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Enhancing the Inpatient Consultation Learning Environment to Optimize Teaching and Learning

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INTRODUCTION

Subspecialty consultation is becoming an increasingly used resource in inpatient medicine. An analysis of Medicare data suggests that an average Medicare patient receives 2.6 consults per admission, and a recent study of medicine hospitalists suggested that more than half request multiple consultations daily.^{1,2} Several studies, including unpublished data from our center, suggest that the number of inpatient consultations has been steadily increasing over time.^{3,4}

In addition to providing clinical care, studies have shown that an optimal consult interaction includes both effective communication with, and teaching directed to, the team requesting consultation.^{5,6} Research from our group suggests that both housestaff and hospitalist primary teams have a strong desire to learn and that fellows have a strong desire to teach in the setting of inpatient consultation.^{2,7,8} Furthermore, fellow teaching has been identified as part of the core competencies by the Accreditation Council for Graduate Medical Education (ACGME).⁹ An effective teaching interaction during consultation has many potential benefits. Effective consults that include teaching can help optimize communication between teams, empower the primary team to provide effective care, and avoid miscommunication.¹⁰ In addition, given the anticipated workforce shortage within rheumatology, consultation may be an important tool to recruit residents to our specialty. Kolasinski and colleagues¹¹ have demonstrated that most rheumatology fellows make the decision to pursue rheumatology during residency, and a study by Horn and colleagues¹² suggested that subspecialty fellows have an impact on the career choice of internal medicine residents. Therefore, fellow teaching and establishing good rapport with residents during inpatient consultation may help recruit trainees to our specialty because residents have the greatest exposure to rheumatology fellows in this setting.¹³

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Given the importance and the potential positive effects of teaching and effective communication during consultation, several studies have sought to explore the primary team-consultant interaction. Herein we will explore what is known about the barriers to providing effective teaching during consultation and interventions that enhance the consult interaction. This literature has the potential to empower fellows to provide more effective consultation and faculty to explore and enhance the complex inpatient learning environment.

BARRIERS TO EFFECTIVE TEACHING DURING CONSULTATION

Despite the fact that teaching during consultation has many potential benefits and is desired by both residents and fellows, our previous work suggests that fellows are an underused teaching resource.^{14,15} This may be because the primary team-consultant interaction is an example of situated learning¹⁶ taking place in the academic medical center environment, which presents many potential barriers to effective consultation and an optimal learning environment. These factors can be broadly divided into interpersonal and systems issues (Box 1).

Workload and Burnout

Fellows are likely being asked to do more than ever before. Fellows serve multiple roles within their divisions, including providing clinical care to both inpatients and outpatients, contributing to the research enterprise and teaching trainees who rotate in their subspecialty. Although there are no studies specifically addressing fellow workload, the increase in overall consultation volume without a concomitant expansion of fellowship positions, coupled with increasing patient complexity, suggest that fellow workload has likely been expanding. Consequences of increased workload may include less time for teaching, increased pushback on consult requests (defined as perceived resistance to perform consultation), higher rates of burnout, and potential detriments to patient care. Similarly, medicine hospitalists cited workload as a critical factor in their ability to learn from consultants.² In addition, when the fellow is finishing rounds later in the day, the ability to relay the recommendations in person to the primary team, which is a key factor to effective teaching, may be impaired.

Rates of burnout among residents and fellows remain high, and higher than medical students, practicing physicians in their early careers, as well as age-matched controls in other professions.¹⁶ Approximately half of residents and fellows experience emotional exhaustion and high levels of depersonalization.¹⁷ Another study looking at burnout among oncology fellows showed that feelings of emotional exhaustion and depersonalization actually increased from the beginning to the end of the first year of fellowship, and that perceived personal accomplishment decreased throughout the year, potentially demonstrating a link between high workload and burnout.¹⁸ The concomitant and interrelated pressures of increasing workload and burnout may contribute significantly to both patient care and the learning environment during inpatient consultation. In addition, uncertainty, which is prevalent within rheumatology, may affect student, resident, and fellow interactions because uncertainty has been associated with increased psychological distress.^{19,20} An unsupportive learning environment, which may also include institutional biases and

insufficient resources for reflective practice, may adversely affect fellow personal and professional growth. This is of particular importance given that fellows are the future leaders of our field.

