

Southern Association of Orthodontists

**2016 Scenarios: Future Outcomes for
Orthodontics**

By the

Institute for Alternative Futures



February 24, 2006

About the Southern Association of Orthodontists

Founded in 1921, the Southern Association of Orthodontists is one of eight regional subgroups of the American Association of Orthodontists. The purposes of the non-profit organization are:

- To advance the art and science of orthodontics,
- To encourage and sponsor research,
- To strive for optimal standards of excellence in orthodontic education and practice, and
- To make significant contributions to the dental health of the public.

Southern Association of Orthodontists

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About the Institute for Alternative Futures

The Institute for Alternative Futures is a nonprofit futurist think tank consulting to nonprofits, associations, governments and businesses. The mission of IAF is to help communities and organizations more wisely choose and create the futures they prefer by:

- Providing techniques for organizational and social transformation that will instill vision and integrity;
- Sharing insights gained from leading-edge futures research with a constantly expanding body of integrated knowledge;
- Creating networks of relationships among leaders for more strategic, systemic, global and humane decision-making;
- Developing practices that sustain organizational success in the present while consciously investing in endeavors that expand opportunities for future generations.

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2016 Scenarios: Future Outcomes for Orthodontics

Executive Summary

Major forces of change are already at work shaping the future of orthodontics in education, quality of care, technology, and the business environment. Trends, issues and new developments can come together in surprising ways. Scenarios are stories about the future that combine these forces of change in different ways.

If you think back over the last 10 years, you could probably chronicle significant and surprising changes in orthodontics. These 2016 scenarios look forward and anticipate how different the world may be for you and your colleagues. Each of the scenarios in this report features a different lead character who has found significant opportunity in a very different set of circumstances than those that exist today. None of these scenarios represents a bad or a good future. As more than one reviewer has observed, there is something to love or hate in each.

The first scenario tells a story where incremental progress and adaptations are taken in stride. ***Orthodontic Profession Evolves in Familiar Ways*** explores a future where sophisticated technology makes it easy to tie practices into consortia to share financial and technology resources to create a strong brand for quality care. The growing demand for services in urban areas is met, while creative solutions are needed to provide affordable care to rural and poor communities. Orthodontists are educated in a variety of schools that offer different approaches to overcoming limited resources for faculty. Orthodontists are accepting evidence-based orthodontics as a way to help their patients understand different approaches to their treatment.

The second scenario, entitled ***Smile Specialists Reshape Expectations and Markets***, examines changes in the external environment that give rise to an alternative business model. Large corporate practices are gaining market share in growing suburban areas and adult markets. With limited evidence to justify the medical value of orthodontic treatments, the public is attracted to what they can understand, the desirability of a beautiful smile. Corporations build global relationships to get efficiencies of scale. Corporations grow the capacity to innovate through clever advertising and smart strategy. They can meet changing patient expectations, are quick to adopt new technologies, and stand ready to exploit evidence that is redefining treatment practices.

The third scenario, entitled ***Orthodontic Caregivers Embrace Holistic Care***, explores orthodontics in a world that is coming to value holistic medicine and interdisciplinary collaboration. Ethical solutions to bring quality care to poor and remote areas demonstrate the value of orthodontic care in uniting psychological and physical health. The boundaries within the professional disciplines fade in importance as caregivers focus on patient health. Evidence emerges that good patient outcomes depend on holistic treatment practices. People are beginning to embrace new models of education and lifelong learning that take classrooms into the world to create understanding and

meaning. Orthodontists are joining their colleagues in a community of care that respects everyone's contributions to health.

The fourth scenario, entitled ***Dentofacial Experts Transform Orthodontic Knowledge***, probes what might be possible through advances in science and technology. This is a future where orthodontic expertise is better defined and highly respected by society. Orthodontic research is entering an age of excitement. This draws academia and practitioners closer together as they work to stay abreast of new developments. Collaborative learning technologies are becoming quite robust in supporting continuous learning. Experienced practitioners have joined a large corps of adjunct professors. Orthodontists move up the value chain emphasizing evidence-based orthodontics research and board certification as evidence of their expertise.

Each scenario offers important insights about your future identity as an orthodontist. Someone always adapts and thrives in every situation. Will it be you? While scenarios cannot predict the future, they are powerful tools for helping you anticipate important choices and the potential implications of your decisions.

