Who are the ophthalmologists of the future? How will the new generation practice? How will they interact with their professional organizations? What part will technology play in their lives and professions? A new paradigm is in place that will dramatically affect ophthalmologists’ answers to these questions going forward. Given the uncertainty of our future professional lives, it is vital that we anticipate, contemplate, and formulate a plan. To begin this process, the Knapp Symposium at the 2011 Annual Meeting of the American Ophthalmological Society was devoted to a discussion of the ophthalmologist of the future.

Making sense of the tumultuous changes in the delivery of eye care led the American Ophthalmological Society to sponsor a symposium focusing on the ophthalmologist of the future. The topic was approached from 2 perspectives: that of the ophthalmologist and that of the ophthalmic practice environment. This article addresses the ophthalmologist of the future; a separate article addresses the ophthalmic practice of the future.

The ophthalmology workforce of the future will comprise practitioners from different generations. Although based on generalizations, certain generational characteristics are notable and have relevance to how practitioners interact with each other and with patients. Understanding differences in lifestyle expectations, professional and personal motivation, and interpersonal communication will be essential. The tools of the future ophthalmologist will increasingly be digital, resulting in the expectation of immediate access to validated, reasonably complete information. The tools themselves will reshape interactions among mentors, teachers, and students. Professional organizations will need to embrace these tools to enhance a sense of community, supplementing their diminishing role as a source of traditional didactic education.

Generational Characteristics

Ophthalmologists of the future will work in a constantly integrative environment, interfacing with other physicians, support personnel, regulatory and payer agencies, and patients. Just as the ophthalmologist of the future will need to adapt to various cultural differences, it will be necessary to understand and respect generational differences. Social scientists have described generational characteristics based on observations of a broad (nonmedical) population. At the Knapp Symposium, this lens was used to describe how generational characteristics may emerge in medicine. The generational descriptions that follow (Table) are based on the published
In large measure, the generation born between 1922 and 1943, the traditionalists, have disappeared from the workforce. The subsequent generation learned many of its leadership skills from mentors who were traditionalists and may replicate those behaviors in professional interactions with subordinates. Specifically, traditionalists tend to give praise for a job well done, but absence of feedback is also to be considered good news. Similarly, ophthalmic patients are predominantly elderly and therefore traditionalist, and they may expect their physicians to represent more traditional values. However, the future workforce serving this traditionalist patient base will comprise the 3 subsequent generations—baby boomers, Generation Xers, and Millennials—each with strikingly different characteristics and values.

Social science researchers consider baby boomers (78 million in the United States) to be optimists.1 This population was born into a booming post–World War II economy between 1944 and the early 1960s. They occupy senior ranks and leadership positions in academic health centers and bring great ambition to their roles. Boomers have embraced the mission to make a difference in the world, as exemplified by the civil rights movement, the women’s rights movement, and the reaction to the Vietnam War.2 Boomers live to work. They identify and define themselves through their work; therefore, their rewards are job related and include money, title, and recognition.3

The term often applied to Generation Xers (46 million in the United States) is skeptical.1 Born roughly between 1965 and 1980, they may include some of our current residents and junior faculty. Generation Xers became self-reliant because their boomer parents were often busy at work. Many of these latchkey kids raised themselves and have come of age amid increased divorce rates, corporate downsizing, and a roller coaster economy. They commonly feel there is more to life than work. They are more interested in career security than job security and want to navigate professionally in more than a linear dimension, perhaps like rock climbing, rather than progressing along a single axis, like climbing a ladder. They seek to balance life and work, with life taking precedence. Unlike the boomers, this work-to-live outlook emphasizes a fulfilling personal life over changing the world. They are not interested in delayed gratification, preferring instead to be evaluated on merit now. They will work hard but need to be engaged, see results, and have content and meaning in their work. They also want to develop portable skills through their work.4 Generation Xers expect access to the latest technology, mentoring programs that are productive, and regular and specific feedback.4–6 They also expect a family-friendly environment and institutional recognition of the work/life balance.7 Their rewards include freedom, time, upgraded resources, opportunities for development, and results for their résumé.