Interpersonal Barriers to Teaching During Consultation

Interpersonal factors impeding teaching during consultation include fellow pushback, residents' willingness to engage in teaching interactions, as well as perceptions and expectations of both the requesting and consulting teams.⁸

Fellow pushback on primary team consult requests, defined as communicating a perceived reluctance to perform the consultation, represents a critical barrier to teaching during consultation. It is important to note that residents and fellows may perceive pushback differently.⁸ For example, a fellow's attempt to clarify the consult question may be perceived by the resident as an attempt to push back against the consult. However, that perception is in itself important, because such perceptions diminish the possibility that an effective teaching interaction occurs between that resident and fellow. Because the resident-fellow teaching interaction is often initiated by the resident (eg, by asking the fellow a question to elicit teaching), perceived or real fellow pushback is a major detriment to residents initiating the teaching interaction.⁸ Furthermore, our group has found that residents often perceive that fellows are too busy to teach and that fellows often perceive that residents are too busy to learn during inpatient consultation.⁸

Other Systems Barriers to Teaching During Consultation

Multiple barriers to effective consultation arise as a result of hospital system factors. These include issues surrounding the consultation request, giving recommendations to the team, and the learning environment during inpatient consultation. The quality of the consult request can vary significantly by the level of training of the provider as well as their knowledge of the individual patient. Primary team structure can influence the quality of the consult request and also the fellow's ability to give in-person recommendations and teaching; for example, if the intern or resident calling the consult did not admit the patient, they may not be able to provide as much context. In addition, if the fellow finishes rounding late in the day and the primary provider has signed out to a covering intern, this person may not be as interested or have as much time to delve deeper into the case.⁸ Furthermore, the consultant's knowledge of hospital systems is a common barrier. For example, not knowing where the resident work rooms are located or when the team signs out can make it difficult for the fellow to find the primary team and have an in-person discussion.

Familiarity (or the lack thereof) between residents and fellows has a significant effect on resident-fellow interactions. Several studies have demonstrated that familiarity between the resident and fellow, as well as the trust that familiarity helps create, are critical factors that enhance the consultation relationship.^{2,8,21} Conversely, lack of familiarity can be a significant barrier, leading to pushback, less desire to teach on the part of the fellow, or less willingness to engage the fellow in teaching on the part of the resident.

Several barriers play a particularly important role during phases that are critical to fellows' professional identity formation, such as the beginning of fellowship.²² Acclimating to a new

hospital and learning the hospital system is a major impediment that can also exacerbate the barriers described above. In addition, toward the beginning of the academic year, fellows may be hesitant to give recommendations or provide teaching before discussing the case with the attending.²³ For example, for a complex patient with a fever of unknown origin, the fellow may be hesitant to lead the team down a particular diagnostic road without first fully discussing the case with an attending, even though simply leading the team through their initial thought process would be a great educational experience for both parties. By the time the patient is staffed there may be limited time or opportunity to teach the primary team. Barriers such as these are particularly important to address because they affect professional identity formation, including fellows' approach to primary team interactions. Setting their approach to consultation early in the year may prevent fellows from spending more time teaching as they gain confidence and experience.

Finally, fellows' teaching skills may be an additional barrier.⁸ Although most fellows feel confident in their ability to teach, teaching in the setting of consultation poses significant challenges that differ from their previous teaching experiences.⁷ For example, in contrast to teaching their team as a senior resident, fellows often do not know the learners they are interacting with, which makes learner assessment challenging. In addition, time available for teaching during consultation is generally quite short, and, combined with the sometimes subspecialized nature of the material, engaging in teaching can be a challenge for fellows.

Ultimately, we would argue that many of the factors described as interpersonal factors may fall under the realm of systems issues, and that all these factors are intimately interrelated. For example, when a very busy fellow early in the academic year receives a consult request from an intern without a well-phrased consult question, the intern may perceive some pushback on the part of the fellow and may then choose not to engage the fellow in a teaching interaction when the fellow relays a recommendation. This interaction, rather than fostering positive familiarity may engender some tension, which can extend to future consult interactions. This interrelatedness also represents a major opportunity for improvement, because interventions that reduce a barrier described above can have significant impact by positively affecting multiple aspects of the interaction.