At the end of each scenario, you will find a set of questions for practitioners and for orthodontic associations. At the end of the report, you will find another series of questions that are designed to help you synthesize the learning across the scenarios. Answering these questions will help you think and act for the future.

Steps to Creating These Scenarios

1. IAF researched trends and issues to develop a report with 11 forecasts

The Southern Association of Orthodontists commissioned the Institute for Alternative Futures (IAF) to conduct an environmental scan of current trends and issues. IAF developed eight extrapolative forecasts and three provocative forecasts that anticipate the forces of change shaping the profession over the next 10 years. These forecasts are summarized below and can be read in their entirety in the report entitled ***Anticipating the Forces of Change in Orthodontics***.

Preparatory Education: Making extensive use of communication technologies, a small number of star professors teach across schools supplemented by adjunct professors who mentor residents in their clinics. Schools find a new source of revenue in short intensive courses to educate dentists in basic orthodontic treatments.

Continuing Education: Corporations that have developed new technologies and appliances find it quite lucrative to educate and certify orthodontists and extender professions in using their technologies and products. Associations will supercede schools as sources of continuing education in business, marketing and technology not

covered by corporate providers. Information technology will also make it easier for orthodontists to continue their training from their offices and homes.

Evidence-based Orthodontics: Consumers have learned to choose their healthcare providers based on evidence of effectiveness, value and safety to help control costs and will want to select their orthodontists on the same basis. Electronic dental records and digital images will create a gold mine of data for academics to evaluate what orthodontic treatments achieve better results. Orthodontists use this information to tailor treatment and achieve better results for their patients.

Licensure: Orthodontic licensing is harmonized across the states. Some states also allow the licensure of foreign dentists and specialists to meet growing demand. However, regulations lag behind new technologies and discoveries in evidence-based dentistry.

Practice Management Technology: Specialized software automates routine aspects of treatment plans, billing and scheduling. Other office functions are outsourced to low cost areas in the southern region or overseas. These advances improve orthodontist productivity. Outcomes data and other consumer report card information are easy to capture and use in marketing and quality control programs.

Appliance Technology: Not only are braces less invasive, but they are also better concealed and more attractive. There are also more customized and accelerated treatment plans. New implant and treatment techniques will also make treatment faster and easier, but will require orthodontists to either update their skills or work in cooperative teams with other providers.

Imaging, Modeling, and Simulations: Orthodontists use in-office imaging, models and simulations to illustrate a suite of treatment options patients can review in choosing the perfect image for their face. They use these technologies to monitor treatment progress and document outcomes. Patients track their progress online and simulate desired outcomes. A high volume of patients is often needed to support the initial and ongoing costs of this technology.

Patient Markets: Three markets are growing as significant alternatives to the middle class adolescent market in orthodontics: image-conscious adults who can afford high-end cosmetic dentistry; re-do adults whose teeth have naturally moved or who failed to comply with retainer plans; and low-cost, basic services patients.

IAF also developed three provocative forecasts intended to challenge conventional wisdom about the operating environment of the orthodontic profession. These scenarios probed education, the business environment, and scientific and technological breakthroughs. These provocative forecasts summarized below can also be found in the report, ***Anticipating the Forces of Change***.

Accelerated Professional Education: Motivated dental students welcome an accelerated approach to dental school and specialty training. They fast-track into orthodontic courses after two years and complete the dental school curriculum and orthodontic specialty education in five years.

Structure of Practice: Corporate and franchise practices will employ economies of scale, effective branding and convenience to compete with existing practices and gain a dominant market share in vanguard cities. Larger practices, both franchises and independent, are common.

No Braces Alternative: Appliance technology changes radically, removing traditional braces as the most common method of orthodontic treatment. Independent wires and mouth-guards are the most common form of treatment. Made of smart materials, these appliance technologies are less visible and can detect changes in alignment and adjust themselves with more force than traditional braces.

2. Orthodontic leaders explored these forces of change in a one-day summit

About 50 orthodontic leaders used this research to explore the 2016 future at a one-day Futures Summit October 22 in Phoenix in conjunction with the SAO Annual Conference. Four work groups helped frame alternative views of the future. The summit participants were intrigued by a number of big questions for the profession:

- What will the future of professional education look like?
- How will quality orthodontic care be determined?
- Who will be the orthodontic patients of the future and what will they value?
- How will the public be educated to identify quality orthodontic care?
- Can access to care be achieved?
- How will practices be structured and which business models will be most common?

