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Utilization of Morning Report by Acute Care Surgery Teams: Results from a Qualitative Study

Patricia L. Pringle, MD[1], **Courtney Collins, MD**[2], and **Heena P. Santry, MD MS**[2,3]

[1] University of Massachusetts Medical School

[2] Department of Surgery, University of Massachusetts Medical School

[3] Department of Quantitative Health Sciences, University of Massachusetts Medical School

Abstract

Background—The rigor of hand-offs is increasingly scrutinized in the era of shift-based patient care. Acute Care Surgery (ACS) embraced such a model of care; however, little is known about hand-offs in ACS programs.

Methods—We conducted 18 open-ended interviews with ACS leaders representing diverse geographic and practice settings. Two independent reviewers analyzed interviews using an inductive approach to elucidate themes regarding use of morning report (NVivo qualitative analysis software).

Results—12/18 respondents reported a morning report but only 6/12 included attending-to-attending hand-offs. 1/12 incentivized attendings to participate, 2/12 included nursing staff, and 2/12 included physician extenders. Cited benefits of morning report were safe and effective information exchange (2/12), quality improvement (2/12), multidisciplinary discussion (1/12), and resident education (2/12). 3/12 respondents cited time commitment as the main limitation of morning report.

Conclusions—Morning report is under-utilized among ACS programs; however, if implemented strategically, it may improve patient care and resident education.

Keywords

Morning report; Acute Care Surgery (ACS); Performance Improvement; Communication; Medical Team Systems

Introduction

The rigor of patient hand-offs has come under increasing scrutiny as more and more providers adopt shift-based models of care[(1)]. The advent of resident duty hour restrictions has increased the total number of patient hand-off interactions and has brought the issue of sign-out communication to the forefront of national attention[(1-3)]. The impact of inter-physician communication on the quality of patient care has been well documented[(1-10)].

Corresponding Author: Dr. Heena P. Santry Department of Surgery Room S3-727 55 Lake Avenue North Worcester, MA 01655 Office: 508-856-1168 Fax: 508-856-4224 heena.santry@umassmemorial.org.

Duty hour restrictions have challenged training programs to educate their residents in less time while maintaining continuity of care for patients[1-4, 6-9]. While the bulk of patient hand-off literature is generated from internal medicine and emergency medicine departments, the duty hour restrictions have forced surgery departments to consider measures to consolidate trainee education time and expedite patient hand-offs[1, 3, 8, 10-16]. In the context of duty hour restrictions, some general surgery programs have shown that morning report can be an opportunity to effectively educate residents as well as transfer care of patients[2, 8].

Meanwhile, Acute Care Surgery (ACS) has emerged as a new general surgery subspecialty, embracing shift-based care for patients suffering from injuries as well as non-trauma surgical emergencies (NTSEs). Modeled after nearly 40 years of evidence on team-based trauma care, ACS has been shown to improve operating room utilization and departmental revenues while reducing emergency room wait times, time to operation, length of stay and mortality for NTSEs without adverse effects on injured patients[17-26]. However, little is known about the effect of the ACS model on patient hand-offs.

Anecdotally, trauma programs have long-utilized morning report to present new patients and discuss existing patients. Thus, it is possible that some of the benefits of the ACS model for patients with NTSEs are due to improved patient hand-offs and enhanced inter-physician communication during morning report. Given the absence of data on whether or not the practice of morning report has been carried forward in this new surgical subspecialty, we undertook a qualitative study to describe the degree to which centers with ACS programs are utilizing this tool and the perceived advantages and disadvantages of it. We hypothesized that morning report utilization within the new model of ACS would vary by practice environment and by whether or not trauma and NTSE patients were cared for in combined or separate clinical teams.

Methods

We conducted a qualitative study to describe the utilization of morning report in ACS models implemented in varied geographic locations and practice settings.

Participants

A purposive sampling method was used to recruit senior leaders known to be working at hospitals that had implemented an ACS model. Potential respondents were selected from the ranks of national organizations or recommended by colleagues. Fourteen of eighteen participants were current section chiefs or division chiefs for trauma surgery and/or emergency general surgery, two participants were department chairs and two were senior surgeons at their site. Specific geographic regions (Mid-Atlantic, Midwest, New England, Northeast, South, West) and practice types (Community, Public/Charity, University) were targeted in order to ensure a diversity of opinion for comparison such that each region contained a participant from each of the three types of practice settings. Potential respondents were contacted by email and asked to participate in a face-to-face interview about how they practice ACS at their hospital for a qualitative research study on ACS practice patterns. Strict measures to ensure confidentiality were implemented and described to participants. An agreed upon date and time for the interview was considered a waiver of written informed consent. This study was deemed exempt from full review by the IRB of the University of Massachusetts Medical School.

