Generational Differences and Resident Selection

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Rapid changes in the demographic characteristics of people entering the workforce have been noted outside of medicine for decades. Generational differences became a popular talking point among leaders across multiple professions when Generation X began to enter the workforce in the 1980s and 1990s. The stark contrast in values and style led to friction with their baby boomer predecessors. While a number of sociologists and demographers study these generational differences and the impact on workforce in depth [18, 28], the medical profession has been late to incorporate the available knowledge into current practice. Recognizing and understanding differences in learning style, personal values, and expectations among different generations is crucial to facilitating success for the current class of young residents and students. This can be challenging in medicine, particularly in surgical fields where dedication is historically measured by long hours and one's career is prioritized over work-life balance. However, failure to properly understand and appreciate the differences between our predecessors, ourselves, and our incoming trainees and applicants will negatively impact our ability to recruit future physicians [1]. The purpose of this chapter is to explore what is known about the three generations currently in the workforce and how we can apply our understanding of the youngest generation to the resident interview and selection process.

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Generational Definitions

Baby Boomers

The baby boomer generation is typically defined as those born from 1943 to 1962 and comprises faculty over the age of 55. The onset of this large generation is defined by a momentous historical event, the end of World War II. As this group approaches retirement, the American Urological Association (AUA) census predicts an impending shortage of urologists, particularly in rural locations (2015 AUA census). Baby boomers have been labeled as loyal and dedicated workers. They have a tendency to respect authority and will work hard out of loyalty to their leaders. They see self-sacrifice as a virtue and believe in the concept of "paying dues" [1]. It is easy to see these characteristics translate into the dedicated and ambitious faculty we know over the age of 55. This generation was the first to be raised in the era of television and saw significant value placed on personal prosperity and growth. This drive for prosperity as well as the value they place on self-sacrifice and loyalty can make them appear inflexible and intolerant when faced with the different attitudes and styles of their younger colleagues. Baby boomers have criticized Generation Xers as lacking work ethic, lacking commitment to their jobs, and overall lacking commitment to their careers [9, 22]. We are no longer seeking to recruit this generation into our residencies, but understanding their position is important when considering how to facilitate their recruitment and selection of residents.

Generation X

Generation X is defined as those born between 1963 and 1982. They comprise faculty over the age of 35 and are the group of physicians that began to see significant changes in duty hour restrictions and training expectations. This generation was defined socially by Watergate, the fall of the Berlin Wall, and the rise of MTV. They have been described by some as pragmatic and value global thinking and diversity. However, pop culture has labeled them as cynical and naïve, lacking respect for authority, and valuing nothing [6]. They are derogatorily referred to as the "Me" generation. The literature reviewing Generation X physicians often cites their desire for autonomy and flexible schedules, their emphasis on personal growth and personal relationships over material success, a preference for the latest technology, and flexible attitudes toward diversity [36, 40, 41]. This is also the generation that saw the introduction of significant numbers of women into the workforce (and medicine), leading to a heightened awareness of the compounded generational and gender differences in current mid-career workers. When this group of physicians first entered the workforce, many in the boomer generation assumed they would work less and be more transient than their elder colleagues. A 2006 survey of internal medicine physicians and departmental staff in Canada explored this notion in depth. They discovered that boomers qualitatively viewed the Gen Xers as less committed to their careers; however, when comparing actual working hours, there was no

difference among the groups. In fact, on average, Generation X female physicians worked the most hours per week [22]. It is suggested that the most concrete difference between the baby boomers and Generation X physician is the role that work plays in their life [25]. But in fact, there may be differences in the type of person attracted to medicine from each generation. When assessing the Myers-Briggs personality profiles of surgeons of the boomer generation when compared to Gen X trainees, a statistically significant difference was found in the personality type [37]. Historically, surgeon Myers-Briggs Type Indicator (MBTI) testing had shown a predominance of ESTJ personality type (extraversion, sensing, thinking, judging), while Gen X trainees showed tendency toward ISTJ (introvert), $p = 0.0009$ [37]. While the driver of this difference is unclear, what is important to understand is that there is a fundamental personality difference between many baby boomer and Generation X surgeons. This is important to consider when educating a group of faculty about resident recruitment and selection. What resonates with a boomer may be very different than what resonates with a Gen X faculty member.