3. IAF futurists took these insights imaginatively into the future

IAF used their insights about future challenges and opportunities in crafting four scenarios. As you read these scenarios, you may start to wonder what those people in Phoenix were thinking. IAF takes full responsibility for mixing and embellishing their ideas into a provocative set of scenario stories. As movie disclaimers often say, this is a work of fiction and any resemblance to real people, places and events is purely coincidental. Whether any of these scenarios resemble your future is strictly up to you.

Notice Regarding Compliance with Antitrust Laws

In reading and discussing these scenarios and their implications, please remember that associations, as combinations of competitors, are limited by the antitrust laws in what they can do and the subjects they can discuss. Improving quality of care, increasing availability of care, increasing public knowledge about the profession and treatment options available, and providing ongoing professional education are all legitimate activities for professional associations. Associations should not discuss, adopt, or undertake any rules or activities that would limit the competitive options available to patients, prevent association members or others in the profession from advertising or adopting a particular business model, tend to increase prices charged or reimbursements received by association members, or result in a boycott of any given supplier or provider of competing services.

While each individual orthodontist is free to decide what form of practice is right for him or her, with whom he/she will deal, the prices he/she will charge, and the reimbursement rates he/she will accept, joint decisions on these subjects by an association can be illegal. For a decision to be considered "joint," it is not necessary that a formal agreement has been reached by association members. Therefore, in order to avoid even an appearance of impropriety, association members should not discuss prices for services, reimbursement rates, fee schedules, costs of goods or services purchased by association members, or rules to be adopted or actions to be taken that would limit competition or tend to boycott suppliers of goods used in orthodontics or competing providers of orthodontic services.

2016 Scenarios

Orthodontic Profession Evolves in Familiar Ways

	2008	2012	2016
	—————→		
Education	Using Internet2 and allowing extramural practices mitigate faculty shortages	Most orthodontists give generously to fund faculty chairs for their schools	¼ new orthodontists graduate from non-traditional schools
Quality of Care	Deceptively simple direct to consumer advertising duels with public advertising explaining orthodontic qualifications	Orthodontists accommodate patient interest in evidence-based orthodontics	Regulations for foreign-born dentists and specialists relaxed; board certification becomes important differentiator
Technology	Outsourcing non-orthodontic tasks streamlines practice management	Digital imaging makes sharing and comparing outcomes easier	Association launches virtual treatment registry
Business Environment	Competitive pressures increase on solo practices	Adults make up 1/3 patient population; market solutions emerge to make services affordable for the poor	Practice consortia rapidly consolidating solo practices in cities

Sophisticated technology makes it easy to tie practices into consortia where financial and technology resources are shared to create a strong brand for quality care. The growing demand for services in urban areas is met, while creative solutions are needed to provide affordable care to rural and poor communities. Orthodontists are educated in a variety of schools that offer different approaches to overcoming limited resources for faculty. Orthodontists accept evidence-based orthodontics as a way to help their patients understand different approaches to their treatment.

Dr. John Walker reviews the quarterly financial and patient profile report to prepare for the board meeting of his four-office consortium of practices in the greater Charleston, South Carolina area. The most important item on tomorrow's agenda is whether the partners should purchase the practice of a retiring orthodontist in Allendale. They would really like to help the dental community avert this pending gap in orthodontic care, but the practice is not a good fit to their successful business model. The equipment and office systems are quite dated. Many younger people and their families have moved away from this community, and many who remain may be pressed to afford orthodontic care for their children. Although adults now account for about one third of the patients in the four consortium practices, the Allendale practice has only a few adult patients.

The consortium can meet the community's need by turning the practice into a satellite office. With a small investment in onsite equipment, they can tie the office into the consortium's virtual private network. With digital imaging and seamless information technologies from the chair side to the network, scaling up a successful practice is not that difficult. However, the funding of new imaging and office management technology necessary for a modern practice can be difficult with the smaller volumes of patients in rural areas.

Staffing the office will be a challenge. Dr. Walker has a busy practice, and so do his colleagues in the consortium. No one can spare one or two days to travel to the satellite office. He and another orthodontist are considering recruiting new partners to serve their growing practices and meet the needs of the Allendale patients.

Dr. Walker is looking at three candidates. He favors the woman who is a recent graduate of his own alma mater, because he knows he can count on the quality of her education. She has a solid recommendation from his friend in Nashville, who is becoming quite the rock star of the profession by teaching via Internet2 to several orthodontic schools. For all the fame, his friend confided he would not have stayed in academia without a special exception to have an extramural practice. That's where he was able to put this young woman's potential to the test.