Interviews

One investigator (HPS) created the semi-structured interview based on clinical experience and extensive literature review. The interview addressed a range of topics concerning ACS practice patterns: infrastructure, communication, team structure, evolution of ACS, and resources (see Appendix A). The interview was piloted on senior ACS surgeons at centers familiar to the investigator and altered in an iterative fashion. Between June 2011 and December 2011, this investigator conducted eighteen in-person interviews of these ACS leaders who had previously agreed to participate. The interview questions were open-ended and the interviewer asked for further explanation whenever clarification was needed. Interviews took from 19 to 84 minutes to complete. Interviews were audiotaped with participant's consent, transcribed and imported into NVivo 10.0 (QSR International, Melbourne Australia) software for qualitative data analysis.

Data Analysis

In conducting our interview analysis, we relied heavily on the qualitative research principles of grounded theory, also known as the inductive approach[27]. The principle of reflexivity was utilized to better understand our preconceptions to decrease bias in both the interviewing and data analysis stages[28]. Also, we utilized the strategy of investigator triangulation, whereby team members from diverse backgrounds analyze the raw data in order to minimize the personal or disciplinary bias of a single researcher[29].

In the first step of analysis, two investigators (PLP and CEC) independently reviewed each interview transcript. As concepts emerged from the data, the readers used NVivo to code specific lines of text to their corresponding concepts (i.e. open coding). The two initial readers met to compare codes, resolve discrepancies, and review the taxonomy of codes. The constant comparative method of qualitative analysis[30] was utilized to compare coded segments of text in order to expand on existing concepts and identify new themes. Codes were refined until we reached theoretical saturation with a final taxonomy of 50 codes. This final taxonomy of was applied to all of the transcripts by the two initial coders, after which there was found to be 98% intercoder agreement. In the second step of analysis, a third investigator (HPS) reviewed disputed responses until 100% agreement was reached.

A relational analysis was conducted using NVivo to examine relationships between the themes that were derived from the data. A dataset was created containing content relevant to communication within the ACS models studied and their practice setting (geographic location and practice type) and clinical structure (combined clinical team for trauma and EGS patients vs. separate clinical teams for these two types of patients). This data was imported to STATA 10 (Stata Corp, College Station, TX) and associations between these attributes and themes surrounding utilization of morning report were measured using univariate measures of association (Chi^2 and Fisher exact tests) as indicated.

Results

Programs with Morning Report

Twelve of the eighteen respondents report that their Acute Care Surgery program conducts a morning report. No program characteristics predicted those with a morning report and those without (see figures 1a, 1b, and 1c).

Structure of Morning Report

Of the twelve ACS programs with a morning report, eight respondents specifically mentioned that attendings are present. Six respondents reported that both the daytime attending coming onto the service and the overnight attending signing off the service

participate in morning report. One of those six programs sends the overnight resident home before morning report while the overnight attending stays.

Two ACS programs were noted to have unique strategies around attending participation. One respondent spoke about incentives for attendings to attend morning report: “Everything has sign-in sheets. We monitor the number of times you have been there. We actually incentivize our faculty financially to make sure that there are certain goals [to attend hand offs].” Another respondent noted that morning report is mandatory: “All the faculty are expected to be present at all of the hand offs. Fellows are present. All faculty mandatory. Mandatory for the guy coming on call or coming off call, but everybody shows up.”

One program specifically removes the chief residents from morning report to afford them more operative time: “[The chief resident] already has pretty much all their intel and... we've unburdened the chief from the morning report because we really want them operating.”

Most respondents did not mention participation of non-physicians in their morning report. However, two respondents mentioned the inclusion of ICU and floor nursing staff, and two respondents mentioned the inclusion of mid-level staff, such as PAs. One program stood out as unique for involving in morning report, “nurse managers and/or charge nurses from the wards, OT/PT, nutrition, pharmacy, social work, every single day... We have case managers and social workers there to help us with discharge planning. We have our PI manager and our trauma program manager there to capture PI events and incidents.”

