Utilization of morning report by acute care surgery teams: results from a qualitative study

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Abstract

BACKGROUND: The rigor of handoffs 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 handoffs in ACS programs.

METHODS: Eighteen open-ended interviews were conducted 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 (using NVivo qualitative analysis software).

RESULTS: Twelve of 18 respondents reported using morning report, but only 6 of 12 included attending surgeon–to–attending surgeon handoffs. One of 12 incentivized attending surgeons to participate, 2 of 12 included nursing staff members, and 2 of 12 included physician extenders. Cited benefits of morning report were safe and effective information exchange (2 of 12), quality improvement (2 of 12), multidisciplinary discussion (1 of 12), and resident education (2 of 12). Three of 12 respondents cited time commitment as the main limitation of morning report.

CONCLUSIONS: Morning report is underused among ACS programs; however, if implemented strategically, it may improve patient care and resident education.

The rigor of patient handoffs 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 handoff interactions and has brought the issue of sign-out communication to the forefront of national attention.1–3 The impact of interphysician communication on the quality of patient care has been well documented.1–10

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 Although the bulk of patient handoff 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 handoffs.1,3,8,10–16 In the context of duty-hour restrictions, some general surgery programs

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have shown that morning report can be an opportunity to effectively educate residents as well as transfer care of patients.\textsuperscript{2,8}

In parallel with this growing consideration of morning report as an opportunity to enhance interphysician communication and patient hand-offs, acute care surgery (ACS) has emerged as a new general surgery subspecialty, encompassing the care of patients suffering from injuries and nontrauma surgical emergencies (NTSEs) as well as surgical critical care. 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.\textsuperscript{17–26} However, little is known about how ACS teams ensure interphysician communication and patient handoffs.

Anecdotally, trauma programs have long used 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 handoffs and enhanced interphysician communication during morning report. Given the absence of data on whether the practice of morning report has been carried forward in this new surgical subspecialty, we undertook a qualitative study to describe how, if at all, centers with ACS programs are using this tool. This was an exploratory study designed to increase our understanding of the perceived advantages and disadvantages of morning report within the new model of ACS.

Methods

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

Participants

A purposive sampling method was used to recruit senior leaders who would be able to describe how they had implemented ACS programs. Specific geographic regions (the Mid-Atlantic, the Midwest, New England, the Northeast, the South, and the West) and practice types (community, public or charity, university) were targeted to ensure a diversity of opinion for comparison such that each region contained a respondent from each of the 3 types of practice settings. Potential respondents were selected from the ranks of national organizations or recommended by colleagues. In other words, once a geographic region was selected, we contacted department chairs who were known to us at hospitals with the targeted practice type for recommendations on who at their institutions was in charge of ACS, if indeed their hospitals had implemented ACS. If we did not have a professional contact at a targeted site, we used the rosters of national surgical associations to make similar inquiries. Sites without ACS teams were not included. Recommended leaders at the remaining sites were contacted by e-mail and asked to participate in face-to-face interviews about how they practice ACS at their hospitals 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 an interview was considered a waiver of written informed consent. This study was deemed exempt from full review by the institutional review board of the University of Massachusetts Medical School.

Interviews

One investigator (H.P.S.) created the semistructured interview on the basis of clinical experience and an extensive literature review. The interview addressed a range of topics concerning ACS practice patterns: infrastructure, communication, team structure, evolution of ACS, and resources (see the Appendix). The interview was piloted on senior acute care surgeons at centers familiar to the investigator and altered in an iterative fashion. Between June 2011 and December 2011, this investigator conducted 18 in-person interviews of these ACS leaders who had previously agreed to participate. Fourteen of the 18 participants were current section chiefs or division chiefs for trauma surgery and/or emergency general surgery, 2 participants were department chairs, and 2 were senior surgeons at their sites. All sites had Accreditation Council for Graduate Medical Education general surgery residencies, and 13 sites had Accreditation Council for Graduate Medical Education surgical critical care fellowships at the time the interviews were conducted. None had been formally approved by the American Association for the Surgery of Trauma for an ACS fellowship at the time. 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 audio recorded with participants’ consent, transcribed, and imported into NVivo version 10.0 (QSR International, Melbourne Australia) for qualitative data analysis.