Dr. Walker's second candidate actually has more experience. He graduated from a public university with extensive private funding, has been working for eight years as an employee, and now wants to move into an equity position with a practice. People who have worked with him on a couple task forces in the state association vouch for his professionalism.

The third candidate graduated from a new corporate school in the Caribbean that is growing quickly due to a change in U.S. regulations recognizing board specialty certification for foreign-trained dentists and specialists. Dr. Walker wouldn't even give him a second thought except his family lives in the area, and he speaks Spanish fluently. Dr. Walker thinks he could get more cooperation and better outcomes from that growing segment of his patients if he had an orthodontist on staff who could communicate with the parents in their first language.

Dr. Walker would have just trusted his gut to pick the best person ten years ago. Now the stakes are very high because so many people use the web to check out a doctor's credentials, philosophy of care, and commitment to staying current on the latest evidence-based practices. The "Know the Difference" campaign is educating the public that only orthodontists have the quality education and training to alter dental structure. That's a promise that Dr. Walker, like other board-certified orthodontists, takes very seriously. With so many dentists offering patients aligners and other easy-to-use appliances, he finds people will only choose him if they are satisfied that his approach will lead to a structurally sound and durable outcome.

Staying current on how to get the best outcomes is a challenge, because the research is not as conclusive as Dr. Walker would like for many conditions. Fortunately, he can log on to the professional association's virtual registry of treatment protocols and skim through good information for some specific conditions. He is comfortable using this service because it discloses who paid for the research and who reviewed it. With the number of vendors now marketing claims of faster and more comfortable appliances direct to consumers, Dr. Walker spends a lot more time explaining to his patients the difference between advertising promises and good orthodontic treatment practices.

Dr. Walker smiles as he closes the folder of meeting materials. Since it has been a profitable year so far, at least one decision on tomorrow's agenda will be easy. The partners agree they will each be substantial contributors to the Give Back campaign to endow faculty chairs at the top tier orthodontic schools. Too many schools have been struggling with limited resources. The only way to keep the orthodontic profession's reputation for high quality care is through quality education. The Give Back campaign will reward leading educators for all they do to keep this great profession on track.

The Orthodontic Profession Evolves in Familiar Ways

Provocative Questions to Discuss

For Orthodontists

1. Will technologies and market dynamics drive orthodontists into practice consortia?
2. Will the future make it more difficult to negotiate the balance between orthodontics as medicine and business?
3. How will the profession educate the public about the advantages of orthodontics done by an orthodontist?
4. Will evidence-based orthodontics be important to your practice?
5. Will board certification be necessary to differentiate different capabilities and control the quality of care?
6. How can orthodontists assure access to orthodontic care in difficult to serve communities and populations?

For Orthodontic Associations

1. How will associations define the differences in the quality of orthodontic care and explain them to the public?
2. What will it take to maintain leadership as a source of orthodontic treatment knowledge?
3. What business education and resources can associations provide orthodontists as they create and sustain successful practices?
4. How should associations respond to changes in education, practice models, patient markets and orthodontic treatments?

Smile Specialists Reshape Expectations and Markets

	2008	2012	2016
			
Education	Dental school budgets cut; 5 schools depend on corporate underwriting	20% of orthodontic students accept corporate scholarships	Online corporate university offers MBA on practice management
Quality of Care	Research shows no value of treatment for mild malocclusions; Interest grows in image enhancement	Third-party payers vet treatment options for insurance and medical savings plans	Patterns identified in mining electronic dental records define quality; Non-orthodontists treat mild to moderate malocclusions
Technology	Office automation increases productivity enough to absorb increasing number of patients	Digitization of images and records is commonplace in most practices	Global outsourcing of image analysis, treatment plans and appliance fabrication
Business Environment	Sophisticated retail outlets challenge solo practices for market share	Independent practice or ownership a threatened option for new entrants	Costs drive healthcare decisions putting intense pressure on consumer driven choices

Large corporate practices are gaining market share in growing suburban areas and adult markets. With limited evidence to justify the medical value of orthodontic treatments, the public is attracted to what they can understand, the desirability of a beautiful smile. Corporations build global relationships to get efficiencies of scale. Corporations grow the capacity to innovate through clever advertising and smart strategy. They can meet changing patient expectations, are quick to adopt new technologies, and stand ready to exploit new findings in evidence-based orthodontics that are redefining treatment practices.

