ACP Certificate in Physician Leadership in Hospital Medicine

Capstone Project Summary

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Project Title

Implementation and assessment of a resident elective rotation in Hospital Medicine at a tertiary academic medical center

Project Definition & Scope

The field of Hospital Medicine (HM) has grown tremendously since its inception in the mid-1990's. HM continues to flourish and has evolved into a viable long-term career option for graduates of internal medicine residency programs. However, work hour restrictions and alterations in ACGME procedure requirements in combination with the expansion of the skillset expected for practicing HM physicians place current Internal Medicine (IM) residency graduates at risk of being under-prepared to practice as effective Hospitalists. Many hospitalists staff procedure teams, participate in hospital-based quality improvement (QI) and patient safety (PS) initiatives. Hospitalists are expected to be proficient in hospital throughput, reduction in length of stay and reduction in cost of care for inpatients. Graduates of IM residency programs may feel underprepared to meet the full demands, both clinical and administrative, that are now expected of practicing Hospitalists.

Deficiencies in IM training with respect to HM careers have been identified in (but are not limited to) the following areas[1]: procedural skills, inter-professional education, medical

consultation, perioperative medicine, co-management with surgical subspecialties, patient safety and quality improvement, hospital systems and administration, continuum of care, practice management, leadership skills, and communication. Internal data gathered by the office of graduate medical education at our institution further demonstrates that resident trainees in our program identify many of these specific content areas as under-represented in their training.

The need to supplement educational opportunities specific to the future professional needs of a resident has been established[2]. In terms of HM-specific training during IM residency, there are programs with specific HM pathways or "tracks," which are few and focus on QI, health care economics, and professional development[3]. Comparatively more programs have elective experiences in HM for residents, though this still reflects a minority of training programs nationwide. A recent survey of such programs suggests that current HM electives promote autonomy, mentorship, and "real world" hospitalist experience[4]. There is, however, no uniform curriculum for HM elective rotations, and therefore no standard for evaluating residents in such electives.

For the reasons described, the presence or absence of such HM-specific skill-building opportunities at any given IM training program currently relies upon the leadership and vision of a local "champion." The following key steps are necessary for a local leader to implement a new resident elective experience in HM:

1. Determination of the structure and educational content of the elective experience.
2. Consideration of evaluation structure and content.
3. Proposal of the elective and garnering permission from multiple leadership silos.
4. Getting buy-in and participation from faculty participants in the elective.
5. Implementation, trouble-shooting, and experience improvement via "P-D-S-A" cycles.

Methodology

I defined the needs and objectives of the resident HM elective at Yale New Haven Hospital as follows:

- Establish an elective experience at our institution that allows IM resident trainees exposure to skills, clinical niches, and career advice in HM.
- Create a tool by which residents can provide real-time feedback regarding their experiences on the elective.
- Provide exposure to aspects of hospital care, including APP-based team structure, co-management with surgical services, medicine consults, and procedures.
- Provide exposure to health system administration and leadership.
- Offer residents exposure to HM research and career options.
- Provide exposure to QI and PS at the hospital and health system levels.

HM Elective Structure

The HM elective is offered on a year-round basis second-, third-, and fourth-year medical residents in our Traditional, Primary Care, and Medicine-Pediatrics residency programs. Each elective is a 2-week slot to which one resident at a time has access, with input and oversight by representatives from both Yale School of Medicine and Yale New Haven Health System-Northeast Medical Group. The elective is optional and predicated on a supplement to content areas that are under-represented in the traditional residency experience, and as such is not formally integrated with the residency educational curriculum. The experience is based upon a unique combination of experiences that are chosen via direct communication between myself and the learner prior to the elective start date. I ask each learner to self-assess their goals and needs, and facilitate a custom experience built from a "menu" of options which are uniformly available for all HM elective slots as follows:

- *Procedures*. Includes peripheral IV placement (with or without ultrasound guidance), lumbar puncture, thoracentesis, paracentesis, and nasogastric tube insertion (with or

without Cor-trak assistance). This is achieved via supervision from NEMG procedure advanced practice provider (APP) or Yale School of Medicine neurology (LP) or interventional pulmonology (thoracentesis) faculty.