FACTORS AND INTERVENTIONS ENHANCING CONSULTATION

Improving consultation can have a wide array of meanings. Improving the interaction between the fellow and primary team, enhancing the compliance with the consultant's recommendations, increasing teaching and learning, or improving the satisfaction of the patient and care team members all serve to enhance the consult interaction.

Compliance with Consultant Recommendations

To enhance compliance with recommendations, determining what question is being asked is a critical first step. A study by Goldman and colleagues⁵ showed that, in 15% of cases, the requesting and consulting physician actually have different senses of the question being asked. Another study looked at factors that increased compliance with the consultant's recommendations and showed that referring physicians comply with the consultant's recommendations between 54% and 95% of the time.²⁴ Compliance may increase when

such consultations are performed the same day or within 24 hours, definitive language is used in recommendations, recommendations are prioritized, and are limited to no more than 5 separate recommendations. In addition, they note that certain clinical factors, such as specifying medication details, for example, dosage, route, frequency, and duration, direct verbal contact, and giving therapeutic as opposed to only diagnostic recommendations, all help to improve compliance.²⁴

Communicating Consult Requests

Several approaches focusing on a structured communication of the consult request have been shown to enhance the consultation process (Table 1).^{15,25–28}

The 5Cs and CONSULT models have focused primarily on communicating the clinical information; our group's approach and the PIQUED framework also focus on enhancing teaching around consultation. 5 Cs is currently the most extensively studied consult communication technique.^{22,23} This framework entails providing an introduction, giving a concise clinical story, highlighting the reason and time expected frame for consultation, fostering an open and dynamic conversation, and closing the loop to ensure that all parties understand the next steps. Several studies have shown its benefit, including one assessing intern self-reported preparedness to request consultations and measured communication skills.²³ A total of 96% of interns reported feeling better prepared, and more consultants described interns as better prepared, to request consultations (54% after the intervention versus 27% before).²⁷

Our group developed and evaluated a 4-step intervention. First, the supervising resident assisted the intern with identifying a consult question to facilitate reflection in action. Second, the interns were asked to express an interest in learning from the fellow during the consult request. Third, interns were encouraged to engage fellows in teaching, and, fourth, they were asked to bring back a teaching point to rounds to further promote learning. The intervention led to improvement in in-person communication and resident-fellow teaching interactions.¹⁵

Notably, fellow-directed interventions around receiving consult requests and reducing pushback have not been studied. From our experience we believe that fellows can focus on 4 elements that can enhance the primary team-fellow interaction during the consult request.⁸ First, being kind and stating a willingness to help as early as possible during the conversation is a critical step, which helps to transition the conversation from one of negotiation, to a more collaborative process. Second, limiting pushback is important, recognizing that the team requesting a consult is calling for help, even if they are unable to communicate a clear and concise question. Third, avoid asking questions about what can easily be looked up in the medical record. Fourth, set an expectation for an in-person teaching interaction. This last step can help break down barriers to residents engaging fellows in teaching and set positive expectations.

What can program leaders do to enhance communication around consultation in their institutions? In addition to teaching trainees about effective consult communication using the above-mentioned techniques, enhancing familiarity between interns, residents, hospitalists,

and fellows can facilitate improved in-person communication. Programs can also focus on familiarizing fellows with primary team structure to allow them better understanding of and access to the teams.

Fellow Teaching Skills

Most fellows are interested in teaching, although many of the barriers described above can pose significant obstacles. A needs assessment of medicine subspecialty fellows revealed that 79% anticipate teaching to be a part of their careers. However, 67% reported that they had received no training focused on teaching skills during their fellowship.⁷ Because the subspecialty fellow is often the main consultant interacting with the primary teams on a daily basis, it is critical to develop mechanisms to help fellows grow not only as excellent consultants and physicians but also as educators. To address this opportunity gap, multiple programs aimed at developing fellow teaching skills have been described.^{29–33} In addition, as more fellows pursue academic careers as educators, fellowship programs have begun to establish medical education tracks.³⁴