Generation Y

Generation Y, also known as millennials, comprises people born between 1982 and 2005. They are the children of the baby boomer generation and are the largest, most educated generation yet. These are our current medical students and residents. Millennials are the resident applicants we seek to properly select and recruit. We are just beginning to examine this generation in a prospective fashion, but they are a topic of much discussion and debate across a number of professions. They deserve extra consideration in our efforts to better understand surgical training and resident selection as this cohort of applicants will be the ones entering the workforce for the next two decades.

Although not marked by a specific historic event that would define the onset of Generation Y, the early years were defined by uncertainty, which has shaped the characteristics of the cohort. The oil bust in the 1980s, threats of global warming, school violence (i.e., the Columbine High School massacre in 1999, among others), the terrorist attacks of September 11, 2001, and a severe economic recession were all significant events that affected this generation in its youth [38]. They are technologically perceptive, and most grew up with easy access to computers and the Internet and expect to have global information available nearly 24/7. A 2007 survey of more than 7000 college students reported that 97% of students owned a computer, and 94% owned a cell phone [23]. Millennials were raised by baby boomers, who had parental guilt about time devoted to work. This drove an intense focus on reinvestment in their children's lives and daily activities, leading to an overscheduled, overprotected generation of offspring [7]. Parental involvement for this generation is so predominant that many corporations are beginning to include parents in candidate recruitment [34]. Merrill Lynch hosts a "parent day" as a recruitment tool where parents are given a tour of facilities and a presentation on family support in the workplace. Home Depot has a reassuring message to parents on its

website. Even the US Army has modified it's recruitment slogan to include parents. While the slogan "An Army of One" appealed to the Me generation (Generation X), the new slogan is aimed at parents directly, "You made them strong. We'll make them Army strong." As inconceivable as it may sound, factoring millennial's parents into the equation when recruiting them for residency positions is something to consider. In fact, in the previously mentioned 2007 study of college students investigating technology access, the authors discovered that the students surveyed talked to their parents 1.5 times a day on average.

Understanding the depth of parental involvement makes it apparent why Generation Y has also been called the "Trophy Generation." They may have been sheltered from failures as the idea that every participant deserved an award took hold [16, 29]. Despite these somewhat negative connotations, the millennials are actually predicted to emerge as the next "Greatest Generation" and are highly competent, high-achieving individuals, even if they are misunderstood by their predecessors [17].

The social fears and uncertainty that colored their formative years have led millennials to value personal connections, community, collaboration, and teamwork more highly than previous generations [19]. Their technological prowess makes them experts at efficiently gathering digital information, file sharing, and video streaming and gives them a willingness to readily adopt new technology. While their history as overprotected children may be seen in a negative light, in fact that may make Generation Y better at responding to authority than their Generation X faculty [31]. This is a particularly relevant aspect of their collective traits when considering resident selection. Generation Y values close relationships with authority figures and mentors, such as they had with their parents. They are likely to value personal connections made during the residency interview process, and these connections may have an important impact on residency selection trends.

The millennial's roots in highly structured childhoods may at times seem to be at odds with their desires for flexibility and learning autonomy; however, the two concepts can blend well. Millennial learners often want clearly outlined expectations and goals, with regular feedback [5, 32]. This can be a more structured approach to surgical teaching than we have historically been used to, but is appealing to Generation Y. Meanwhile, their ability to access information digitally makes them less likely to value scheduled lectures and traditional reading. Finding a way to connect with this generation as well as giving them a structured framework for learning while simultaneously respecting their need for flexibility may be the key to successfully recruit and mentor this group of applicants.

Resident Selection

As anyone who has the privilege of working with residents knows, good residents make our jobs easy and fun. Periodically, an applicant with all the hallmarks of a future chairperson during the resident selection process will struggle to achieve competency or, worse yet, become a problem resident. A problem-free, high-quality

residency is every program directors' goal. Careful examination of the data available on resident selection is an important step in putting together an excellent residency program with high-achieving and competent future surgeons. The sheer volume of information and statistics available through the ERAS application, as well as what was gleaned over the course of an interview process, can be overwhelming. Understanding which components of the resident application have the highest value in predicting resident success, and which are less meaningful, is critical to compiling a strong rank list. Self-evaluation of a program's strengths and weaknesses is important in determining the best resident fit for a specific program.