- *Inpatient care on APP-based service*. This provides a contrast to the traditional hierarchical "academic" model in which our IM residents exclusively function.
- *Orthopedic surgery co-management*. This is an opportunity to experience true subspecialty co-management, a role common to practicing Hospitalists nationwide.
- *Multidisciplinary sickle cell management*. This provides the opportunity for residents to experience a care model (multidisciplinary, inpatient-outpatient) to which they otherwise are not exposed.
- *Medicine consults*. IM residents in our program receive limited exposure to consultation and perioperative management, as this is a niche filled by Hospitalists at our institution. Allows exposure to consultative medicine, perioperative risk assessment, postoperative management and complication diagnosis and management.
- *Rapid response team*. Allows residents to practice the important skill of being called to an urgent clinical situation without pre-existing knowledge of the patient. Acute management, as well as triage/disposition/goals of care are focus.
- *Hospital administration*. Allows opportunity to meet with chief medical officer and associate chief of staff of Yale New Haven Health System (YNHHS), as well as medical directors of Hospitalist and Academic Hospitalist inpatient services.
- *Quality improvement & patient safety*. Meetings with multiple providers in the health system with experience/active projects in clinical redesign, local and system-wide QI/PS projects, as well as attendance at health system morning safety report and other QI/PS committee meetings in the health system as desired.
- *Mentorship*. Job advice and career mentorship provided for those residents considering careers in HM.
- *HM Research*. Meeting with provider engaged in grant-funded research in HM.

A learner-specific schedule is generated and distributed to the resident and appropriate faculty participants prior to the elective. A meeting on the first morning of the elective rotation allows further discussion of expectations and experiences. At the end of the elective experience, a survey is sent to the resident electronically, and the responses are recorded in an Excel spreadsheet.

HM Elective Evaluation & Improvement

I made the decision to focus the evaluation on the elective experience and not the learner/participant based on the following 2 factors:

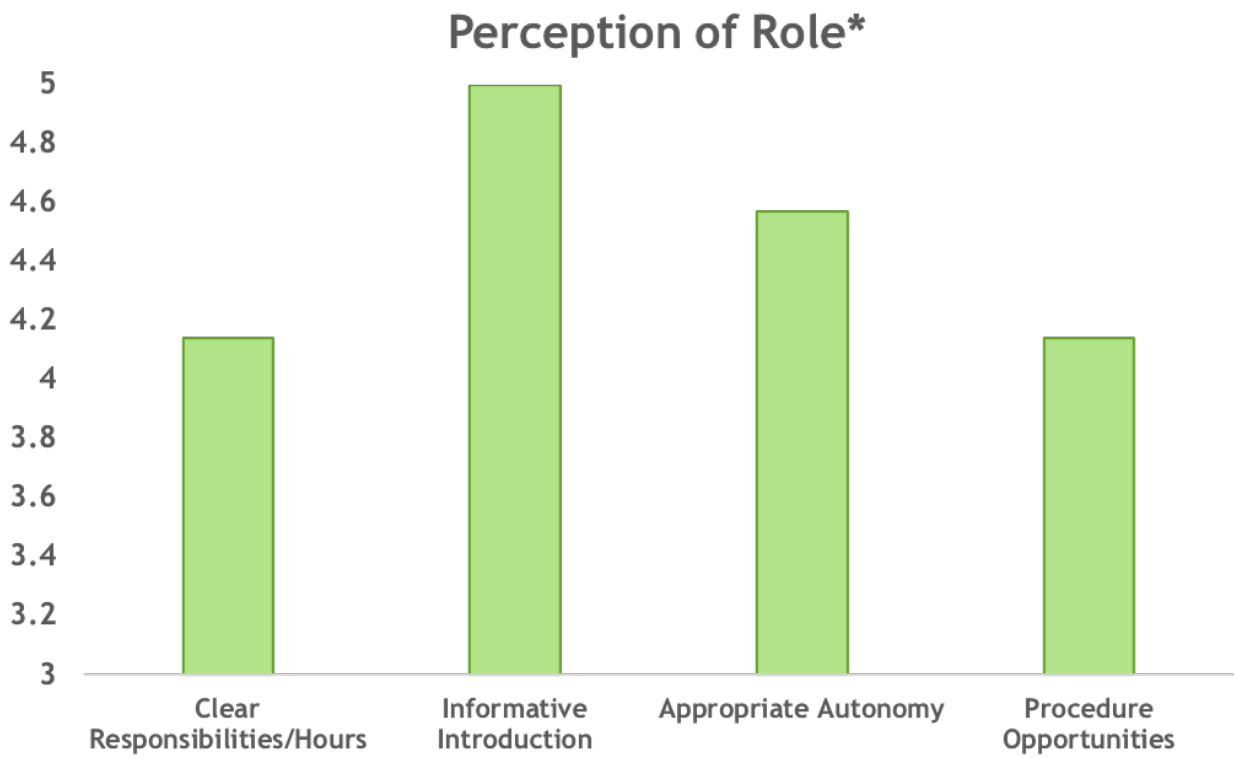
1. *The duration of the elective experience*: 2 weeks is likely insufficient to accurately assess a detectable improvement in a wide variety of possible skills.
2. *Experience heterogeneity*: the HM elective is predicated on the need to provide a flexible experience in which the learner can focus on self-identified gaps in knowledge or experience. As such, there is not a uniform set of skill improvements that can be expected (and thus evaluated) from this elective experience.