Because teaching during inpatient consultation presents unique challenges described above, our group has focused specifically on enhancing fellow teaching skills in this setting. We developed the Fellow as Clinical Teacher (FACT) curriculum, using the PARTNER framework (available for use from MedEdPORTAL) (Table 2).^{33,35,36} The curriculum focuses on helping fellows overcome barriers to teaching during consultation. The PARTNER framework helps fellows engage the primary team in active learning in a time-efficient manner. Several studies have evaluated the efficacy of the FACT curriculum demonstrating an improvement in fellow teaching skills as measured by the Objective Structured Teaching Exercise, in which fellows are observed teaching standardized learners.^{32,37} Fellows also reported more confidence in their teaching skills and rated the curriculum highly.^{33,36} At our institution, the FACT curriculum has been a required part of fellowship curricula in most divisions, and has been well received.

Feedback is critically important to enhance fellow teaching skills. Notably, the ACGME Program Requirements for Graduate Medical Education in Rheumatology state that the program must use performance data to assess the fellow in their teaching skills involving peers and patients.⁹ However, there are no recommendations or requirements to provide feedback for improving fellows' teaching skills. Although attendings may oversee fellows giving teaching and instructions to patients, fellows report that direct observation and feedback on their teaching skills is relatively infrequent during fellowship training.⁷ In addition, fellows rarely receive feedback from primary teams. This may in part be as a result of the logistical challenges inherent in a large number of residents and hospitalists evaluating a similarly large number of subspecialty fellows. At our institution we have developed and implemented an annual evaluation of medicine subspecialty consult services by hospitalists and housestaff.³⁴ Responders also have the opportunity to provide feedback to specific fellows. The results are distributed to fellowship program directors with their service identified and all other services de-identified so that comparisons may be made. Fellowship program directors have found this evaluation to be valuable and most have implemented changes in their fellowships based on the results of this evaluation.³⁸

Future Directions

Research focusing on inpatient consultation is in its early stages. Over the next decade studies evaluating and categorizing the use of inpatient consultation as well as the extent of teaching on the inpatient services will be helpful. Determining how to test interventions and deciding what outcomes are most useful to measure will be vital moving forward. Should the outcomes be related to the amount of teaching alone, resident and primary team satisfaction, or to the consultant's impression of the interaction? Whether any of these interventions have an impact on patient care outcomes would be important to measure, although demonstrating this effect could be challenging.

Elucidating the relationship between the barriers to teaching and quantifying their effect is critical. For example, illuminating the links between workload, burnout, pushback, perceptions, teaching, and learning will play an important role in identifying and designing effective interventions. In addition, further studies looking into alternative methods of consultations, or different types of workflow, could help enhance the fellow's consult experience. Interventions such as using nurse practitioners and physician assistants has become a growing area of interest across the country. The role of these providers would likely differ based on the specialty and program but could help to augment the fellowship experience. In addition, electronic consultations are used by some health care systems in the outpatient setting as a way to provide brief consultation advice without seeing the patient in person.³⁹ They are often used either for initial advice or for simple patient consult questions. The possibility of using electronic consults in the inpatient setting to determine whether they could decrease the number of in-person consultations would also be of interest.

The authors believe that a comprehensive approach will likely be required to lead a cultural evolution surrounding the entire process of consultation. Such an approach should include multiple interventions discussed above, including educating primary teams regarding appropriate consult requests and communication, endowing fellows with strategies to overcome barriers faced in the hospital environment, enhancing their teaching skills, augmenting feedback that fellows receive, and considering effective ways of controlling fellow workload. Interventions should be rigorously assessed with multiple outcome measures including primary team and fellow satisfaction, measures of wellness, instruments measuring behavior change and clinical outcomes.

SUMMARY

Inpatient consultation is an increasingly used resource and an important opportunity for teaching and learning. Multiple barriers to fellow teaching and primary team learning during consultation exist in academic medical centers; however, interventions have been shown to reduce these barriers. Such interventions include addressing fellow workload and burnout, enhancing primary team and fellow communication as well as fellow teaching skills. Further research to elucidate the effect of workload and other barriers on the primary team—consultant interaction and testing the effect of comprehensive interventions using robust outcome measures—have the potential to significantly enhance the educational value of consultation.

