handoff Report</p> <p>3) Use of SBAR Improves Efficiency, Efficacy, and Accuracy of Handoff Report</p> <p>4) Use of SBAR Improves the Perception of Effective Communication and Is Well Received Among Healthcare Staff</p>	<p>More controlled trials need to be conducted to assess the effects of SBAR use on communication and safety.</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
<p>Wich, B. J., Escalona, M., Bowling, J. E., & Santos, A. L. (2021). A performance improvement project to improve hand-off communication documentation within the surgical services department. <i>Nursing & Health Sciences Research Journal</i>, 4(1), 46-53. https://doi.org/10.55481/2578-3750.1099</p>	Level VI	<p>Improve the documentation of hand-off report which was the measurement used by the department to monitor the quality of hand-off reports within the department.</p> <p>Outcome measures Percentage of handoff completeness from the OR and PACU nurses</p>	<p>Acute care hospital in the Southeastern U.S.</p> <p>Participants were nurses in the surgical services department: OR PACU Pre-OP Endoscopy (GI)</p>	<p>Plan-Do-Check-Act model</p> <p>Revised handoff implemented in March 2021</p> <p>Improvement of SBAR form was completed with addition of multiple patient information including types of isolation, bigger font, better location of isolation on form, height and weight were added</p> <p>Findings OR percentage of completeness of handoff in January 2021 0% before new handoff tool.</p> <p>Multiple increases each month with the noticeable improvement in March (76%) after implementation of new</p>	<p>-Strengths: Able to show importance of a standardized handoff tool</p> <p>Able to improve handoff report documentation from 0% to 90% in the department</p> <p>-Limitations: Only implemented in one hospital in the US</p> <p>-Conducted under high stress times during the Covid pandemic</p> <p>-Recommendation Implement in a variety of hospitals</p> <p>Implement during a less stressful time</p>

CITATION	Level of Evidence	PURPOSE / BACKGROUND	PARTICIPANTS / SETTING	METHODS / DESIGN	RESULTS / LIMITATIONS / RECOMMENDATIONS
				SBAR tool and 90% in May PACU: 21% completeness in January and February Increased to 78% in May and June 2021	

Appendix B
Provider Communication and Satisfaction Pre-implementation Survey

1. Identify your role at this hospital facility. Please circle response
 - a. GI RN
 - b. PACU RN

2. How long have you been in this role at this hospital?
 - a. Less than 1 year
 - b. At least a year but less than 3 years
 - c. At least 3 years but less than 6 years
 - d. At least 6 years but less than 10 years
 - e. 10 years or more

3. Have you ever used a standardized guideline or form for patient handoffs anywhere you've worked?
 - a. Yes
 - b. No

4. If you answered yes to number 3, do you believe the guideline or form improved communication between providers?
 - a. Yes
 - b. No
 - c. Not Applicable

For the next section of questions please circle the response which corresponds with your level of communication agreement:

5. I believe I give a complete handoff report when transferring patients to the next area of care.
 - a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

6. The use of a standardized handoff form can decrease the amount of communication errors between the GI nurse and PACU nurse.
 - a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

7. The use of a standardized handoff form can decrease interruptions during handoff report.
 - a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

8. Implementing the use of a standardized handoff form can improve the efficiency and clarity of communication in the GI/PACU departments.
 - a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

9. Use of a standardized handoff form can decrease omission of pertinent patient

information during handoff report.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

10. I am usually satisfied with patient handoff report between caregivers.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

11. The current handoff done in the GI/PACU department meets my needs to continue caring for the patient.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

12. The current handoff process in the GI/PACU department occurs efficiently and without interruptions.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

13. I am willing to use a standardized handoff form to improve communication, efficiency, and patient safety between the GI/PACU department.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

For this section of questions please circle the response which corresponds with your level of satisfaction agreement:

14. Satisfied with current handover.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

15. Satisfied with GI teams

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

16. Satisfied with PACU teams

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

17. Opportunity to ask questions

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

18. Information about problems is provided

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

19. Currently timely and efficient

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

20. Overall, handover is comprehensive and clear

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

Appendix C

Handoff Tool

<u>Procedure:</u> EGD	Check box if NO SAMPLES or other procedures are done <input type="checkbox"/>	Patient Sticker				
SAMPLES (Circle as appropriate)						
<p><i>Sample 1</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 2</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 3</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 4</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 5</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 6</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>	<p><i>Sample 7</i></p> <p><u>Location</u></p> <p>*Gastric(stomach) -Antral -Fundal</p> <p>*Esophageal -Proximal -Mid -Distal</p> <p>*GE Junction *Irregular Z-line *Duodenal *Small bowel</p> <p><u>Sample Type</u> Biopsy Polyp (x___)</p> <p><u>Sample Reason</u> r/o EOE r/o Barrett's r/o Esophagitis r/o H. Pylori r/o Ulcer r/o Celiac/sprue Hx of _____ Hx of _____ TIME: _____</p>
<p style="text-align: center;"><u>Dilation</u></p> <p style="text-align: center;">Size</p> <p>(Circle one)</p> <p>Maloney:</p> <p>Savary:</p> <p>Balloon:</p>	<p style="text-align: center;"><u>Clips OR Banding (circle one)</u></p> <p style="text-align: center;"><u>Location:</u></p> <ul style="list-style-type: none"> • • • • <p style="text-align: center;"><u>Number placed (circle):</u> 1 2 3 4 5 6 7 8 9 10</p>	<p style="text-align: center;"><u>Injections</u></p> <p><u>Location:</u></p> <p><u>Type (circle):</u> Epinephrine Tattoo</p> <p><u>Amount (mL):</u></p>				
<u>Miscellaneous:</u>						

<u>Procedure: Colonoscopy</u>		Check box if NO SAMPLES or other procedures are done <input type="checkbox"/>	Patient Sticker			
SAMPLES (Circle as appropriate)						
<p style="text-align: center;"><i>Sample 1</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 2</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 3</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 4</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 5</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 6</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 7</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o Micro colitis r/o Ischemic colitis r/o U.C r/o Crohn's r/o _____ r/o _____ Hx of _____ Hx of _____ TIME: _____</p>
<p style="text-align: center;"><i>Sample 8</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o _____ r/o _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 9</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o _____ r/o _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 10</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o _____ r/o _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><i>Sample 11</i></p> <p style="text-align: center;"><u>Location</u></p> <p>*Cecal *Ascending *Descending *Transverse *Sigmoid *Rectal *Hepatic Flexure *Splenic Flexure *Random * ____ cm</p> <p><u>Sample Type</u> Biopsy Polyp (x __)</p> <p><u>Sample Reason</u> r/o _____ r/o _____ Hx of _____ TIME: _____</p>	<p style="text-align: center;"><u>Clips OR Banding (circle one)</u></p> <p style="text-align: center;"><u>Location:</u></p> <ul style="list-style-type: none"> • • • • <p style="text-align: center;"><u>Number placed (circle)</u> 1 2 3 4 5 6 7 8 9 10</p> <p><u>Miscellaneous:</u></p>	<p style="text-align: center;"><u>Injections</u></p> <p style="text-align: center;"><u>Location:</u></p> <p style="text-align: center;"><u>Type (circle):</u> Epinephrine Tattoo</p> <p style="text-align: center;"><u>Amount (mL):</u></p>	

Appendix D
Provider Communication and Satisfaction Post-implementation Survey

1. Identify your role at this hospital facility. Please circle response

- a. GI RN
- b. PACU RN

2. How long have you been in this role at this hospital?

- a. Less than 1 year
- b. At least a year but less than 3 years
- c. At least 3 years but less than 6 years
- d. At least 6 years but less than 10 years
- e. 10 years or more

For the next section of questions please circle the response which corresponds with your level of communication agreement:

3. I believe I give a complete handoff report when transferring patients to the next area of care.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

4. The use of a standardized handoff form can decrease the amount of communication errors between the GI nurse and PACU nurse.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

5. The use of a standardized handoff form can decrease interruptions during handoff report.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

6. Implementing the use of a standardized handoff form can improve the efficiency and clarity of communication in the GI/PACU departments.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

7. Use of a standardized handoff form can decrease omission of pertinent patient information during handoff report.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

8. I am usually satisfied with patient handoff report between caregivers.

- a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

9. The current handoff done in the GI/PACU department meets my needs to continue caring for the patient.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

10. The current handoff process in the GI/PACU department occurs efficiently and without interruptions.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

11. I am willing to use a standardized handoff form to improve communication, efficiency, and patient safety between the GI/PACU department.

a. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

For this section of questions please circle the response which corresponds with your level of satisfaction agreement:

12. Satisfied with current handover.

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

13. Satisfied with GI teams

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

14. Satisfied with PACU teams

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

15. Opportunity to ask questions

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

16. Information about problems is provided

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

17. Currently timely and efficient

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree

18. Overall, handover is comprehensive and clear

b. Strongly Disagree b. Disagree c. Neutral d. Agree e. Strongly Agree