Dr. Jessica Chan grabs an iced latte at Starbucks and dashes into Dick's Sporting Goods to pick up a new pair of gloves to protect her hands during this weekend's rock-climbing trip with her family. She and her husband cram as many outings into their hectic professional lives as they can. These weekend adventures mean a lot to the kids.

At first, she wasn't sure she would like working for this Dallas, Georgia orthodontic center. Her professors treated the idea like she was selling out or worse. She just saw it as getting on with the times, and she liked the fast tempo and upbeat working conditions. With so many patients passing through the center's double glass doors every day, the owners could afford to invest in the latest imaging equipment. All to keep things humming along, as the owners were fond of saying in the monthly staff meetings. Thanks to the efficiency of their Brazilian technology center, the corporation's centers have quite a quick turnaround on treatment plans and custom appliances. Dr. Chan even got to travel to Rio last month to check out the operations and meet her professional counterparts there face-to-face. Businesses have to be smarter than average these days to make a profit, and she sure has her eye on a bonus this year.

Corporate profits are humming along despite that major journal saying there is no real evidence to support the value of orthodontic treatment for mild malocclusions. She was amused to see her alumni list server light up after this surprising research hit the news media. Dr. Chan didn't entirely agree with the study, but it really will not have much of an effect on the center's business. The corporation's strong advertising campaign never tried to confuse people with explaining different dental conditions anyway. Their ads have a simple message: come to the Smile Specialists for the right fix at the right price. If people have mild malocclusions, they were diverted to a dental therapist to be fitted for mass-produced aligners.

The center has always had a significant number of adult patients, perhaps because they like knowing they can match the type of treatment to their budgets and lifestyle. Her company offers a number of financing options timed to help people creatively use their insurance and medical savings plans. In the two years Dr. Chan has been there, she has seen a steady shift toward a 60-40 patient mix of adults to children. The corporation's market research shows how successful they have been at making the buying decision easy for image-conscious adults and adults who need minor adjustments to restore earlier treatment. Business particularly surged with the corporation's novel marketing campaign, Picture Yourself Smiling, tied into the popular video cell phones services.

At the alumni weekend last month, Dr. Chan was disappointed when two old friends chose not to come to avoid questions about their involvement in a high-profile lawsuit. Parents sued on behalf of their child over poor outcomes, insisting that the orthodontists did not follow generally accepted evidence based guidelines for care. The lawyers have subpoenaed their electronic records and received them after they were stripped of information identifying specific patients. The lawyers have orthodontic experts reviewing the records to establish a pattern of negligence. If they succeed with this methodology,

everyone speculates that other disgruntled patients will seek damages for pain and suffering.

Without her unfortunate friends present, Dr. Chan became the center of attention at this gathering. Dr. Chan is one of the orthodontists with a cameo appearance in the Picture Yourself Smiling ads. Doing the video shoot was fun, and her kids are very proud to have a minor celebrity for a mom. Can she be blamed that advertising works? It sure beats sitting around complaining about what insurance companies will and won't pay for these days. Create the demand for services and the consumers will find a way to pay. Arguing with insurance companies is a fool's errand unless you have the clout of a major corporation with thousands of patients behind you.

She would have loved to present the cool research her corporation is doing using their massive files of digital records to standardize treatment outcomes. But she could lose her job if she disclosed proprietary research. Her friends would never believe her anyway. They have already dismissed her corporation as just another low-cost provider. They would never guess her company has a quality strategy to gain market share. Dr. Chan thinks a lot about smart strategy these days. She is studying innovation and strategy development in her online MBA program. She has an idea for an innovative business model that would offer basic orthodontic services in poor communities.

When the dean of the dental school made a pitch for everyone to ante up to support the school, Dr. Chan wondered just which strategy the university is betting its future on—a strategy to preserve past practices or to invent a streamlined way to produce quality education outcomes. One strategy might preserve jobs in the faculty, but the other might help the profession adapt to new market realities.

Becoming a smile specialist is not exactly what her dad, the first Dr. Chan in the family, had in mind when he encouraged her to go to orthodontist school. She simply saw an alternative route that fit her lifestyle choices and took it. She saw the perfect way to balance a great career with everything else important in her life.