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KEY POINTS

- Consult volume across specialties has been increasing over time in academic medical centers.
- Teaching in the setting of consultation is valued by both fellows and primary teams and may have broad-reaching positive effects.
- There are multiple barriers to effective consult interactions, which include workload, experience, lack of familiarity between teams, and hospital systems, among others.
- Interventions directed at improving the quality of consultation requests and enhancing fellows' teaching skills may enhance consult interactions between primary teams and subspecialties.

Box 1**Barriers to effective consultation****Interpersonal barriers**

- Perceptions of primary teams and fellows
- “Pushback” on consult requests from fellows
- Willingness of primary teams to engage fellows in teaching

Systems barriers

- Inexperience
- Lack of familiarity between teams
- Workload
- Acclimating to a new hospital
- Quality of the consult request
- Fellows’ teaching skills

Table 1

Frameworks for calling consultation

Framework	Components
5 Cs ^{26,27}	<ul style="list-style-type: none"> • <i>Contact</i>: introduction between consultant and consulting physicians • <i>Communicate</i>: give a concise story and ask focused questions • <i>Core question</i>: specific question with a reasonable timeframe • <i>Collaboration</i>: discussion with changes in diagnostics or management • <i>Closing the loop</i>: ensure both parties are on the same page
PIQUED ²⁸	<ul style="list-style-type: none"> • <i>Prepare</i>: review necessary information for calling the consult • <i>Identify</i>: identify involved parties (patient, trainee, attending physician, consultant) • <i>Question</i>: ask focused question • <i>Urgency</i>: clarify urgency • <i>Educational modifications</i>: let consultant know about your experience or lack thereof, and ask questions that invite teaching • <i>Debrief</i>: elicit and provide feedback on the case
CONSULT ²⁵	<ul style="list-style-type: none"> • <i>Contact</i> courteously: introduce yourself and team • <i>Orient</i>: provide patient's name, MRN, and location • <i>Narrow question</i>: pose a focused question about diagnosis or treatment • <i>Story</i>: provide a succinct story including pertinent history of present illness, hospital course, and work-up • <i>Urgency</i>: specify whether emergent, very urgent, urgent, or routine • <i>Later</i>: make a follow-up plan and provide contact information • <i>Thank you</i>: show appreciation
MGH framework ¹⁵	<ul style="list-style-type: none"> • Step 1: Supervising resident assists the intern in coming up with a specific consult question • Step 2: Interns are encouraged to invite teaching during initial consultation • Step 3: Interns are encouraged to ask questions about the case to facilitate teaching when discussing recommendations with fellow • Step 4: Interns share a teaching point they learned from the fellow on rounds

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Table 2

PARTNER framework for teaching during consultation

Components	Examples and Comments
<i>Partner with resident: discuss expectations for learner</i>	"I saw Mr. S and have some thoughts and recommendations but would like to discuss the case with you and do some teaching. Do you have 3 minutes to chat?"
<i>Assess the learner: determine what the learner knows about the case thus far</i>	"What does your team think is going on?"; "How would you interpret the ANA in this setting?"; "How would you distinguish between X and Y in this case?"
<i>Reinforce positives: reinforce positives to create an optimal learning environment</i>	"That's great that you suspected a gout flare, and it sounds like you are very familiar with prednisone, NSAIDs and colchicine for the treatments for gout."
<i>Teaching objectives: identify several teaching points</i>	The learner's knowledge gaps should be assessed with the teaching objectives in mind.
<i>New knowledge: teach general concepts and focus on gaps in learner's understanding</i>	Teaching points to fill in knowledge gaps and correct assumptions should be made concisely, based on learner assessment. Teach and emphasize general concepts when possible. Time should not be spent on what the learner already knows.
<i>Execute recommendations: review consult team's recommendations</i>	Even if discussed in the context of teaching, recommendations should be summarized at the end.
<i>Review: provide time for learner's questions</i>	

Data from Chen DC, Miloslavsky EM, Winn AS, et al. Fellow as Clinical Teacher (FACT) curriculum: improving fellows' teaching skills during inpatient consultation. *MedEdPortal* 2018;14:10728.