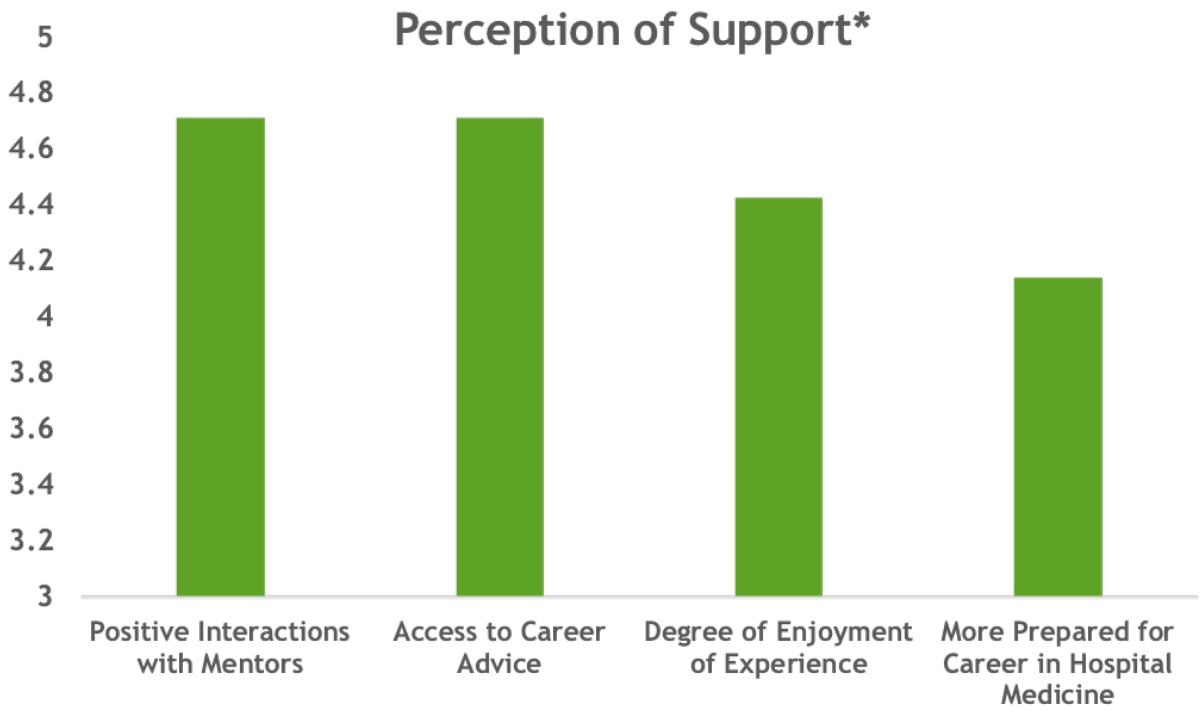
Based upon these principles, I developed a survey (see *Appendix*) which is a combination of Likert-scale (adapted from Roff et al 2005)[5] and open-ended questions to assess the educational role, teaching, and support residents receive on the HM elective. Qualitative and quantitative data has therefore been collected (see *Results*). The narrative questions are intentionally broad, because a focus on narrower skills (e.g., interprofessional education) risks missing the resident who did not chose a specific experience in the elective. To date, I have been most interested to know if the "menu" of options that is provided to the resident enrollees is sufficiently broad to meet the needs of the learners and representative of the ever-broadening list of skills and clinical niches fulfilled nationally by HM practitioners.

