Holistic Residency Interview Experience

Innovation Highlights

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Purpose: Construct a holistic residency interview experience aimed at identifying exemplary candidates.

Methods: We piloted a holistic interview process for residency applicants. This included a standard interview by faculty and residents, teaching session, interview of the candidate conducted by a patient, and a cartoon drawing activity. Candidates were informed prior to their interview of the pilot program and interview process.

Candidates were given 10 minutes to teach an M3 medical student a non-medical topic of their choice using any techniques and props (laptop, paper, demonstration, etc.). Applicants taught a non-medical topic to allow focus on teaching rather than content. Topics varied greatly. Example included how to perform Brazilian Jiu-Jitsu or how to fold fitted sheets.

Year 3 Medical students evaluated candidates teaching using a 5-point scale (5=highest, 1=lowest) and answering a final question Would you like this candidate to be your intern, why?

For the patient interview, patients were identified from the resident clinic. Patients conducted the interview and answered a final question, Would you: prefer not to have this candidate as your doctor? Be willing to see if your Primary Care Physician (PCP) was unavailable? Like this candidate to be your PCP? Patients were assisted by a staff member who observed interactions. Over time, patients conducted interviews independently. Four patients, (two male) including one paraplegic patient participated. Patients chose their own questions. Examples included: How would you create a relationship with a new patient? What two things are most important in a patient/doctor relationship? How would you inspire change in a patient who has not been compliant with medical advice? Patients were given gift cards for their participation.

Candidates were asked to complete a cartoon drawing activity while waiting for their interview. The goal of this activity was to depict two scenarios: good news vs bad news. This allowed an opportunity to assess candidates ability to reflect, and provided a fun way for candidates to express personality and creativity.

All parts of the interview process will be considered in ranking residency candidates. The relative weights are yet to be determined.

Results: SGAs were asked to complete an evaluation of the faculty development series at the completion of the required clerkship year. 81.0% of SGAs (n=21) rated the faculty development sessions overall as very useful or extremely useful. The SGAs rating of the quality of the session facilitator guides varied by individual subject and ranged from 54.5% to 88.9% rated as very good to excellent. Students were also surveyed on various aspects of the small group curriculum during the required clerkship year, including their SGA-led process groups. When asked to rate the effectiveness of their SGAs in the leading their process groups, 71% rated their SGA as excellent or very good (n=69). Several themes emerged on qualitative analysis of students open-ended answers to the question What techniques did your SGA use to facilitate the process group?. The students commented on the SGAs modeling disclosure, allowing space for self-discovery, and normalizing the challenges of medical training.

Discussion: This pilot focuses on four key areas that determine resident success: ability to work with faculty and residents, teach medical students, communicate with patients, and fit within the program. In addition to improving our interviews we also increased involvement by our stakeholders, namely patients and medical students. This interview experience increases the community and cohesiveness needed to serve our patients here in Detroit.
**Significance:** This approach to interviewing was developed to identify candidates that are a good program fit. Previous work suggests that once invited, the applicant interview is a crucial factor affecting match rank. Throughout this pilot we were able to evaluate our candidates in a holistic manner on the interview day. Enhancing the interview process to provide additional insights into applicants has the potential to increase resident and program success.
Measuring and Understanding Interpersonal Connection in Trainee-Supervisor Dyads

Innovation Highlights
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Purpose: In the past three years, three resident deaths by suicide have profoundly impacted the program directors, attending physicians, and residents of ACGME accredited programs in a private, faith-based medical school in Southern California. While residency training does increase thoughts of death (Sen, 2010), burnout, depression (Ahola, 2007), and interpersonal stress (Prins, 2007), the institution wanted to know if the increase in suicide rates was a direct result of trainee mistreatment, which has been shown in literature to be linked to burnout (Cook, 2014), stress, and depression (Haglund, 2009).

In our literature review, we found that there was neither a construct paradigm, nor an instrument that quantitatively measured the interpersonal connectedness between supervisor-trainee dyads engaged in both medical education and patient care. In this study, we propose a novel measure, the Connection Index (CI).