While most respondents did not mention surgical subspecialties with regards to their morning report structure, two programs reported an open invitation to surgical subspecialties: “We have invited representatives of the orthopedic and other surgical teams to come along and they usually only come along when there are significant issues or so.” And another program noted, “we have one of the PAs from orthopedics, who attends every day. The chairman of orthopedics and his residents come on Tuesday to touch base about plans for the week for the orthopedics.”

No significant relationship was found between combined trauma and EGS teams versus separate teams and the structure of morning report. Also, no significant difference was found in the morning report structure by the practice type or geographical location. Although we did not find an association between combined trauma/EGS clinical teams or separate trauma and EGS clinical teams and use of morning report, separate teams appear to be conducting a single signout. For example, one respondent from a center with separate teams said, “both Trauma attendings have to be there at 7:00. The emergency surgery attending makes an appearance by 7:30... Where we need the emergency surgery attending is about 7:15 to 7:30. So what we say is you can stop by there. If you cannot be there, if you have got to be in the operating room, you have to send your senior resident and your junior resident because you have got to get some information.”

Two ACS programs were unique in their use of tools to facilitate morning report. One program used a computer-based tool in order to improve continuity of care: “The residents have a program where they upload data for handing off... Especially for the weekends, the weekends are... a big opportunity for lack of continuity. Especially if you get like a ---------- [omitted to protect center identity] guy and then another per diem guy coming in. There's a lot of opportunity for missed information.” Another program uses a low-tech tool to improve quality of morning report: “We actually use a checklist to go through the various aspects of morning report, just like a cockpit.”

Material Covered in Morning Report

The interviews revealed variation between ACS programs in the types of patients discussed at morning report. For some programs, severity of illness was the main issue determining who got discussed. Several respondents emphasized that their morning report included discussion of the sickest, most critically-ill patients on the service. Three respondents specifically included sign-out of ICU patients at morning report: “We're hearing about first new admissions to the ICU and then any ICU problems and then they peel off.” For three respondents, morning report served mainly as a way to review new patients and salient overnight events: “What's happened overnight, new admissions, any problems the patients have.” In contrast, one respondent reported that morning report served as a more comprehensive overview of all patients on the service: “We go through the whole last twenty-four hours of trauma and acute care surgical encounters... not just admissions, but encounters, the whole gamut of trauma and acute care. And, then we discuss during that time issues on the floor and issues in the ICU.”

Three respondents reported including consults in morning report. One respondent specifically mentioned that morning report serves as an opportunity to discuss the operative cases for the day: “Every single consult and every single case being passed on and every single case being put on the board [for surgery]is reviewed.” Another used morning report as an opportunity to create a plan for the day: “Morning report is where the patient hand-off occurs, the plan for the day for everything is structured.”

One program was unique in that its morning report included time to discuss follow-up from the outpatient setting: “They also discuss patients that came back into the clinic [with] interesting follow-up or issues from that standpoint.”

Advantages and Disadvantages of Morning Report

Throughout the interviews, respondents described various perceived benefits of morning report. Respondents reported that morning report allows for effective and safe exchange of information (2/12), in some cases by addressing anticipated problems for the day (1/12). Respondents also reported that morning report served as a quality improvement opportunity (2/12), a forum for multidisciplinary information exchange (1/12) and an opportunity to provide trainee education (2/12). One particular program stood out as unique for having an attending not involved in a case become the discussant during morning report to facilitate quality improvement (1/12). Morning report was closely linked to continuity of care (3/12), in particular in the context of duty hour restrictions (1/12) and change of on-service attending (1/12). (See **Table I** for specific quotations supporting these themes.) However, not all respondents had a positive commentary about morning report. In fact, three respondents commented that morning report was “cumbersome,” “torture,” and “redundant.”

Alternatives to Morning Report

Eight of the eighteen ACS programs examined in this study do not have a morning report in place. The eight respondents from those programs described several different alternatives to morning report. All of these alternatives involved the passing on of patient information, while none included opportunities for teaching.

Most of the alternatives to morning report consisted of the attending coming off the service reaching out to the attending coming onto the service. One respondent described their method simply as, “I think at the faculty level we just talk to each other every day.” Usually the attending-to-attending conversation does not take place in person: “It is usually by phone brief, whatever happened. It used to be person to person that does not always happen. It is usually a pretty brief what are the fires that you dealt with over the evening.” Several

respondents reported an emphasis on sick patients in the sign-out: “We're just making the phone call. I see I got this sick person, this sick person and that's it.” Finally, one respondent described obtaining input from other attendings, even without a morning report in place: “We haven't really needed it because we work so closely together. If there's a sick patient we talk about it first thing in the morning, we e-mail each other, we talk... I always want to get the opinion of other people about what I'm doing or what I did, so we work so closely together, we just talk every day about the patients.”

