HUMANITIES

A Scientific Approach to Preparation for Residency Interviews...
A Scientific Approach to Preparation for Residency Interviews

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ABSTRACT

Residency programs in the United States and Canada are faced with the difficult task of assessing and ranking applicants for the National Resident Matching Program. Grades, United States Medical Licensure Examination (USMLE) scores, recommendations, and internet-based sources of information impact the decision to offer an interview. Once an onsite interview has been granted, this contact becomes central to the residency program’s goal of populating their residency with individuals who have the best chance of surviving and thriving and the applicant’s goal of gaining admission. Standardized, structured interviews, such as the behavioral based interview (BBI) ensure consistency in the style of questions and method of grading applicants. Preparation for this style of interview will improve the odds of gaining acceptance to a program. Applicants should use the same technique to evaluate the residency program and determine if it best fits their needs and aspirations.

INTRODUCTION

Behavioral-Based Interviews (BBIs) were developed in the 1980s by Tom Janz, an industrial psychologist, to identify the most competent job candidates for a specific job¹. Interview questions are utilized to identify behaviors that pertain to specific job-related competencies to define the candidate’s unique attributes, motives, personal experiences, attitudes, and skills. BBIs improve the inter-rater reliability and predictive validity of the selection process because past behaviors are predictive of future behaviors that impact job performance²-⁴. The savvy applicant must take this opportunity to describe their past actions in a fashion that highlights their strengths.

Throughout the course of training, residents are evaluated according to the six ACGME core competencies; successful residents are those who excel in behaviors pertaining to all six competencies. However, these behaviors are not evaluated in the selection process, and most residencies continue to employ an unstructured resume-based interview process that fails to measure key behaviors.

Although BBIs were originally developed for business interviews, they have become increasingly popular with many professions, including that of hospitality management⁵ and teacher selection⁶, and in residency and fellowship interviews⁷⁻⁷. This article reviews evidence supporting the value of BBI, details a method for highlighting each applicants strengths, and encourages applicants to prepare their own BBI questions to best assess each residency program during the interview process.

The Science Butressing Behavioral Based Interviewing Techniques

Conventional unstructured interviews are resume-based and characterized by a non-score specific, unstandardized evaluation process.
using a questionnaire format. Structured interviews are designed to improve reliability and validity of the interview by standardizing content-related and evaluation-related components of the interview. The same relevant job-related questions are posed to all applicants and the results are recorded by trained interviewers using a rating scale. The content-related component of the interview itself utilizes situational and behavioral questions designed to predict future behavior.

Situational questions are based on the premise that intentions predict future behavior. Resident applicants are presented with hypothetical scenarios and asked questions such as “What would you do?” or “How would you respond?” Opinions are provided in response to situational questions.

Behavioral questions, on the other hand, presuppose that past behavior predicts future actions. In contrast to hypothetical situations, behavioral questions inquire about prior experiences that occurred in one’s life, specific interventions that were initiated, and outcomes that resulted from their actions. For example, to predict whether or not a candidate works well with others, an applicant may be asked to describe a situation where he or she worked as part of a team to solve a problem. The individual will then be asked a set of predetermined questions such as “What was your responsibility on the team?” or “What was the outcome?” that assess competency with respect to teamwork.

While both standardized techniques improve the reliability of the interview process, BBI has demonstrated greater improvement in validity. Of course, the entire interview process rests on a careful definition of the competent physician. In 1999, the profession of medicine, through the ACGME, carefully crafted the six core competencies of all physicians (Table 1). Most BBI questions are rooted in the assessment of these skills.

**What Questions May be Posed during the BBI Interview:**

Residency programs develop interview questions to assess: 1) program-specific goals to address the compatibility of the applicant with the program; and, 2) the broad ACGME core competencies. In fact, the American Association of Medical Colleges (AAMC) recommends that residency programs develop situational or behavioral questions based on three to five of the ACGME competencies depending upon the programs requirements and PGY-1 demands (Table 2). Specific examples of behavioral questions based on ACGME core competencies are presented in Table 2. They also recommend that programs target content expected on day 1 of the internship/residency as opposed to information to be learned throughout training. To achieve the greatest standardization of the interview process, these same questions are then asked at each applicant.

**Preparing for a Behavioral Based Interview:**

1) Developing personal Vignettes to Demonstrate Competency-Related Behaviors

The applicant should use this knowledge to prepare for residency and fellowship interviews by devising personal vignettes from past experiences that relate to the six ACGME competencies. They should highlight desired attributes of a resident physician such as excellent communication skills, creativity, attention to detail, organizational abilities, action orientation, loyalty, ability to be a team player, enthusiasm and flexibility.