Data analysis

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

In the first step of analysis, 2 investigators (P.L.P. and C.C.) independently reviewed each interview transcript. As concepts emerged from the data, the coders used NVivo to
code specific lines of text to their corresponding concepts (ie, open coding). The 2 initial coders met to compare codes, resolve discrepancies, and review the taxonomy of codes. The constant comparative method of qualitative analysis was used to compare coded segments of text 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 2 initial coders, after which there was found to be 98% intercoder agreement. In the second step of analysis, a third investigator (H.P.S.) reviewed disputed responses until 100% agreement was reached.

The results presented below represent the relational analysis of responses pertinent to interphysician communication and patient handoffs, whether or not morning report was implemented at the respondent’s hospital, broken down by theme and quantified to represent response density (eg, number of respondents holding similar views, conducting similar practices, or providing similar comments).

Results

Twelve of 18 respondents reported that their ACS programs conduct morning report. There were many variations in both processes and perceptions of morning report as evident by diversity of responses detailed below. Few perceptions were held or processes described by a majority of respondents.

Structure and content of morning report

Eight of the programs with morning report specified attending surgeon presence, with 6 respondents reporting that both the daytime attending surgeon coming on service and the overnight attending surgeon signing off service participated in morning report. One respondent spoke about incentivizing attending surgeon attendance at 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 handoffs].” Another 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 sends the overnight resident home before morning report while the overnight attending surgeon stays. Another specifically removes the chief residents from morning report to afford them more operative time: “[The chief resident] already has pretty much all their intel...so we really want them operating.”

Two respondents mentioned the inclusion of intensive care unit (ICU) and floor nursing staff, and 2 respondents mentioned the inclusion of midlevel staff, such as physician assistants (PAs). One program was unique for involving, “nurse managers and/or charge nurses from the wards, OT/PT [occupational therapy/physical therapy], 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 [performance improvement] manager and our trauma program manager there to capture PI events and incidents.”

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.”

Institutions with separate teams for trauma patients and emergency general surgery patients appear to be conducting a single morning report among both teams. For example, “Both Trauma attendings have to be there at 7:00. The emergency surgery attending makes an appearance by 7:30....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 used a computer-based tool: “The residents have a program where they upload data for handing off...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 uses a low-tech tool: “We actually use a checklist to go through the various aspects of morning report, just like a cockpit.”

The interviews revealed variation among ACS programs in the types of patients discussed at morning report. 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 3 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, 1 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 consultations in morning report. One respondent specified 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 of 12), in some cases by addressing anticipated problems for the day (1 of 12). Respondents also reported that morning report served as a quality improvement opportunity (2 of 12), a forum for multidisciplinary information exchange (1 of 12), and an opportunity to provide trainee education (2 of 12). One program was unique for having an attending surgeon not involved in a case be the discussant during morning report to facilitate quality improvement (1 of 12). Morning report was closely linked to continuity of care (3 of 12), in particular in the context of duty-hour restrictions (1 of 12) and change of on-service attending surgeon (1 of 12). (See Table 1 for specific quotations supporting these themes.) However, not all respondents had positive comments about morning report. Three respondents commented that morning report was “cumbersome,” “torture,” and “redundant.”

### Alternatives to morning report

Six of the 18 programs examined in this study do not use morning report. The respondents from those programs described several alternatives to morning report, all of which involved the passing on of patient information, while none included opportunities for teaching.

Most of the alternatives to morning report consisted of the attending surgeon coming off the service reaching out to the attending surgeon coming onto the service. One respondent described the method simply as, “I think at the faculty level we just talk to each other every day.” Usually the attending surgeon–to–attending surgeon 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.”

### Table 1 Key quotations exemplifying advantages of morning report (n = 12)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Exemplary quotations</th>
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<tbody>
<tr>
<td>For the effective and safe exchange of information</td>
<td>“So that all seven of us [attending surgeons] know all 60 patients on both services. That way the trauma back-up guy knows what’s going on.”</td>
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<td></td>
<td>“It is the safest way to ensure a clean hand-off.”</td>
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<tr>
<td>To proactively address problems for the day ahead</td>
<td>“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.”</td>
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<tr>
<td>For performance improvement</td>
<td>“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.”</td>
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<td></td>
<td>“The cases are discussed every morning by an attending that is not involved with the actual care.”</td>
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<tr>
<td>To provide better continuity of care in the context of new resident work-hour restrictions</td>
<td>“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.”</td>
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<td></td>
<td>“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.”</td>
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<td></td>
<td>“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.”</td>
</tr>
<tr>
<td>To discuss patients with surgical subspecialty teams</td>
<td>“The chairman of orthopedics and his residents come on Tuesday to touch base about plans for the week for the orthopedics.”</td>
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<tr>
<td>For trainee education</td>
<td>“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.”</td>
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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, 1 respondent described obtaining input from other attending surgeons, 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.”