Methods: Sixty-one questions were administered over four six-month periods to psychiatry residents (total 134) in order to evaluate their weekly supervisors (total 201). Questions were derived from a literature review of psychological scales, ACGME requirements, and a qualitative analysis with residents and medical students to define seven domains: educational alliance, empathy, psychological safety, effective feedback, bullying and harassment, prejudice and bias, and subjective emotional experience.

We found through factor analysis that the 4 domains of educational alliance, empathy, psychological safety and effective feedback naturally grouped together. We combined these questions into a single construct, Connection, and through data reduction developed the twelve-question version, called the CI-12.

After the CI-12 was defined, 3rd and 4th year medical students filled out the CI-12 for the most connected and least connected supervisor they worked with during medical school and explained their scoring and reasoning for each question. 16 transcripts were produced.

Results: The CI-12 showed high scalability (0.78), good construct validity, and high test-retest interclass correlation coefficient (0.95 +/- 0.02). We found statistically significant relationships between Connection with the three domains of burnout, subjective experience, bullying, and bias after controlling for gender, PGY year, and time taken off since graduation.

In the Qualitative component of this study, themes within each domain (psychological safety, feedback, empathy, educational alliance) from all 16 transcripts were identified. Each theme was
supported by specific student quotes to highlight the similarities and difference between the two groups. Examples of recurring themes from the most-connected dyad were: feeling valuable, feeling validated, invested into, given unambiguous communication, given constructive guidance, and supervisors were welcoming and inviting. Examples of recurring themes from the least-connected dyad were: the supervisor was callous, demeaning, belittling, and the student was unseen, never enough, and ignored.

**Discussion:** We discovered that the constructs of empathy, psychological safety, educational alliance and quality feedback were related, and psychometrically fall within a single domain: connection. We validated the connection index by showing that dyad scores were related to trainee burnout and hours per month of supervision. We also discovered recurring themes and qualities of the most connected and least connected supervisor-medical student experience.

**Significance:** We now have a tool to measure connection, which can be used in medical education to improve interpersonal relationships within a supervisor and trainee dyad. Furthermore, we have qualitative data that gives insight into specific words and actions that make trainees feel more or less connected with their supervisors. This quantitative and qualitative data can be used to create training tools to measure supervisor-trainee connectedness and implement interventions to improve upon these relationships.
Separating the interviews and applicant visit by using live video interviews in an Internal Medicine Residency

Innovation Highlights
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Purpose: The time and financial expense for residency interviews and visits are burdensome for students and residency programs. The costs for travel and lodging for students is approximately $3,600 with some estimates ranges exceeding $10,000. A study of estimated costs for internal medicine programs in the 2008-2009 recruitment cycle calculated the total cost of recruitment per program to be $148,345 ($95,966-234,704) and $1042 ($733-1565) per interview conducted. Since then, the number of applications and interviews per applicant has increased with internal medicine residency programs needing to rank 5.6 and 7.0 applicants per filled position in 2009 and 2017, respectively. Programs and applicants need creative solutions to more efficiently interview with and explore one another's fit.

Methods: We implemented comprehensive changes in the traditional resident recruitment format for the 2017-2018 interview and recruitment season. Invited applicants completed a 10 minute video interview with the program director, a 25 minute video interview with one of 7 associate program directors and a 25 minute telephone interview with a faculty member. These interviews completely replaced in-person interviews and were scheduled separately to maximize flexibility.

Detailed program information was provided to invited applicants through a special recruitment website which contained brief videos and information which had previously been presented by the program director during visit days. This website served as an enduring resource for applicants throughout the recruitment season.

All applicants selected for an interview were also invited to any one of nine formal applicant visit days (AVD). They could schedule any of the visit dates based on their preference and independent of the timing of their scheduled interviews. Applicants were instructed in writing and via the informational videos on the recruitment website that attendance was not required in order to be ranked. The total time spent with the program by an applicant making a visit was approximately 5 hours.