Smile Specialists Reshape Expectations and Markets

Provocative Questions to Discuss

For Orthodontists:

1. How will you respond to consumer expectations about image enhancement and merchandising?
2. How well does your practice accommodate preferences for different lifestyles and working conditions?
3. What innovations are you adopting to attract patients and improve outcomes?
4. How do you differentiate the value of your services with your patients?
5. Will corporate practice models claim a larger share of the orthodontic marketplace in the next 10 years?
6. What will globalization mean to your practice?

For Orthodontic Associations:

1. What efforts should you make to educate the public about orthodontic care?
2. What initiatives should the profession pursue in order to validate orthodontic treatments and outcomes?
3. What will the successful schools of the future look like? What will continuing education be like?
4. Should society consider orthodontic treatment a privilege available to consumers through marketplace solutions or should it be a right available to anyone needing care?

Orthodontic Caregivers Embrace Holistic Care

	2008	2012	2016
Education	Women achieve parity in dental school enrollment and many qualify for orthodontic schools	Dental schools offer orthodontic short courses online and weekends; extender professionals assert qualifications through licensing	Continuing education designed for interdisciplinary learning across the orthodontic care team
Quality of Care	Many orthodontists participate in philanthropic programs to provide access to care	Studies show orthodontic care correlates strongly with healthier, more successful lives; dentists play key role in preventive medicine	Holistic dentistry moves into medical mainstream; orthodontic care valued for contribution to long-term health
Technology	Technologies remove geographic barriers to orthodontic care	Collaboration technologies improve remote medicine in all fields	Integrated medical communications empower patients to work with care givers to create health
Business Environment	45 million people without health insurance; defined contribution health plans squeeze out discretionary health decisions	National Governors Association calls for innovative community clinics with dental services to meet the underserved; major foundations fund innovative practices	Orthodontists work across a continuum of care taking hand-offs from other caregivers and moving with ease from public health to private health delivery systems

Ethical solutions to bring quality care to poor and remote areas demonstrate the value of orthodontic care in uniting psychological and physical health. The boundaries within the professional disciplines fade in importance as caregivers focus on patient health. Evidence emerges that good patient outcomes depend on holistic treatment practices. People are beginning to embrace new models of education and lifelong learning that take classrooms into the world to create understanding and meaning. Orthodontists are joining their colleagues in a community of care that respects everyone's contributions to health.

Dr. Maggie Summers snaps one last photo of the mountaintop view with all its swaths of red, yellow and orange splendor in late October. She can't even begin to measure the real and psychological distance she has traveled from her Los Angeles childhood to running a dental clinic in Jackson County, Kentucky. Some days she feels more like a missionary than an orthodontist, but her great unwashed are not the people in these Appalachian back roads and hollows. They are the health practitioners eager to reclaim meaning in their lives and see her MacArthur award for pioneering holistic dental care as proof that healing answers to both science and the soul.

She started with a one-year foundation grant to establish dental care in an underserved area. One demonstration grant just led to another as people began to understand her vision of caring for people through high quality dental care. No one visiting her clinic left doubting her "Hope Smiles at Life" program connected dental health to whole health and community well being. Those who feel socially inferior because of their appearance are more likely to have high levels of stress, suffer poor career prospects and have destructive health behavior. People who feel good about themselves have a higher quality of life and are more likely to embrace behaviors that reinforce health. The clinic is nationally recognized for extending the importance of social determinants in health into dental medicine.

Most health clinics struggle to break these patterns of destructive behavior. Dr. Summers saw the potential in the ongoing relationships dentists maintain with their patients. What people took to be her stroke of genius was really quite obvious in hindsight: dental procedures make patients a captive audience for all kinds of health education and personal empowerment. She couldn't just urge her patients to love themselves into better health; she had to fight to get services for them even if it meant securing high-quality orthodontic and other specialty treatments.

She persuaded a dental school to create an executive level program to teach dentists specialty knowledge and skills. She was confident many dentists would welcome a second chance at specialty education if they could take online courses and weekend seminars. She organized a series of one-month rotations at her clinic where the students could interact with highly credentialed and altruistic orthodontists, periodontists, and oral surgeons. These specialists became so enthusiastic about their experience that they are now crusading to introduce these field experiences into traditional residency. With healthcare access a growing national problem, this idea is a win-win. Students gain access to innovative and interdisciplinary care on the ground, and the underserved get quality care.

Dr. Summers didn't anticipate what would happen when people with diverse backgrounds came together in a shared learning experience. People discovered a more fluid understanding of the continuum of care where smooth hand-offs among dentists, auxiliary professionals, and specialists contribute to the health of patients and the wellbeing of an entire community. When these leading practitioners and educators started speaking and writing about their mountaintop epiphany, they created a tipping point that is moving holistic dentistry into mainstream medicine.