One method of crafting useful vignettes based on prior experiences is the STAR (Situation or Task, Action, Result) format. This simplifies complex information and allows each applicant to maintain their own personal style. Since there may well be a number of interviews over a period of weeks or months, it is best to record the vignettes in outline form or prose to review the night before each interview. Recording the vignettes along the lines of the
<table>
<thead>
<tr>
<th>ACGME Competency</th>
<th>Description</th>
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<tbody>
<tr>
<td>Systems-Based Practice</td>
<td>This represents awareness of the health care system and a responsibility for population health. An individual who exemplifies this competency demonstrates resourcefulness, and is mindful of cost-effective care.</td>
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<tr>
<td>Professionalism</td>
<td>Commitment to uphold moral and ethical principles with respect to professional responsibilities, and describes humanism, cultural sensitivity, and a devotion to patient-centered care.</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>An ability to assimilate a vast and evolving wealth of scientific information to then apply to patient-centered care. This competency illustrates an ability to appropriately use scientific knowledge applied in a clinical setting.</td>
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<tr>
<td>Interpersonal and Communication Skills</td>
<td>An ability to communicate effectively. Demonstration of this competency entails effective exchange of information with patients and their families, as well as professional colleagues.</td>
</tr>
<tr>
<td>Patient Care and Procedural Skills</td>
<td>This involves exercising the use of evidence-based medicine to improve one's ability to provide care through good clinical judgment and decision-making, with a devotion to patient-centered care.</td>
</tr>
<tr>
<td>Practice-Based Learning and Improvement</td>
<td>The ability to effectively investigate and scrutinize patient care practices, and collaborate scientific evidence appropriately. Competency with respect to Practice-Based Learning and Improvement is a devotion to improve not only one's own practice, but the practice of medicine as a whole as well.</td>
</tr>
</tbody>
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*Table 1: The ACGME Core Competencies of the Medical Profession*
<table>
<thead>
<tr>
<th>ACGME Core Competency</th>
<th>Associated Behaviors</th>
<th>Related Behavioral Questions</th>
</tr>
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</table>
| 1. Systems Based Practice | • Resourcefulness  
• Respect for cost-effective care  
• Awareness of the health care system | 1. Have you experienced issues related to payment of health care in your clinical work?  
2. How did your team navigate these issues while maintaining quality care? |
| 2. Professionalism | • Morally Accountable  
• Cultural, age, gender sensitive  
• Reliability  
• Manages time well | 1. Discuss a time where you were responsible for a mistake and how you reported it to your supervisor.  
2. Give an example of a major challenge you have experienced at school over the last year.  
3. What do you consider your strengths and weaknesses? |
| 3. Medical Knowledge | • Applies science of medicine clinically  
• Appropriately evaluates data for relevance  
• Exhibits justifiable decision-making based on content | 1. How do you handle the exploding amount of scientific information that must be applied to patient care?  
2. Discuss a situation where you disagreed with an attending physician’s diagnosis |
| 4. Interpersonal & Communication Skills | • Effectively communicates in an organized manner, written and orally  
• Listens well to other opinions  
• Builds effective relationships with others  
• Understands patients as people rather than a disease process | 1. Provide an example of a situation where you overcame a communication challenge  
2. Tell me about a time when you built a relationship with someone that you did not like  
3. Discuss a time when active listening helped you to better understand a problem. |
| 5. Patient Care & Procedural Skills | • Shows compassion for patients and their families  
• Uses good judgment  
• Works well with others  
• Makes informed decisions | 1. Describe a time where a patient and/or their family members had a significant effect on you  
2. Provide an example of an instance where you had to create a team.  
3. Tell me about a time you had to educate a patient and/or their family about an aspect of medicine |
| 6. Procedure-Based Learning & Improvement | • Receptive to constructive criticism  
• Accepts failure as part of the learning process  
• Builds on past experiences | 1. Tell me about a time when you had to make a major adjustment in the process of learning something  
2. Give an example of a situation where you failed and what was done to later succeed |

Table 2: Behavioral Interview Questions Pertaining to the 6 ACGME Core Competencies19
ACGME competencies also helps to insure that you are prepared to highlight an appropriate experience based on a range of possible questions (See Table 3).

It is suggested that the applicant rehearse the applying their vignettes to lists of BBI questions that are widely available (Table 4). Three to five carefully crafted vignettes based on your past experiences can be applied to a large number questions. It is critical that the stories highlight ones strengths, but they must be factual. Prevarications are hard to reproduce with exactness and information from your application, recommendations, and other interviews can expose a lie.

2) Demonstrate you are prepared by learning about the Program and faculty interviewers

All applicants should be prepared to answer the question “What makes you interested in our program?” or “What made you decide to apply here?” This information is available on websites that detail important information about the program and names of the chairperson, program director, and faculty. It does not take a lot of time to identify several recent publications of individuals who will be conducting the interviews, and this preparation allows the applicant to discuss common interests. Furthermore, learning about the city itself, as well as common needs of the community in that location, is key for preparation. Students should understand the population demographics and use this knowledge to aid in answering the question of “Why here?”

3) Review the information you have previously submitted in your application

Be prepared to briefly review the “take home” message of the articles you have written and to discuss the medical and non-medical activities you have recorded. The applicant does not want to leave the impression that they did not play a significant role in writing a manuscript because they know nothing about it.

