

RESEARCHERS' CORNER

Two Birds with One Stone: Systematic Reviews to Engage Junior Attending Physicians to Mentor Internal Medicine Housestaff in Scholarly Activity

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The Accreditation Council for Graduate Medical Education (ACGME) requires that internal medicine residency programs assign sufficient educational resources to facilitate housestaff scholarly activities in discovery, integration, application, and education. At the same time, program faculty are expected to engage in and demonstrate scholarship through peer-reviewed funding or authorship.¹ As many program directors know firsthand, however, both groups struggle to accomplish this. A common citation given to programs is "limited or no evidence of housestaff or faculty scholarly activity."²

Obstacles to scholarly activity include lack of faculty mentors, limited resident and faculty time, constrained funding, absence of well-developed research curriculum, low interest, slow institutional review boards, and lack of statistical expertise.³ We sought to overcome the first of these obstacles by engaging junior faculty in a feasible scholarship activity that would lead to ongoing mentorship of housestaff.

We created the Housestaff Research Mentorship Program to foster scholarly work in systematic reviews and meta-analysis by both junior faculty and housestaff. The objectives were: 1) to foster housestaff scholarship through a formal faculty development course and active mentoring; 2) to provide a model scholarly activity curriculum to improve the quality of graduate medical education in our program; 3) to generate manuscripts for publication within a single acade-

mic year; 4) to encourage scholarly activity such as oral and poster presentations in local, regional, and national conferences; and 5) to train housestaff to conduct systematic reviews independently.

A dozen core faculty physicians from the department of medicine at John H. Stroger, Jr., Hospital of Cook County in Chicago were chosen to undergo a five-week training session of one-hour lectures by an institutional expert on how to conduct systematic reviews and meta-analyses. The division chief of hospital medicine was the administrative lead. Screencasts of these training sessions were produced and posted to the intranet to ameliorate scheduling conflicts.

After training was underway, junior faculty generated research questions. The faculty were then matched with two to four housestaff. Matching was done without heroic efforts to align career interests in part because many of the housestaff mentees had career interests (e.g. cardiology, gastroenterology) that were not shared by the faculty mentors. Newly minted mentors then met with housestaff in regular team meetings. The institutional expert had office hours to fill in knowledge gaps not covered during training sessions.

The faculty taught housestaff mentees through various stages of systematic reviews, including generating a research question, designing and conducting a literature search, extracting data, developing evidence

tables, performing statistical analysis with RevMan (a freely available software provided by the Cochrane Collaboration), preparing conference presentations, and writing manuscripts. The faculty were also responsible for assessing the quality of work done by the housestaff. Authorship order was arranged based on the quality and quantity of work, the timeliness of accomplished tasks, overall contribution, and, when housestaff effort and performance were equivalent, random chance.

The program was voluntary, but an informational session was held during a program-wide noon-time conference. Faculty listed 11 topics (Table 1), and 46 residents signed up. Each housestaff was interviewed, and 30 were eventually selected. Housestaff were not selected if they were working on another research project, if their upcoming rotations over the next three to four months were demanding, or if their assigned topic was not of interest. Within 18 months, six projects were completed—three manuscripts were submitted for publication and two were in preparation. One project was awarded the best research poster at our program's Annual Research Day. Three others were presented at regional scientific conferences. On the other hand, one project was withdrawn because the mentor was too busy, and four projects remain stalled in various stages of preparation. In the final tally, we claim roughly 60% success.

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Our failures could be improved upon. Scheduling conflicts were burdensome. Mentors worked independently, never troubleshooting as a group. Interest faded among both mentors and housestaff in part due to critical changes in leadership. Additionally, requisite understanding of the statistical methods was difficult to impart during the training sessions. The biggest challenge was recruiting dedicated mentors with enough time and commitment—departmental support is essential.

Nonetheless, the inherent strengths of the idea shine through. Expert opinion considers critical appraisal of literature and understanding of scientific contributions to medicine as appropriate scholarship activity.⁴ Participating housestaff indicated that close mentorship promoted their own

interest in future, independent projects that (they hope) will enhance future academic career opportunities. Neither the training program nor the scholarly activity generated by it required hard funding. Because systematic reviews require neither approval from an institutional review board nor participant recruitment, they can be completed within a short period of time with just a computer and an Internet connection. Screencasts were made to promote training completion and ongoing sustainability. And, perhaps most relevant to program directors who rightly question the relative importance of scholarly activities given the imperative to learn clinical medicine,⁴ systematic reviews strengthen the clinically relevant skill of critical interpretation and appraisal of the literature.

References

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Table 1. Systematic Review Topics Chosen by Faculty Mentors

Diagnostic indices of compression ultrasonography by non-ultrasonographers for acute (proximal) deep venous thrombosis
Terminal sedation vs usual care for quality of life in terminal stage patients
Hybrid coronary revascularization vs conventional off-pump CABG for major adverse coronary events in patients with multi-vessel coronary artery disease
Diagnostic indices of breast MRI for women with elevated breast cancer risk
Adjuvant imatinib (Gleevec®) vs placebo for disease-free survival in patients with resected gastrointestinal stromal tumor
Diagnostic indices of advanced endoscopy techniques (confocal laser endomicroscopy and narrow-band imaging) for high grade dysplasia or specialized intestinal metaplasia in Barrett's esophagus
Radioactive iodine plus adjunctive lithium vs radioactive iodine alone for hyperthyroidism cure
Eplerenone as monotherapy or add-on therapy vs placebo or other anti-hypertensives for blood pressure reduction in adult patients with essential hypertension
Oral evening primrose oil vs other treatments for relief from mastalgia in women
Humidification vs no humidification for continuous positive airway pressure adherence in obstructive sleep apnea
Stimulants (modafinil or armodafinil) vs placebo for wakefulness in sleep apnea