Dr. Summers sets off back down the mountain sorting out her next steps. A lot of people would like to dismiss Hope Smiles at Life as a one-time miracle special people created in one special place. She is ready to prove them wrong. She will turn over the administration of the clinic and teaching center to her colleague Hassan Ahmed. He transitioned from orthodontic assistant into the leadership ranks in the Army medical services corps. It was Jackson County's good fortune when he decided on a lark to start his second career at the clinic.

Life is full of unexpected transitions when powerful forces of change are at work. What Dr. Summers accomplished was only genius in hindsight. Ten years ago she just wanted to bring quality dental care to an underserved community. Necessity has always been the mother of invention, but she never dreamed how fertile this period of her life would be. After feature stories on two primetime news shows and a Parade Magazine profile, her email has been overflowing with inquiries from practitioners who want to practice holistic dentistry. Her old friend the dean knew exactly what to say to excite her passions. "Maggie, you could teach this and inspire a whole new generation of orthodontic caregivers."

Orthodontic Caregivers Embrace Holistic Care

Provocative Questions to Discuss

For Orthodontists:

1. How do you view the role of ortho-dentists and auxiliary professionals in the continuum of orthodontic care?
2. What do you believe is the highest value contribution that orthodontists offer society?
3. How would you describe your ideal learning environment for continuing education?
4. How do you keep the focus on the human side of orthodontic care in an increasingly productive and technology-enabled environment?
5. Could you be a leader in creating access to care?
6. What role does orthodontics play in holistic health?

For Orthodontist Associations:

1. What innovations can you champion to improve access to care?
2. How can you contribute to the meaning your members experience in their work?
3. What opportunities are there for interdisciplinary learning in orthodontic education?
4. Should membership be extended to include all orthodontic caregivers?

Dentofacial Experts Transform Orthodontic Knowledge

	2008	2012	2016
			
Education	Widespread use of Internet2 in orthodontic schools; schools try mentorships to give students greater access to clinical training	Schools adopt shorter, streamlined specialty training; multiple channels of continuing education move evidence-based orthodontics into practice	Seamless collaboration between academics and practitioners creates continuous learning
Quality of Care	Patients research medical conditions and expertise online; efficient, comfortable appliances increase patient interest	Quality orthodontic care defined by research is available from a continuum of care providers; research validates importance of structural integrity to health	Biotechnology offers genetic breakthrough to orthodontic treatment; NIH funding for orthodontic research takes off
Technology	3-D imaging improves diagnostic ability and opens up research opportunities	Modeling and simulations used to forecast patient outcomes	R&D collaboratory platforms revolutionize ability for practitioners to join in research efforts
Business Environment	Practices begin diverging to either image appeal or structural expertise model	Board certification essential validation of orthodontic expertise	Challenging structural cases seek orthodontists; mild cases seek alternative treatment approaches

Orthodontic research is entering an age of excitement. This draws academia and practitioners closer together as they work to stay abreast of new developments. Collaborative learning technologies are becoming quite robust in supporting continuous learning. Experienced practitioners have joined a large corps of adjunct professors. Orthodontists move up the value chain emphasizing evidence-based orthodontics research and board certification as evidence of their dentofacial expertise.

Dr. Nathan Steele gives the nod to his assistant to switch off the videocam as he slips the tiny headset off his ear. As he thinks about that last question from the student in Seattle, he remembers the results of an epidemiological study issued last year that might provide some insight. This study tracked different treatment protocols against genetically influenced patterns of growth and development at different life stages. Orthodontic knowledge has certainly accelerated from the days when his best sources were a few trusted colleagues. Now he can ask his visiting resident to upload the study and related data to the Internet collaboratory and ask everyone to run test simulations before the next class.

After monitoring how well many orthodontic schools were using Internet2, the National Science Foundation last year awarded five orthodontic schools a major grant to help move its collaboratory platform into dental education. Dr. Steele leads a team of 11 professors working to make the entire core curriculum available via this wideband channel. One of many adjunct professors now sharing their expertise with orthodontic schools, he finds teaching keeps his knowledge and skills on the leading edge and helps define his brand as a dentofacial expert.