USMLE Performance

A 2014 survey of urology residency program directors ranked USMLE performance and letters of recommendation as the two most important factors when evaluating candidates for a residency position [42]. A 2006 multispecialty study found USMLE step 1 scores and clerkship grades to be the most important selection criteria for urology residency positions [12]. When reviewing the literature available for orthopedic surgical training, similar emphasis is placed on USMLE scores [8]. While considerable debate centers around the validity of using USMLE performance to predict residency success, it remains the only standardized, universal objective method of applicant evaluation [42].

USMLE scores do correlate with in-training examination scores across multiple medical specialties, including urology (24–30). In 2012, Grewal et al. published a retrospective review of 29 urology resident files in an attempt to better understand predictors of success. These authors found that "good" test takers in medical school continued to test well as urology residents and were more likely to be rated as "excellent" urology residents when compared to "below-average" test takers [14]. It is clear that high USMLE scores will predict higher in-training examination scores; however, this study is one of the few to associate USMLE score with overall resident performance. Although USMLE has some predictive value in test scores, it is not predictive of non-cognitive performance. There is evidence that USMLE step 2 (CK) scores are better predictors of resident clinical skill, but these scores are often unavailable for the early urology match process. Overemphasizing USMLE scores in resident selection negatively affects diversity. Given the limited evidence to correlate USMLE scores with actual resident quality, it is important to consider multiple other factors when assessing applications for residency positions.

Letters of Recommendation

As the 2014 survey of urology PDs demonstrated, surgical letters of recommendation (LOR) are highly important in the resident selection process, falling just behind USMLE score. This is facilitated by urology being a relatively small field, allowing most applicants to have contact with, and a letter from, a widely known urologist.

A good letter of recommendation includes comments on technical ability, comparison to previous students, a ranking of current students from the same program, a comment on likability, and whether the home program wishes to retain the applicant [13, 39]. An additionally alluring comment describes an applicant as functioning at the level of an intern [13]. When all of this information is included, these letters are invaluable in giving an overall assessment of an applicant's quality. Unfortunately, LOR are not standardized and often do not include all of the relevant talking points. They are nearly uniformly positive. Additionally, a personal knowledge of the writer may alter the way a letter is interpreted. For example, if a certain writer is known by a program director to give glowing recommendations to all their students, that letter may carry less weight than if read by someone naïve to that writer. This fallacy has led some specialties to move toward standardization of letters of recommendation.

In 1996, the Council of Emergency Medicine Residency Directors pioneered this concept with the adoption of a standardized LOR (SLOR) [24]. The SLOR limits hyperbole and ambiguity and is shown to have superior interrater reliability, independent of the level of experience of the interpreter [10, 33]. SLOR are also faster to interpret than a typical narrative-type LOR. The bottom-line superlative response in the emergency medicine SLOR is "Guaranteed Match." It is the least frequently used superlative phrase [15]. This infrequent but meaningful statement attempts to address the fundamental question of "How should we rank this applicant?" [11]. In 2013, a survey was circulated to all emergency medicine program directors to assess their perspective on the utility of the SLOR. Impressively, 94.3% of programs responded, and 99.3% of responders agreed that the SLOR is an important evaluation tool, which should continue to be used. When they were asked to rank the top three factors in deciding who should receive an interview, 92.7% of responders ranked the SLOR first [30]. Emergency medicine is a larger and less competitive field, and adoption of a true standardized LOR may not be practical in urology. However, standardization of the superlative summary of an applicant would be a useful improvement to our current narrative LOR.

Clerkship Grades

Clerkship grades, particularly receiving honors in surgery and urology clerkships, are a popular method of stratifying residency applicants. There is data to suggest that assessing all clerkship grades has even more value than just looking at the urology and surgery rotation grades. Kenny et al. showed in a [26] meta-analysis that both USMLE scores and medical school clerkship grades correlated with overall resident performance [26]. We may consider surgical clerkships to be the most important when assessing an applicant's affinity and value as a urology resident, but special attention should be paid to applicants who demonstrate consistently poor grades in nonsurgical clerkships. This may be a red flag for arrogance or apathy in candidates who make no effort on clerkships they deem unimportant. Basic science course grades have no correlation with residency performance, in-training examination scores, or board scores and thus should not be heavily weighed.