Comments

In our experience, trauma programs routinely used morning report, even before the 2003 national duty-hour restrictions and the advent of ACS as a specialty. Because the ACS model is rooted in the specialty of trauma, it is not surprising that we found that a majority of centers in our study had some form of morning report in place at their ACS programs. However, we found that the tradition of morning report has been variably carried forward without any consistent processes or perceptions of morning report among our respondents. Nevertheless, the qualitative data on morning report gleaned from these 18 surgeons leading ACS programs in various geographic locations and practice settings provide important consideration for our profession at a time when continuity of care has increasingly become a concern, in particular among surgical residencies, across the country.2-4,6,7,9,10

In multiple settings, including general surgery programs, in-person patient handoffs 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 Healthcare Quality and Patient Safety Committee recommended creating a formally recognized and in-person handoff plan instituted at the end of a shift or change in service (class 1, level C evidence).1 While implementing these recommendations, 1 surgery program found that 84% of its residents viewed morning report as an effective tool for patient handoffs.8 Our respondents from programs using morning report echoed these findings by suggesting that, as a designated handoff moment for ACS teams, it ensures effective and safe exchange of information and improves continuity of care at both the resident and attending surgeon levels.

Although there was a lack of uniform agreement among our respondents, their various remarks do suggest 2 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 handoffs. Second, including multiple residents and attending surgeons 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 1 level of care to another and for patients with previous operations, where the intraoperative details from the past continue to be relevant to ongoing care. For example, unwritten or underemphasized 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 12 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 handoffs are underappreciated. Furthermore, it is possible that programs without in-person handoffs have poorer quality handoffs, even though their leaders believe that telephone conversations on key issues are sufficient. Additional research on the quality of surgical handoffs, especially in the acute setting among surgeons with competing interests (eg, operating room times, ICU rounding blocks), is needed.

In addition to maintaining continuity, morning report also has potential to serve as a forum for daily peer-to-peer feedback and continuous quality improvement. When attending surgeons and other team members not directly involved in a 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 in the modern era has come under question in recent years.32 In these traditionally weekly (or at times less frequent) conferences, errors are discussed after they occur, and modifications are adopted to prevent recurrence in future patients. Our respondents suggest that peer-to-peer feedback during daily morning reports could be a major advantage over morbidity and mortality conferences by allowing earlier detection of potential complications and facilitating rescue of current patients 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.3-36 Thus, including nurses, occupational and physical therapists, nutritionists, pharmacists, social workers, case managers, a PI manager, or consultant services in morning report may reap similar benefits for ACS programs. Although such broad teams undoubtedly require significantly more manpower and administrative organization, the benefits of a multidisciplinary approach potentially enhance management of comorbid conditions, optimize discharge planning, and expedite rescue interventions when system or process errors occur. However, we found that only 1 program had the institutional investment to conduct such a multidisciplinary morning report despite the potential cost savings. It is possible that as the health care 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. Although we have found little evidence of this practice in the literature, the benefits of outpatient discussion during inpatient morning report were exemplified by 1 program in our study. It is possible that these discussions could improve follow-up in the postdischarge period and hence reduce unintended readmissions for ACS teams. In an era of escalating health care costs and multiple efforts to reduce readmission 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.

Case-based education has long been shown to result in better retention of medical knowledge. 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 polishing their presentation skills. Indeed, morning report has been cited previously as an opportunity for both patient handoffs and trainee education. 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. All of the centers in our study are teaching hospitals, and our respondents supported the notion that morning report plays a key role in resident education and developing clinical acumen.