The collaboratory is just one of several learning innovations Dr. Steele is championing. He is excited about his joint venture with the professional association to create Dynamic CE. He has assembled a team of multidisciplinary experts for a weekly Internet2 webcast on blending treatment modalities. It is problem-based learning at its finest. The students offer patient cases that challenge the assumptions of proven practice. Despite a premium price for continuing education, the series sold out last fall.

Problem-based learning is proving to be the most effective way to prepare to pass the boards. With more states allowing tiered licensing of auxiliary professionals to provide access to care, board certification is the only real differentiator of specialist knowledge and capabilities. Recertification forces many orthodontists to try to stay current on the latest research, but he knows it isn't easy. It's his job to try and yet he struggles to keep up with the explosion of evidence-based studies.

A national advertising campaign advises people who care about having a healthy dental structure for life to turn to board-certified experts for treatment. The ads end with a referral to a national website listing qualified experts. This website explains treatment options in laymen's terms and empowers patients with smart questions to ask their doctor. The campaign and website information send a subtle message that only orthodontists can assure the highest quality of care. In his personal opinion, most of what orthodontists hold tightly as their domain can be done just as effectively by trained dentists and other extender professionals. A good procedure is a good procedure whoever does it. What he sees as the real challenge for the profession is educating everyone along the continuum of care to recognize when someone needs specialized dentofacial knowledge and skills.

He pops his phone out to check his to-do list against his schedule. There is just enough time open between patients this afternoon to finish reviewing his colleague's research proposal to the National Institutes of Health. NIH has allocated research dollars to molecular medicine and nanomaterials. She is doing pioneering research into infant tooth development. She thinks she can find a chemical signal in bone and tooth development that could nudge deviations back inside accepted norms.

As an enterprising innovator, Dr. Steele is more interested in applied research. He is working with a bioinformatics company to mine a vast collection of 3-D images for consistent patterns of protocol outcomes. His corporate partner is trying to develop treatment decision-making models that can be used to simulate long-term treatment outcomes. They have a number of practitioners lined up to participate in testing the prototype. Initially, they thought a four-year time horizon would be appropriate for the simulation, but the practitioners urged them to expand the scope of their decision-making model to 25 years since retention is now understood to be a lifetime challenge.

If they can get the orthodontic principles worked out in the modeling, their plan is to start introducing other variables. What happens when other treatment modalities are added to the simulations as possibilities? Could a given patient get better results from a combination of interventions? Figuring out the principles behind judgments like these will take a team of dentofacial experts.

Dr. Steele knows he is close to the day when he will have to decide whether to give up his successful practice and get serious about these business opportunities emerging from science and technology. With 20 plus years as a practitioner, he can make sure the art and humanity of the profession are carried into this future.

Dentofacial Experts Transform Orthodontic Knowledge

Provocative Questions to Discuss

For Orthodontists:

1. How much will basic understanding of orthodontics improve? Where might it dramatically change? Will science and technology make orthodontics simpler or more complex?
2. What steps are you taking to stay current with research? What is your commitment to continuing education? To educating the next generation?
3. How important do you think board certification and recertification will be?
4. Will orthodontists move up the value chain through advanced knowledge and expertise or will patients place a greater value on other dimensions of care?
5. In this scenario, would fewer orthodontists be needed for patient treatment and more needed for education and research?

For Orthodontist Associations:

1. This scenario envisions a tighter relationship between academia and practitioners. How might this affect your relationship to both sectors?
2. How prepared are you with the knowledge sources and delivery systems to keep members current in an explosion of evidence-based orthodontic research?
3. Are you preparing to convene virtual communities around education and research?
4. Should you advocate for board certification? For tiered licensing of orthodontic care providers?

Thinking and Acting for the Future

What Are the Important Changes Ahead for the Profession?

What new knowledge and skill sets will be required to thrive in the future?

How will preparatory education change to meet new demands in orthodontics?

Will there be new competitors or collaborators in orthodontic care?

Will new competitors or collaborators redefine the continuum of care options?

How might treatment practices evolve as art or science?

How will the mix of orthodontic patients change?

What will be the highest value proposition that orthodontists offer?

What will be the public's understanding of orthodontics?

How will changes in science and technology change the profession?

Will evidence-based orthodontics and board certification be important?

What other changes do you see in thinking about these scenarios?

What Do These Scenarios Mean to You Personally?

How do the forces of change anticipated in each scenario affect the decisions you might make about your future?

Which scenario do you think is the most probable scenario to occur by 2016?

Which scenario best describes a 2016 future you prefer?

What important changes will you need to make to get ready for 2016?

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