AOA, Class Rank, and Dean's Letters

AOA status is often cited as in important factor when considering a residency applicant; however, not all schools have an AOA chapter, and AOA status appears to have no correlation with in-training examination scores or residency success. The same can be said of class rank, as well as dean's letters. An attempt to improve the quality and utility of dean's letters was made in 1989 when the Association of American Medical Colleges published specific guidelines on letter creation. Interestingly, in 1998, dean's letter writers at all 124 US medical schools were surveyed about the characteristics of their letters. That year, over 300,000 letters were written, comprising over 1 million pages and costing each medical school an average of $26,000 [21]. Nevertheless, only 65% of schools were determined to produce an adequate dean's letter. They are an expensive, time-consuming, and relatively low-yield component of the resident application package. They can become more meaningful when an applicant has had a negative event occur during medical school, or in explaining any extenuating circumstances experienced by an applicant.

Residency Selection Interview

The residency selection interview process remains a highly program-specific process with wide variability in what individual programs value. For example, in the editorial comment on a 2015 article in urology, the Cleveland Clinic stated that their program places a strong emphasis on applicant research endeavors [2]. Meanwhile, other programs are known to place special importance on former collegiate athletes, assuming they will have good work ethic, technical skills, or team player attitudes. This variability in program-specific preferences ensures that candidates across a broad spectrum of personalities and backgrounds will have an opportunity to match. Understanding what traits are valued at your own institution is critical when considering an applicant rank order.

There is significant research in the business sector on interview best practices. Incorporation of these practices into the residency selection process has been somewhat limited. For example, blinded interviews, in which the interviewer has limited access to data on the applicant, improve interview utility and accuracy [20]. The same can be said for structured interviews with standardized questions [3, 4]. Open-ended, goal-directed questions can maximize information gleaned from the interview. A scripted interview, in which all candidates are asked the same questions, can level the playing field somewhat when assessing applicants post-interview. Sample questions for a semi-structured interview are provided in Table 10.1.

Utilization of known interview best practices appears to be poor. A 2016 survey of general surgery program directors in the USA and Canada revealed only 20% of programs used some form of blinding and a mere 5% used standardized interview questions. Meanwhile, 90% of programs reported basing at least 25% of their final ranking on interview score [27]. The interview is critically important for our ability to assess residency applicants, but there is room for improvement in the way we conduct interviews.

Table 10.1 Sample interview questions for a structured interview

No.	Question
1.	What is the most important thing to you, at this point in your life, other than getting into a urology residency?
2.	What are you looking for in a program?
3.	Do you have any personal connections to this area or this program?
4.	Can you describe a situation in which you were in conflict with another person or group and how you dealt with the situation?
5.	What was your most difficult clinical experience so far and how did you deal with it?
6.	What do you know about this program and why would it be a good fit for you?
7.	What have you liked about other programs, and why?
8.	Tell me about a time you were treated unfairly, and how did you handle it?

Some programs have reported increased applicant and faculty satisfaction with a "candidate-centered" interview format [35]. This interview style seeks to integrate the candidate into a typical workday, matching them with a clinical team to spend time in the OR, on rounds, and in clinic. When considering the increasing number of applicants for urology residency positions, this may be an appealing and successful way to limit the number of working days faculty need to set aside to conduct residency interviews.

Uniformity of the resident selection interview should not be a goal. However, incorporating interview best practices and remembering the generational characteristics of our current applicant pool may be a key to successful resident selection and recruitment. Recall that millennials value and remember personal connections made during the interview process. Therefore, focusing on life issues and common interests in addition to the usual urology specifics may aid in recruiting an especially sought-after applicant.

Conclusions

Generational differences have a profound impact on resident surgical education as well as resident selection. The impact of fundamental differences between generations is always felt most strongly when a new generation enters the workforce, and we are seeing evidence of this currently as millennials come of age. As surgical educators, it is critically important that we understand how to motivate and teach the newest generation of residents. An exploration of the differences between ourselves, our predecessors, and our residents is the first step in improving our ability to be good educators. Understanding our variable priorities and work-related behaviors can also improve our ability to teach other faculty how to best educate the millennial generation.

Selecting the best resident for your program is the next important step after understanding the new generation of applicants. While often maligned, USMLE performance remains the only universal objective measure of applicant stratification. Given its inherent inability to assess the intangibles such as likability, work ethic, and technical ability, the other components of the applicant package remain important. Letters of recommendation could be improved with standardization of

the superlative statement, but overall are still a valuable tool in determining a prospective resident's chances of success. Incorporation of interview best practices and exploring new interview formats may increase the utility and accuracy of the residency selection interview. Future efforts should focus on identifying an objective measure of resident competency and success.

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