Discussion

In our experience, trauma programs routinely utilized morning report, even before the 2003 national duty hour restrictions and the advent of Acute Care Surgery as a specialty. Since the ACS model is rooted in the specialty of trauma[31], it is not surprising that we found a majority of centers in our study had some form of morning report in place at their ACS program. However, we had hypothesized that ACS programs with separate trauma and EGS teams would differ in their utilization of morning report compared to combined teams, where injured and NTSE patients were cared for by a single provider team. Contrary to our hypothesis, there was no difference in morning report between programs using these two different types of team structure at the point of patient care. Furthermore, we found that the tradition of morning report has been variably carried forward without any specific practice type or geographic factors determining variations in practice patterns.

With the advent of duty hour restrictions, continuity of care has increasingly become a concern in surgical residencies across the country[2-4, 6, 7, 9, 10]. In multiple settings[1, 6], including general surgery programs[10], in-person patient hand-offs have been found to be of higher quality for maintaining continuity of care and preventing errors than other modes of communication. A review by the Handoff Task Force of the Society of Hospital Medicine (SHM) Healthcare Quality and Patient Safety (HQPS) Committee recommended creating a formally recognized and in-person hand-off plan instituted at the end of a shift or change in service (class 1 Level C evidence)[1]. While implementing these recommendations, one surgery program found that 84% of its residents viewed morning report as an effective tool for patient hand-offs[8]. Our results echo these findings by suggesting that morning report, as a designated hand-off moment for ACS teams, ensures effective and safe exchange of information and improves continuity of care at both the resident and attending level.

While there was lack of uniform agreement among our respondents, their various remarks do suggest two main ways that morning report can achieve these benefits: first, including both the signing-off and receiving teams in morning report appears to ensure that key details are not missed in patient hand-offs; second, including multiple residents and attendings who have cared for a patient, in the past and present, appears to ensure that information does not get lost over time. These benefits are particularly important for patients transitioning from one level of care to another and for patients with previous operations, where the intra-operative details from the past continue to be relevant to ongoing care. For example, unwritten or under-emphasized information from a previous operation could play a role in a patient's management, such as changing the team's threshold to operate or influencing the current operative plan.

Surprisingly, not all twelve sites using morning report cited enhanced communication and improved continuity as a benefit. Failure of leadership to recognize this benefit, along with comments begrudging the time spent in morning report, suggests that in-person hand-offs are underappreciated. Furthermore, it is possible that programs without in-person hand-offs have poorer quality hand-offs, even though their leaders believe that telephone conversations on key issues are sufficient. Additional research on the quality of surgical

hand-offs, especially in the acute setting among surgeons with competing interests (e.g. OR times, ICU rounding blocks), is needed.

In addition to maintaining continuity, morning report also provides a forum for daily peer-to-peer feedback and continuous quality improvement. When attending surgeons and other team members not directly involved in the case can offer real-time second opinions, care plans may be modified and potential morbidity avoided. The quality and relevance of surgical morbidity and mortality conferences (M&M) in the modern era has come under question in recent years[32]. In these traditionally weekly (or at times less frequent) M&M conferences, errors are discussed after they occur and modifications are adopted to prevent recurrence in future patients. Our results suggest that peer-to-peer feedback during daily morning reports could be a major advantage over M&M by allowing earlier detection of potential complications and facilitating rescue of current patients so as to prevent or reduce morbidity and mortality.

Morning report can also drive performance improvement (PI) by serving as a multidisciplinary forum to discuss patient care. Multidisciplinary teams have been shown to improve outcomes for a number of surgical diseases[33-36]. Thus, including nurses, OT/PT, nutrition, pharmacy, social work, case managers, a PI manager, or consultant services in morning report may reap similar benefits for ACS programs. While such broad teams undoubtedly require significantly more manpower and administrative organization, the benefits of a multidisciplinary approach potentially enhance management of co-morbid conditions, optimize discharge planning, and expedite rescue interventions when system or process errors occur. However, we found that only one program had the institutional investment to conduct such a multidisciplinary morning report despite the potential cost savings. It is possible that as the healthcare system moves to more patient-centered care and accountable care organizations, this model will be increasingly embraced.