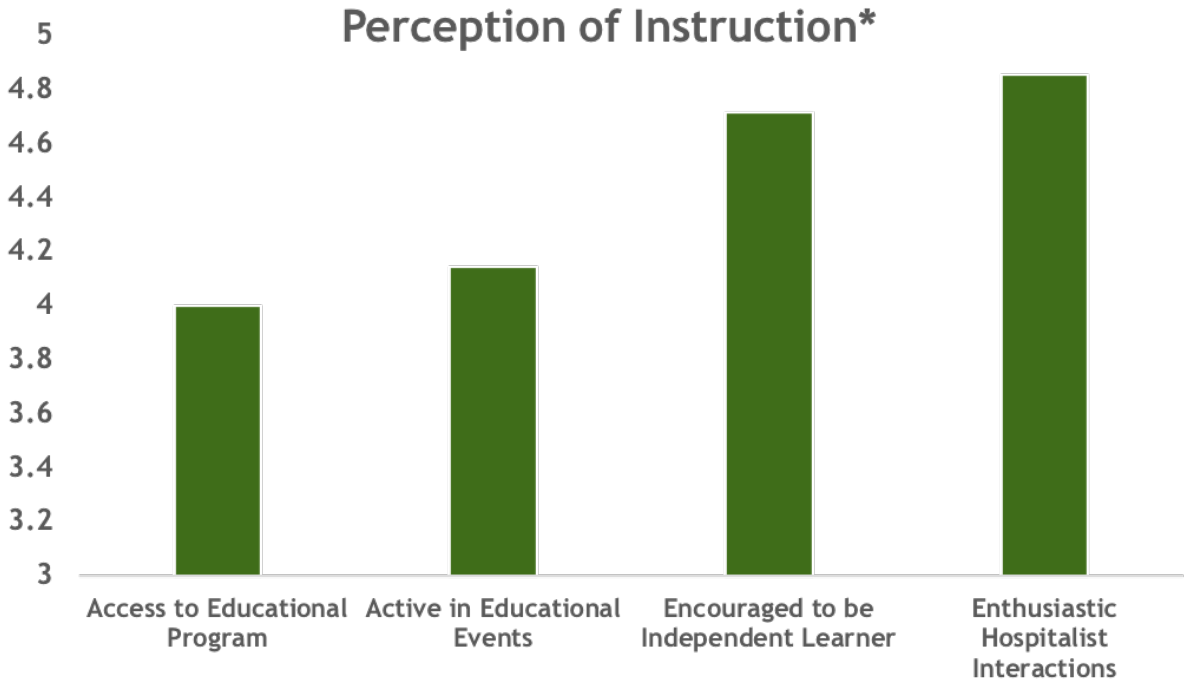
I have also taken feedback from successive elective participants to improve the educational experience for future elective enrollees. Each elective experience is its own rapid "P-D-S-A" cycle that is used to inform and improve the experience of the following resident.