Devising Behavioral Questions for the Applicant to Pose to their Interviewer

It is not uncommon for interviewers to ask whether the applicant has any questions about the program. It might be interpreted as presumptuous if you were to ask, “What is it that makes you most proud about your program?” or “What would your residents say is the strongest aspect of this program.” It is always best to stay away from questions that would compare their program with others….the interviewer might think you would be happier at the other program! Questions about competitiveness in the program could suggest to the reviewer that you are not a hard worker ready to compete! However, it is not at all threatening to ask, “Do your residents have opportunities to work and learn together as a team?” or non-BBI questions such as “Where do your residents usually live?” Whatever you decide to ask, there is no reason to not think this through carefully before the day of the interview.

In summary, every medical student should prepare for their interviews in the same scientific, careful, and measured approach they take to their studies. The results will be obvious within minutes of the start of one’s first interview.
<table>
<thead>
<tr>
<th>Past Personal Experience &amp; Classification</th>
<th>Associated Behaviors</th>
<th>ACGME Core Competencies Demonstrated</th>
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| *Vignette 1: Problem Solving*  
  a) **Situation:** 17 year old female 10 years post-heart transplant with declining kidney function presented to the dermatology clinic with dryness and cracking at the corner of the mouth with surrounding erythematous pustules. She reported sleeping poorly at night and suffering from chronic fatigue during the day.  
  b) **Task:** Determine a suitable treatment for sleep abnormalities in a patient with chronic kidney disease and properly treat her facial rash.  
  c) **Action:** Knowing the receptors are located in the hypothalamus and pituitary, I suggested a low dose of melatonin could provide a save option to alleviate her sleep difficulties and avoid medication dependence. A KOH Prep was performed from a pustule demonstrating pseudohyphae. OTC melatonin 1mg was recommended.  
  c) **Result:** A diagnosis of angular cheilitis secondary to candida infection was made, and she was treated with ketoconazole cream twice daily. Two weeks later, she reported sleeping 8-9 hours a night with minimal daytime fatigue and was pleased with the results of her treatment. | - Science of medicine applied clinically  
- Resourcefulness  
- Shows compassion for patients and their families  
- Justifiable decision making based on content  
- Understands patients as people rather than a disease | - Medical Knowledge  
- Systems-Based Practice  
- Patient Care & Procedural Skills  
- Interpersonal & Communication Skills |
| *Vignette 2: Teamwork*  
  a) **Situation:** 58 year old male in respiratory failure secondary to acute decompensated heart failure  
  b) **Task:** Rapid Sequence Intubation  
  My Role: Endotracheal Tube Placement  
  c) **Action:** Following the initial placement, it was clear that I had directed the endotracheal tube into the right mainstem bronchus based on the absence of breath sounds on the left lung field. The tube was repositioned and was able to hear breath sounds bilaterally during bag-mask ventilation.  
  d) **Result:** Mechanical ventilation was initiated following confirmation of correct placement with end-tidal CO₂ and a chest x-ray | - Receptive to constructive criticism  
- Accepts failure as part of the learning process  
- Makes informed decisions  
- Works well with others  
- Applies science of medicine clinically | - Procedure-Based Learning & Improvement  
- Patient Care & Procedural Skills  
- Medical Knowledge  
- Interpersonal & Communication Skills |

*Table 3:* Examples of Personal Vignettes Applied to the 6 ACGME Core Competencies. Continued on next page.
Vignette 3: Interpersonal Relationship

a) Situation: During an OBGYN clerkship, a labor and delivery nurse provided a steady buffet of high-volume medical students' each morning for 4 several days.

b) Task: Convey my respect for her and her position on the OR team by requesting to meet individually to instruct me about sterile technique.

c) Action: I arrived early the next morning to help set up surgical equipment for the C-section. After being told that I would “just be getting in the way”, I politely agreed, held the door open for her and asked if she could show me how to properly scrub into the case if there was time.

d) Result: We spent 30 minutes going over sterile technique on 5 different instances during the following 3 days. She even went so far as to spend an hour one morning explaining to me all of the different surgical instruments and their uses, and never raised her voice or made me re-scrub again for the remaining 3 weeks.

Table 3 (continued): Examples of Personal Vignettes Applied to the 6 ACGME Core Competencies

- www.thebalance.com/behavioral-job-interview-questions-2059620
- https://www.livcareer.com/career/advice/interview/sample-behavioral
- Hoevemeyer V. High impact interview questions: 701 behavioral based questions to find the right person for every job. New York, AMACOM, 2005.
- https://www.hsu.edu/Career/completelistofbehavioral.pdf
- www.career.uci.edu/docs/grad-students/Interview-Strategies-for-grad-students.pdf
- https://www.hr.ubc.ca/administrators/.../common_behavioral_interview_questions.pdf

Table 4: Sources of Behavioral Interview Questions Useful in Rehearsing for Residency Interviews

REFERENCES