There were some limitations to this qualitative study. Although we ensured diversity of respondents on the basis of geography and practice setting, our respondents cannot be assumed to be fully representative of the universe of ACS programs in the United States, in particular those without training programs. The interviews were conducted at a time when processes evolving at the sampled institutions; however, our findings are presented as if they were fixed in time. As with all qualitative research, our findings are exploratory and hypothesis generating rather than conclusive. Thus, we cannot prove, despite the opinions generated and processes described, that morning report is causally related to improved processes of care and outcomes for patients with injuries or NTSEs. Nevertheless, we feel that this work represents an important initial step in understanding the utility of morning report with the emergence of ACS.

Conclusions

Our exploratory analysis of centers with ACS programs has shown that morning report has the potential to serve as a multipurpose conference with a number of benefits, including continuity of patient care, systems-based PI, and resident education. Conducting such meetings routinely, however, is not without challenges. Although morning report improves continuity in the face of duty-hour limitations and frequent personnel changes, the full benefits may not be harnessed because of 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 attending surgeons can preclude peer-to-peer feedback opportunities. Given the possible benefits, it is concerning that face-to-face structured meetings were not used at a third of our centers. As the ACS model continues to expand, we suggest 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 1 noninvolved attending-level discussant should be present for unbiased performance feedback. Thus, although there will be some level of ingenuity and flexibility needed, once a center has established a comprehensive daily morning report, incentivizing participation and using a checklist or computerized system for accomplishing daily objectives may ensure ongoing success.

Acknowledgments

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References

Appendix

Interview questions

Acute Care Surgery Specialty

1. Do you consider Acute Care Surgery a specialty within surgery?
   If not, ask the following:
   1a. How do you consider it?

2. How do you define Acute Care Surgery as a surgical specialty?

3. Describe the evolution of Acute Care Surgery as a specialty.

Acute Care Surgery Team

4. How long has your institution had an Acute Care Surgery team?

5. What clinical problems does your Acute Care Surgery team provide care for?
   If trauma and non-trauma surgical emergencies are grouped into a single team ask the following:
   5a-combined. What is the rationale for a combined trauma and emergency surgery team?
   If trauma is a separate team from the team for non-trauma surgical emergencies ask:
   5a-separate. What is the rationale for separate teams of trauma and non-trauma surgical emergencies?
   Also ask the following:
   5b. What is your institution’s approximate volume of trauma cases and non-trauma surgical emergencies annually using 2010 as a reference point?

6. Describe how your institution’s Acute Care Surgery Team is structured?
   If not answered above ask the following:
   6a. Who makes up the team?
   6b. What are their qualifications/credentials?
   6c. How many such individuals are there on the team?
   6d. What other responsibilities do they have?
   6e. Describe how residents function on the team.

7. How is call structured?

Acute Care Surgery Infrastructure

8. What are your institutional resources for caring for Acute Care Surgery patients?
   If not answered above ask the following:

8a. What is your operating room availability for non-traumatic surgical emergencies?

8b. What is your surgical ICU capacity?

8c. Describe your ancillary and subspecialty support.

9. Is your institution a designated level 1 trauma center?
   If yes, ask the following:
   9a-yes. How, if at all, do you leverage resources from the trauma center infrastructure for Acute Care Surgery?
   If no, ask the following:
   9a-no. If you had a Level I trauma center, how would you imagine leveraging resources from the trauma center infrastructure for Acute Care Surgery?

10. Do you collect data for your Acute Care Surgery patients? If so, how and why?

Acute Care Surgery Model

11. How do you facilitate communication in this model, both within the team and between the team and its partners across the institution?

12. What benefits does your Acute Care Surgery model provide at the departmental level, at the institutional level and to the broader community that you serve?
   If not answered above ask the following:
   12a. Approximately what proportion of your Acute Care Surgery patients are referred from outlying hospitals?

13. What do you think are the strengths and weaknesses of your Acute Care Surgery model?

14. Do you think that the Acute Care Surgery model is financially viable? How so?

Acute Care Surgery Generalizations

15. Why do you practice Acute Care Surgery?

16. What kind of training should residents who also hope to practice Acute Care Surgery have?
   If not answered above ask the following:
   16a. Do you believe that Acute Care surgeons need specialized fellowship training?

17. If you could have unlimited resources for an ideal Acute Care Surgery model, how would you design it?

18. What do you think the future holds for Acute Care Surgery as a specialty?