Results

Likert scale



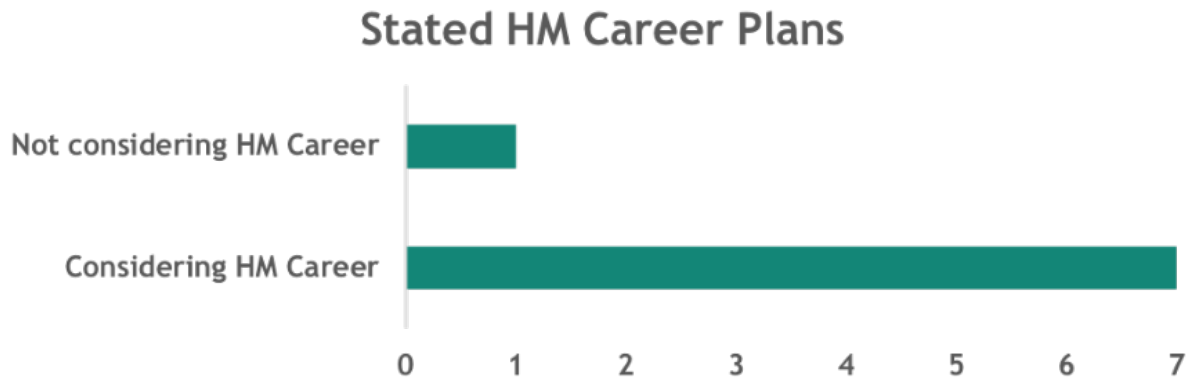




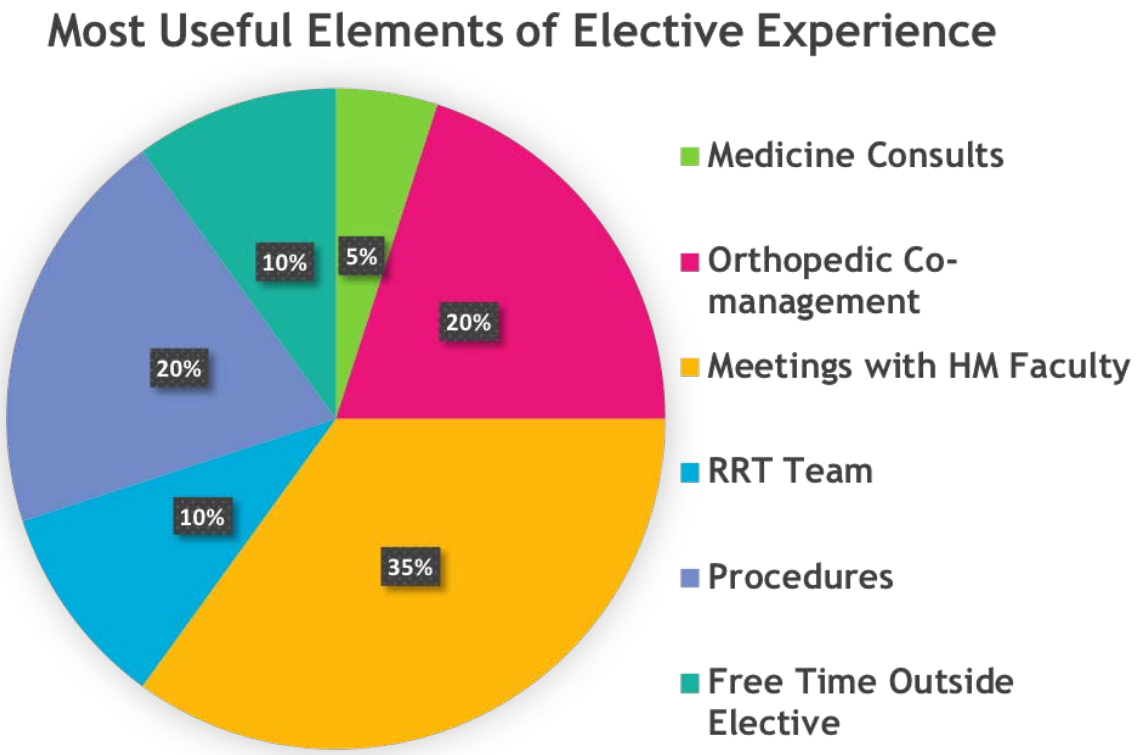
*Average response of 8 residents on a 5-point Likert scale

Overall average of all Likert questions: 4.46

Stated Career Plans



Elective Content Utilization



Narrative Comments

- "It was very surprising, in a good way, how different and diverse people's careers were and how many opportunities re-open for you as a hospitalist."
- "I am very thankful for this elective. For me, it came at the perfect time, as I began to consider a career in Hospital Medicine, but did not know exactly what that meant."
- "Meetings with hospital administrators were invaluable. Really gave a sense of what goes on at a level that we residents are otherwise not privy to."
- "I have already recommended this elective to several others."
- "I was very happily surprised about the diversity of opportunities within the field which I have had no exposure to before. Also, I felt well supported, relaxed, saw interesting pathology, and picked up a few procedural skills."
- "I would add that the HM elective did make me somewhat gloomy about the future of resident education at Yale, insofar as it revealed to me a widening gulf between the house staff and the operational aspects of the hospital system."

