Six keys for making orthodontics a sustainable dental specialty

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Things change. Continued existence as a dental specialty requires orthodontics' commitment to innovation and hinges on orthodontics' ability to adapt to the evolving needs of the patients being cared for, to the aspirations of new entrants in the field and to the privations of veteran practitioners entrenched in practice. When industry develops a product or service in a manner that is not expected by the market, it is termed a disruptive innovation. In sharp contrast, sustaining innovations are those continuous improvements in existing products or services that enhance competition between practices. History teaches us that in orthodontics some of the most influential innovations have come from industry, ie, the mass produced edgewise appliance, nickel titanium wire, mass produced pre-adjusted direct bond brackets, privately funded university based residency programs without an associated dental school or hospital and clear removable aligner treatment. By and large, innovation from industry has greatly improved the specialty's ability to provide effective, efficient and increased access to care for our patients, has aided us in recruiting the most talented applicants to our residency programs and has made orthodontic treatment an accepted adolescent right of passage. Innovation is an iterative decision-making process and all dental specialties must have the desire, energy and resources to make real-time assessments of an innovation's potential impact both in the short and long term. If orthodontics wishes to sustain dental specialty status, the following six innovations should be rendered obsolete and in their place six disruptive innovations should be operationalized:

Key 1: Applied craniofacial biology must change to dentofacial enhancement

Orthodontics must expand from applied craniofacial biology with questionable utility in a large proportion of cases, to a socio-economic realm along with other enhancement services now performed and accepted by other health professionals such as plastic surgeons, dermatologists and mental health professionals.[1–2] Orthodontists need to come to grips with the fact that we are performing quality of life enhancements and not really curing a disease. The medicalized model of orthodontic need no longer aligns with how patients view our services, nor does it accurately represent what we actually achieve for our patients.

Key 2: Handicapping malocclusion must change to classification of dentofacial traits consistent with wellness

A century after the introduction of Angle's concept of ideal occlusion as the central tenet of orthodontics and the benchmark for assessing a patient's orthodontic need, there is significant evidence in the literature challenging the validity of this hypothesis.[3] The National Institute of Dental Research and the National Research Council of the National Academy of Sciences organized three independent panels to examine the research regarding the definition of malocclusion, variation in dental occlusion and handicapping orthodontic conditions.[4–6] In summary, the three panels concluded a precise and clinically meaningful definition of handicapping malocclusion does not exist. Orthodontic conditions are a continuum of normal biological variation to developmental anomalies and by defining orthodontics as the specialized branch of dentistry concerned with variations in dentofacial traits, which may affect an individual's overall well being, occlusion no longer becomes the sine qua non of the specialty.[7]

Key 3: Duration of orthodontic residency must change from 3 years to 2 years

There is no scientific data to suggest that orthodontic residency programs greater than 24 months duration produce more capable graduates.[8] As well, based on the number of unpublished versus published master's thesis in the orthodontic literature, the specialty should seriously consider the significance of this exercise in orthodontic training programs.[9] Lastly, the opportunity cost of attending a longer residency program coupled with the acquired debt for this additional time in training does not make sound financial sense.

Key 4: Encouraging debt must change to requiring fiscal responsibility

It is completely irresponsible and unethical for our specialty to encourage students to incur handicapping levels of debt en route to becoming orthodontists.[10–11] It is our fiduciary responsibility to prospective entrants to our specialty to foster fiscal responsibility in their life professional.

Published Online: November 8, 2013

Key 5: Funding consumer marketing must change to endowing scholarships

General dentists and pediatric dentists are not the enemy. The Commission on Dental Accreditation requires teaching orthodontics didactically and clinically in both the undergraduate dental curriculum and post-doctoral pediatric dental residency-training program. Many non-orthodontists perform valuable orthodontic services to patients and to portray them to the public as ''under'' educated does not redound to our best interests as an ethical and respected dental specialty.[12–13] Instead, we should be using our immense financial resources to endow scholarships for orthodontic residency programs and set a goal of reducing the educational debt of orthodontic graduates.

Key 6: Technology as the orthodontic driver must change to technology as the orthodontic passenger

Traditional teaching and research has provided the specialty with many answers to the ''how'' of orthodontics but lacked answers to some ''why's'' of orthodontics. In the absence of verifiable facts, dogma has ruled. Technology has been cleverly enmeshed with orthodontic philosophy and is currently driving the scope and manner of clinical practice, e.g.- cone beam computed tomography, self-ligation, articulator mounted casts and accelerated osteogenic orthodontics.[14] It is time to power-down the high technology devices plugged into the wall socket and it is time to power-up the low technology device situated between our ears.

It's time to ***make*** things change…for the better!

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