Results: The number of interviewed applicants increased from 160 in the year prior to 219 during the intervention with 170 (77%) attending an AVD. A survey was completed by 170/219 (61%) interviewed and the recruitment website was rated favorably by 98.5% and 95.4% stated that they had a good understanding of the residency program. Overall, 51% rated the new interview and recruitment experience as better than other programs, 22.7% the same, 21% rated it as slightly worse and 5.4% much worse.

Discussion: Through the implementation of the this split interview and visit recruitment process, we were able to interview 37% more applicants with a reduced number of formal visit days. The use of the special recruitment website freed the program director from repeatedly making the same presentation and that, plus the flexible scheduling, allowed all applicants to be interviewed by the program director and an associate program director. Additionally, the applicant visit day was optional so that the time required by applicants to interview was reduced to a range of 1.5-5 hours from a range of 6-15 with our traditional format. This is a 65-90% reduction in time spent at the program for each applicant which increases flexibility and although not measured, reduces lodging expenses. Applicants were able to learn much more about the program through the specialized
website and interviews with the program director, associate program directors and faculty. The format allows applicants to adjust their plans to attend an applicant visit day following the interviews.

**Significance:** Separating the applicant visit and interviews through the use of video is feasible and can allow the opportunity to extend additional interviews. It was perceived favorably by applicants even in the first year. We have made modifications for 2018 but continue the same overall format based on the success.
A Resident as Leader Curriculum

Innovation Highlights
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Purpose: Leadership skills are essential to post-graduate medical training. At most programs, however, clinical leadership skills are acquired predominantly through an apprenticeship model which results in a variable set of skills. This is in large part because best practices are poorly described and there is an absence of high level outcomes associated with curricular interventions to serve as useful metrics.

Therefore, the purpose of our study was to develop and evaluate a Resident-as-Leader curriculum for rising PGY2 internal medicine residents to accelerate the incorporation of clinical leadership skills.

Methods: All 48 categorical interns participated in a longitudinal 4-month curriculum that began at the end of the 2018 intern year through the beginning of PGY2 year. Curricular content was defined by the literature and a consensus-based process and categorized into 5 domains, that an effective team leader: 1) creates a safe learning environment, 2) debriefs with teams, 3) role-models explicitly, 4) runs teams efficiently, and 5) maintains situational awareness. Teaching strategies included self-assessment, small group facilitated discussion, simulation, and video debriefing followed by real-time clinical coaching during the residents first ward block.

We assessed the impact on behavior change through direct observation of morning round leadership, and we scored performance using an assessment instrument with validity evidence. We used observations of PGY3 residents as a comparator and 2017 PGY2 residents as historical controls. Observations occurred July-Aug 2017 and 2018. All residents also completed perception surveys of preparedness and we compared our findings to 3 years of historic controls.

Results: We completed 223 total observations (140 observations of 63 unique PGY2 residents) across two academic years. The mean scores of PGY2 performance were 3.7 (SD 2.2) and 5.3 (SD 1.8) for pre- and post-interventions, respectively. Adjusting for repeated measures, a random mixed model analysis revealed a significant difference between groups (p=0.008). There were significant improvements for all behavioral items except coming to rounds prepared.

A total of 29 (60%) post-intervention PGY2 residents completed the survey. These data were compared to 94 (65%) historic controls and showed that 33% felt prepared to lead a team pre-intervention compared to 93% post-intervention. In response to the question would you recommend this curriculum to peers, 100% responded affirmatively (probably or definitely).

Discussion: We successfully developed, implemented, and evaluated the Resident-as-Leader curriculum and found significant improvements in actual performance among novice PGY2 residents. The curriculum was also highly rated by participants and successfully facilitated the transition from intern to team-leader. These findings help address a gap in clinical leadership training and provide a framework of best practices for resident education.
**Significance:** There are a number of curricular interventions which aim to improve resident leadership skills. Most, however, capture low Kirkpatrick level outcomes such as perception and satisfaction. We demonstrated that a curricular intervention can change resident behavior and introduce best practices into ward rounds. Our work provides a scaffold for how other programs can implement leadership training curricula and characterizes best practices for residents. The future of clinical leadership training should investigate the impact on patient level and learning environment outcomes.