Discussion & Impact

HM Elective

While the term "Hospitalist" was coined more than 20 years ago, the willingness of IM residency programs to acknowledge and encourage graduates to pursue academic HM as a viable career option has been a more recent phenomenon. Our elective experience afforded residents' exposure to skills and career advice in HM that has been lacking in our program and many other residencies.

The elective has been successful from the standpoint of registration – 13 residents enrolled out of a total of 17 available blocks, which affirms the utility of such an elective. At the time of the most recent data tabulation, input from 8 residents is available. Thus far, most (but not all) enrollees are at least considering a career in HM. The composite Likert score of 4.46 for all domains (role, support, and instruction) reveals the elective experience has been uniformly well-received. Each resident chose a unique combination of experiences tailored to meet his/her self-assessed needs. Residents generally felt that they were aware of their role on the elective, had appropriate instruction, and felt supported during their experience. A common theme in narrative comments is surprise and interest in the breadth and variety of Hospitalist

job opportunities, as well as the expanse of QI/PS initiatives that occur on the hospital/health system level of which they were previously unaware.

While the opportunity to augment exposure to procedures is most often stated by elective enrollees at the beginning of the experience, residents have noted variable availability of procedure participation as is typical of inpatient care/volume. Most notably, HM elective participants identified meetings with HM faculty as the most informative/rewarding aspect of the elective, during which time they can explore specific career trajectories and heterogenous clinical and administrative niches. Experiences have been expanded based on resident feedback as follows:

- *Procedures*. LP clinic and thoracic interventional program, specialized workforce for acute transport ("SWAT") nurses, and ICU fellows have all been accessed to augment procedure exposure.
- *Billing & Coding*. Based upon stated desire from those senior resident enrollees who have accepted hospitalist jobs, one-on-one meetings with a coding specialist have been arranged and are an ongoing available option for all subsequent residents on the HM elective.
- *Legal aspects of care*. Based upon resident suggestion, I approached the YNHHS legal office who granted us access to their online learning portal, which has learning modules on the following topics: 'Changing Systems', 'Errors and Injuries in Healthcare', 'Responding to Adverse Events and Errors', 'Using Systems Theory to Prevent Errors and Injuries in Health Care', 'Using Systems Theory to Understand Errors and Injuries in Health Care', 'Managing a Medical Malpractice Case', 'Risk Management Basics: Protection and Pitfalls', 'SBAR+R: Structuring Communication in Health Care', 'The Disclosure of Unanticipated Outcomes', and 'The Risk of Poor Communication'.

Future Directions

To date, the HM elective has provided a good number of learners with an opportunity for skill augmentation and career mentoring not otherwise available in their residency training. In the future, the following HM elective opportunities will be considered:

- Expanding elective enrollment to include interns
- Addition of a more formal ultrasound component
- Structured didactic time
- Expectation of academic output (i.e. QI project, case report)
- Addition of a HM "journal club" component
- Possible expansion into anesthesia pre-op clinic
- Pairing with floor nursing to further augment PIV and blood draw skills

With respect to subsequent evaluations of the elective experience and the learners who participate, it may be possible to start evaluating certain competencies if the experience continues to have common experiences. This will be evaluated in the second year of elective availability, starting in June 2018.

Leadership Aspects

The process of creating this new elective experience was, and is anticipated to remain, substantially predicated on leadership. As is the case with many medical centers nationally, the "Hospitalist" and "Academic" groups at our institution have been traditionally siloed, with each group missing essential opportunities to leverage the educational opportunities and experiences in the other. In addition, there is no standardized presence of an HM elective experience nationally (as there is for other medical subspecialties such as cardiology, gastroenterology, and others), nor is there an accepted curriculum. As such, the genesis of this HM elective has been an individual enterprise, with this role having been termed a "bridging leader" in the HM literature[6]. In this role, I was required to obtain administrative buy-in from multiple silos/hierarchies: the residency training program leadership (e.g., program directors

from 3 separate programs); School of Medicine departmental leadership (e.g., vice chair of education and chair of medicine); Hospital/Health System leadership (e.g., chief medical officer and associate chief of staff); "non-academic" Hospitalist leadership (e.g., clinical and non-clinical heads of service). While the concept of the elective was uniformly supported by all, the process of "connecting the dots" to make sure that all entities were aware of this uniform support was a challenge.