Our current medical students and trainees, the generation following Generation X, are of the Millennial generation (77 million in the United States).1 Born between 1980 and 2000, they are the children of Generation Xers and of baby boomers who delayed parenthood. They are described as realistic.1 They have grown up with involved parents who praise them liberally and are used to packed schedules and structured time. Their orientation is toward achievement and brand.1 They believe that there is a specific, right school and career for them, so emphasis is placed on amassing the required credentials. Coming of age in the era of increased bicycle helmet and seat belt use, they are safety conscious. They are also globally conscious and attuned to multiculturalism, and they recognize the importance of collaboration and inclusiveness. They are a multicultural group, with nearly 40% between ages 18 and 25 years being nonwhite.8 For them, September 11, 2001, was a defining event, resulting in a respect for heroes, a resurgence of patriotism, and increased political interest.9

For Millennials, the Internet has been omnipresent in their lives and they are connected to technology at all times. They are known as “digital natives” (with Generation Xers being “digital pioneers” and boomers being “digital immigrants”).10 For them, paper and handwritten documents (such as prescriptions) are hopelessly out of date. They identify with technology more than any other generation and therefore have much to offer in the workplace, a fact of which they are well aware. They are uncomfortable without instant access to information and rely on technology to build communities and stay connected to them, eg, through e-mail, instant text messaging, and social networking sites. They are accustomed to instant gratification via the Internet for entertainment, communication, and acquisition of knowledge: delayed gratification is less acceptable than

Table. Generational Characteristicsa

<table>
<thead>
<tr>
<th>Category, Inclusive Birth Years</th>
<th>Rewards</th>
<th>Feedback</th>
<th>Career Goals</th>
<th>Motivation for Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditionalists, 1922-1943</td>
<td>Job well done</td>
<td>No news is good news</td>
<td>Legacy</td>
<td>Loyalty</td>
</tr>
<tr>
<td>Baby boomers, 1944-1964</td>
<td>Recognition, money, corner office</td>
<td>Once a year, lots of documentation</td>
<td>Perfect career, excel</td>
<td>Salary</td>
</tr>
<tr>
<td>Generation X, roughly 1965-1980</td>
<td>Freedom</td>
<td>Sorry to interrupt, but how am I doing?</td>
<td>Portable, variety</td>
<td>Security and salary</td>
</tr>
<tr>
<td>Millennials, 1980-2000</td>
<td>Meaning, flexible work hours, opportunity to volunteer</td>
<td>Constant (praise)</td>
<td>Multiple parallel careers</td>
<td>Personal relationship</td>
</tr>
</tbody>
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for either of the 2 previous generations. Similar to Generation Xers, they seek good leaders in the workplace and look for guided orientation and strong mentoring. They want to be treated with respect from day 1, be challenged, and enjoy their work. Their constant connectivity means that they are used to being able to work anywhere, anytime. Their communication is often scattered with bullet points rather than paragraphs, having been raised with e-mail and texting. Older generations may perceive them as disrespectful in their communication because of their technical savvy, which may result in a casual and informal style. Constant connectivity may have caused them to undervalue face-to-face contact and made them impatient with tasks that require more extensive communication.

Millennials have fewer friends in the workplace, and their loyalty is to self, social network, and career over institution. Like Generation Xers, they seek workplaces that respect their multifaceted interests, including family, community service, and avocations. It may be especially useful in motivating this generation to take time to point out the benefits they will receive from a task, such as increased knowledge and new skills. Millennials will require managers who have skills in setting clear objectives, can provide a broad overview, and take time to offer regular and prompt feedback so they feel valued and successful.

COMMUNICATION

Recognizing that younger generations of ophthalmologists will have different expectations than previous ones is particularly important as it applies to how they will communicate with each other, the health care system, and their patients. New methods of accessing information will have far-reaching implications for how ophthalmology is learned and practiced. The most dramatic advancement in telecommunication technology, the Internet allows instant access to information. This dramatically increased access includes some material that was previously sequestered and unavail-
articles, and interactive educational tools. The ONE Network will provide peer review of non-Academy resources and thus become a trustworthy reference site for ophthalmologists.

The evolution of information technology provides wonderful possibilities for learning. For educators, the challenge is to train new physicians and medical students, who are more likely to use online sources as their primary reference, to recognize the need for accuracy and quality of information through peer review. This way, new physicians will learn to properly use Internet resources and develop trusted educational material that can be shared in an open-access format.