Including outpatient follow-up discussion in inpatient morning report offers yet another opportunity for systems improvement. While we have found little evidence of this practice in the literature, the benefits of outpatient discussion during inpatient morning report were exemplified by one program in our study[15]. It is possible that these discussions could improve follow-up in the post-discharge period and hence reduce unintended re-admissions for ACS teams. In an era of escalating healthcare costs and multiple efforts to reduce re-admission rates for chronic diseases, morning report may be a tool for systems improvement. This may, in fact, be one model of establishing a “medical home” for a surgical patient population[37].

Case-based education has long been shown to result in better retention of medical knowledge[38-40]. Morning report, in its discussion of actual patients, is perhaps the ultimate model of case-based education. Trainees who are presenting patients can hone their clinical thinking skills while also polishing their presentation skills. Indeed, morning report has been cited previously as an opportunity for both patient hand-offs and trainee education.[2, 8] It has been described as an opportunity for residents to exercise and improve their knowledge, leadership, presentation and problem-solving skills with up to 88% of residents citing morning report as an excellent educational experience[2, 8]. All of the centers in our study are teaching hospitals and our results support the notion that morning report plays a key role in resident education and developing clinical acumen.

In summary, our exploratory analysis of centers with ACS models has shown that morning report can serve as a multi-purpose conference with a number of benefits, including continuity of patient care, systems-based performance improvement, and resident education. Conducting such meetings routinely, however, is not without challenges. While morning

report improves continuity in the face of duty hour limitations and frequent personnel changes, the full benefits may not be harnessed due to the same time limitations, which preclude full attendance of incoming and outgoing care providers. Other pressures, such as the need for senior residents to be in the operating room and multiple clinical roles for attendings can preclude peer-to-peer feedback opportunities. Given the potential benefits, it is concerning that face-to-face structured meetings were not utilized at a third of our centers. As the ACS model continues to expand, we believe that centers adopting this model should consider some of the insights gained from our expert respondents to achieve the greatest potential of morning report, even if they cannot control manpower limitations and time constraints. For example, if daily input from case managers, social workers, occupational therapists, consulting subspecialists is not possible, then perhaps a regular day for such participation should be established and incentivized. Also, whenever possible, at least one non-involved attending level discussant should be present for unbiased performance feedback.

Thus, while there will be some level of ingenuity and flexibility needed, once a center has established a comprehensive daily morning report, incentivizing participation and utilizing a check list or computerized system for accomplishing daily objectives may ensure ongoing success.

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Summary

Acute Care Surgery (ACS) teams have variably implemented morning report as a tool for patient handoffs, performance improvement, and trainee education. This report offers synthesized opinions of field experts on the structure and value of morning report for ACS.

Table I

Key Quotations Exemplifying Advantages of Morning Report (N = 12)

Theme	Exemplary Quotations
For the effective and safe exchange of information	"So that all seven of us [attendings] know all 60 patients on both services. That way the trauma back-up guy knows what's going on." "It is the safest way to ensure a clean hand-off."
To proactively address problems for the day ahead	"It is a good meeting. It is about an hour meeting in the morning and by the time you leave that meeting there are no surprises. Everything has been addressed, you know where the problems are for the day and it really makes the day go a lot smoother."
For performance improvement	"We use it for performance improvement. If something happened last night that shouldn't have, we identify the issue. If we can do - if we can resolve it, we do, if we can't, we start the investigation piece." "The cases are discussed every morning by an attending that is not involved with the actual care."
To provide better continuity of care in the context of new resident work hour restrictions	"So with the new intern rules, what we have done is we have been able to design their night float start so that it can actually stay for morning reporting, at least hear about the cases." "We know who is going to be downgraded from the ICU to come to the Ward or the IMC and we are all at least hearing what has been happening so we know, at least, for better continuity of care from that standpoint." "We can get input from somebody who says, oh yeah. I did that operation two weeks ago even though they may not be working on the team this week or they may be in some other role but they can say, yeah, that anastomosis was shaky to begin with or whatever."
To discuss patients with surgical sub-specialty teams	"The chairman of orthopedics and his residents come on Tuesday to touch base about plans for the week for the orthopedics."
For trainee education	"I think there's a bunch of teaching that goes on in there and we use it for performance improvement. If something happened last night that shouldn't have, we identify the issue. If we can do - if we can resolve it, we do, if we can't, we start the investigation piece."