An additional leadership challenge has been the need to motivate and obtain buy-in from the day-to-day faculty who supervise resident trainees on the elective experience, as their participation is not reimbursed and is in addition to already busy clinical and administrative schedules. This process wsa made more difficult because their clinical and educational roles are not "fixed," as different attendings and APPs rotate through various experiences included in the HM elective (procedures, consults, etc.). Each elective rotation entails that I directly contact APPs and attendings on consult, procedure, inpatient teams, in addition to those with job descriptions and administrative roles the enrollee has expressed interest in meeting.

Another leadership challenge has been securing buy-in from the target learner. To create and sustain a successful elective, residents must be informed of an opportunity that fulfills a specific need and piques their interest. The early experiences in a new elective must be positive, as negative word-of-mouth can very swiftly and effectively extinguish any initial interest garnered. Fortunately, thus far I have experienced the beneficial effects of positive word of mouth: a PGY-3 approached me during the year and said "I have heard great things about your new HM elective. I'd like to switch out of my ICU elective and into the HM elective. I really like the access to quality and process of care – do you think it would be possible for me to audit the process by which the admitting office assigns patients to beds in the hospital?" Once enrolled in the elective, it was also necessary to motivate learners to be proactive and take advantage of all potential opportunities to minimize down-time. For example, it has been important to make

sure a learner is embedded in the consult service or orthopedic co-management while awaiting variable opportunities such as RRTs or procedures.

The leadership skills by which I have achieved this multifaceted buy-in is via the articulation of a specific vision, effective communication, and persistence. Furthermore, the leadership necessary for the success of this endeavor is not simply an up-front investment. The dynamic at this institution, based upon the siloed hierarchies, is expected to provide an ongoing tendency for these groups ("academic" and "non-academic") to remain separate. As with most projects, sustainability is anticipated to be the greatest challenge. For instance, what happens when flu season hits, the hospital census is a maximum capacity, and the Hospitalist providers find themselves with a resident learner along with 16 patients? Will the faculty be as willing to sit down for an hour and discuss their role as a medical director of a nursing unit? Or their quality improvement project that started as a local floor initiative and is now being rolled out to the entire health system? Additionally, if the elective is successful in increasing the number of residents who pursue hospital medicine as a career, will the academic residency leadership continue to embrace this trend? The P-D-S-A cycles by which the elective is continuously evaluated and (hopefully) improved is also a continuous process that requires active participation and leadership.

Additional and unanticipated positive outcomes of this "bridging leadership" include the organic assembly of a local cadre of trainees so motivated in careers in HM that they convened a HM interest group which they asked me to lead. We have had regular dinner meetings, during which time such topics as strategies for ward attending, job search strategies, and information management have been addressed. In addition, I have been asked to lead a national consortium of HM providers to create a real-time, browsable electronic database of programs with HM electives for allowing "cross-pollination" and improvement of existing programs, as well as a "roadmap" for those programs who desire implementing a new HM elective.

Advisor Comments

I am the director of the Academic Hospitalist program at Yale School of Medicine and Yale New Haven Health System, and have worked closely with Dr. Sankey on this project. Chris has identified a key opportunity to simultaneously improve the training of Internal Medicine residents while "furthering the cause" of academic Hospital Medicine at our institution. This project melds essential aspects of medical education (via creation of the elective and consideration of means by which it is measured) and quality improvement (via the P-D-S-A-based evolution of the rotation as successive residents complete the elective). The HM elective has been well-received and has garnered momentum on the eve of its second academic year of availability.