**OPHTHALMIC ASSOCIATIONS**

How does organized ophthalmology engage the younger generations who will be our ophthalmologists of the future? Fostering communication with younger members is key to current and future success and can be enhanced by considering 5 factors: demographics, engagement, community, wisdom, and global perspective.

**DEMOGRAPHICS**

The demographics of ophthalmology are changing. A 2011 American Academy of Ophthalmology membership survey (Figure) showed that of US members, 76% were male and white. Ophthalmology’s next generation, however, the subset of ophthalmologists younger than 40 years, is more diverse.

Because ophthalmic associations are membership, volunteer organizations, leadership demographics must reflect membership. Leadership must recognize that although they may exhibit it differently than previous generations, our new colleagues have a commitment to ophthalmology and want to be represented. Each ophthalmic organization will benefit by having younger ophthalmologists on its board.

**ENGAGEMENT**

Young ophthalmologists must be engaged in member organizations early. Medical organizations have traditionally been hierarchical: respect and deference to leaders and “paying your dues” is part of the culture. By contrast, young ophthalmologists want to be part of the process immediately. The new generation has remarkable communication skills, they are confident, and they have been raised with a focus on self-esteem. They do not value a token presence. This will shape the organizations of the future. To be successful, ophthalmic organizations need younger members with a seat at the table early on.

**COMMUNITY**

The primary purpose of medical organizations has traditionally been education. While ophthalmic organizations branched into advocacy, policy development, leadership development, quality care, and charity, their primary purpose remained education: ophthalmologists attended meetings to obtain continuing education, and organizations existed to address specific educational needs. Today, however, ophthalmologists can choose from dozens of clinical meetings and an array of digital methods for education. So while education remains an important part of ophthalmic organizations, the new glue for organized ophthalmology is a sense of community. Organizations play an enormous role in cultivating the community of ophthalmology. Ophthalmologists tend to be isolated from the medical community, and their work can also create isolation in their personal lives. Technology has redefined community by linking individuals with common interests and creating a “digital neighborhood.” As such, the most important aspect of clinical meetings is no longer to share information, but to sustain the culture and community of ophthalmology. The American Academy of Ophthalmology, for example, is a trusted source, offers peer review, and serves an important role in developing community standards.

**WISDOM**

During their residency, older ophthalmologists attended lectures to absorb information, which was supplemented by textbooks. Currently, the volume of information available about any subject is vast. The ophthalmology resident of 2012 is an expert at instantly acquiring information. As a result, young ophthalmologists increasingly look for wisdom and experience from their senior mentors rather than simply information. Our approach to education should reflect this new paradigm. For example, current educational meetings resemble artistic performances: they have a defined schedule, the speakers are on a stage, and the audience sits and listens. The format is well defined, and the information is carefully prepared and meticulously referenced. To meet the expectations of younger ophthalmologists, however, medical organizations need to move toward educational and communication
programs that are interactive, fluid, and accessible at any time, eg, lectures that can be downloaded as a podcast or be delivered in short video segments and viewed as time permits so that the lecture fits into the doctor’s schedule rather than the inverse.

GLOBAL PERSPECTIVE

Young ophthalmologists grew up in an electronically connected world and have a more global perspective. The commitment to sharing resources and assisting the underserved is genuine. They want to volunteer internationally and locally. They value sustainable living. An organization can energize young ophthalmologists by developing service projects and by providing structure and guidance for volunteering.

CONCLUSIONS

Increasingly, the ophthalmologists of the future will be Millennials and Generation Xers expressing their new values, work, and lifestyles. This will require changes in how they will be educated, employed, and rewarded professionally. It will affect communication with colleagues and patients and will advance the use of technology in the delivery of patient care. It is yet to be seen how these generations of ophthalmologists will negotiate imposed external requirements such as governmental systems, institutional guidelines, and patient care demands in the future. These paradigm shifts may be on a collision course with new public accountabilities and major changes in eye care delivery.

This change will also shape the professional organizations of the future. The sustainability of ophthalmic organizations requires the engagement of their younger generations. Ophthalmology has an extraordinary opportunity to energize its organizations, make them more relevant, and develop a new vision for our future. Ophthalmology must embrace the ideas and the culture of our young colleagues and invite them to help guide us, while senior leadership provides the key resources of wisdom and experience. Our organizations have much to gain by respecting and empowering the ophthalmologists of the future.

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