As this project spans separate silos in the Health System and Medical School, it places a premium on essential leadership skills of a galvanizing individual. Additionally, this project has potential to become a nidus for a broader (national) discussion about how HM electives are conceived, implemented, and measured – Chris has had such discussions with similarly positioned faculty at other institutions, and has become the focal point of a national consortium on HM electives. As the advisor for this Capstone Project, I affirm that Dr. Sankey has utilized outstanding and essential leadership skills in this endeavor to implement, measure, and ultimately broaden the impact of a HM elective experience for IM resident trainees at our program and beyond. Jeff Wiese and Robert Centor have commented "academic hospital medicine must strive over the next 5 to 10 years to become totally integrated in the academic culture of every institution. This task will take great leadership both at the local level and the national level.[7]" Through his leadership and as evidenced by this capstone project summary, Chris is poised to be such a leader.

References

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Appendix: HM elective survey tool

Yale NewHaven Health
Northeast Medical Group

Resident Elective in Hospital Medicine

Yale School of Medicine

Yale New Haven Health

Please answer the following questions regarding your experience on the Hospital Medicine Elective.

Career Goals

I am considering practicing as a Hospitalist at some point during my career:

Y N

Perceptions of the Elective Experience

Role

1. I had clear information about elective responsibilities and hours of work

Strongly agree Agree Uncertain Disagree Strongly Disagree

2. I had an informative introduction meeting/supporting materials

Strongly agree Agree Uncertain Disagree Strongly Disagree

3. I had an appropriate level of responsibility/autonomy in this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

4. I had opportunities to perform procedures appropriate for my level of training on this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

Instruction

1. I had access to an educational program relevant to my needs

Strongly agree Agree Uncertain Disagree Strongly Disagree

Resident Elective in Hospital Medicine

2. I was an active participant in the educational events in this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

3. I was encouraged to be an independent learner on this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

4. The Hospitalists I encountered on this elective were enthusiastic and addressed my questions and needs

Strongly agree Agree Uncertain Disagree Strongly Disagree

Support

1. I had exposure to and positive interactions with health system colleagues/mentors during this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

2. I had adequate access to career advice on this elective

Strongly agree Agree Uncertain Disagree Strongly Disagree

3. I enjoyed this elective experience

Strongly agree Agree Uncertain Disagree Strongly Disagree

4. This elective experience made me feel more prepared to pursue a career in Hospital Medicine

Strongly agree Agree Uncertain Disagree Strongly Disagree

Yale NewHaven Health
Northeast Medical Group

Resident Elective in Hospital Medicine

Yale School of Medicine

Yale New Haven Health

Elective Content Utilization

1. Which elements of the hospital medicine elective did you find most useful? (Please choose 3)
    a. Procedures
    b. Medicine Consults
    c. Orthopedic Co-management
    d. Meetings with Hospital Medicine faculty
    e. RRT
    f. Free time outside of the elective
    g. Billing & coding
    h. Legal aspects of care
    i. Hospital medicine clinical experience
2. Approximately what percentage of your time was spent in each of the following content areas? (Total 100%)
    a. Procedures _____
    b. Medicine Consults _____
    c. Orthopedic Co-management _____
    d. Meetings with Hospital Medicine faculty _____
    e. RRT _____
    f. Free time outside of the elective _____
    g. Billing & coding _____
    h. Legal aspects of care _____
    i. Hospital medicine clinical experience _____

Resident Elective in Hospital Medicine

Narrative Questions:

1. What were your personal goals for this elective? To what extent do you feel you were able to achieve these goals?

_____

_____

_____

_____

2. What did you like about this elective? What had the most educational value (Please provide specific examples)

_____

_____

_____

_____

3. In what ways could this elective be improved? (Please provide specific examples)

_____

_____

_____

_____

4. Would you recommend this elective experience to others? Why?

_____

_____

_____

_____

5. Based on your experience, what areas of Hospital Medicine do you think you have a new interest in exploring after graduation?

_____

Yale NewHaven Health
Northeast Medical Group

Resident Elective in Hospital Medicine

Yale School of Medicine

Yale New Haven Health

Thank you for taking the time to complete this survey, which will be used to improve the experience of future residents on the elective.

Sincerely,

C. Sankey, MD

Chris Sankey, MD, SFHM, FACP

Faculty Director, Hospital Medicine Resident Elective