

The Necessity for Major Reform in Dental Education  
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**“Oral Physician *Redux*:  
Theses for a (Major) Reformation of Dental Education”**

A Topic Paper and Presentation  
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## Introduction

Dental education must change and, as the title of our conclave indicates, the change necessary is major. The following theses (with associated summary of advantages) represent my best judgment as to how dental education should be reformed to address the significant problems of the present, and to anticipate the challenges of the future.

On October 31, 1577, Martin Luther nailed his 95 theses to the door of the church in Wittenberg and launched what became known as the Reformation. Based on history and my 40 years in dental education I admit that I am pessimistic of ever seeing the type of major educational change I believe imperative. However, again drawing on Martin Luther, "*Here I stand, I can do no other.*"

My perspectives on the reformation in dental education I believe relevant and applicable have not changed since publication of the several papers I have previously authored on the topic: *The Oral Physician* (JDE 59:587-597,1995); *It's Time to Launch A Counter-Cultural Movement* (JDE 60:422-432,1996); *The Cultural Wars Are Not Imaginary* (JDE 60:891-894,1966); and *And the Band Played On . . .* (JDE 62:964-974,1998). These can be referenced for further elaboration, documentation, and discussion.

## Reformation Theses

Δ Oral health is an integral and essential component of general health, human function, quality of life, and well-being.

Δ "*One cannot be healthy without good oral health.*" (C. Everett Koop)

Δ The stomatognathic system (the oral cavity and associated structures and functions) is an organ system intimately integrated with all other human organ systems.

Δ The stomatognathic system is a *mirror* of the health of other body systems, with 90% of systemic diseases being reflected through oral manifestations.

Δ Oral diseases potentially affect other organ systems.

Δ Dentistry applies science to the prevention, treatment, and healing of disease.

The application of science to the prevention, treatment, and healing of disease is medicine.

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Therefore, dentistry is medicine.

Δ Dentists are individuals who autonomously and definitively apply the principles of health science to the prevention, treatment and healing of disease.

Individuals who autonomously and definitively apply the principles of health science to the prevention, treatment, and healing of disease are physicians.

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Therefore, dentists are physicians...oral physicians.

- Δ Conceptually, dentistry is a specialty within medicine, not a discipline separate and autonomous from medicine.
- Δ Dentistry is to medicine as otolaryngology, ophthalmology, dermatology, etc. are to medicine; they are equivalent specialties of medicine.
- Δ Dental education emerged in the mid-1800s as a distinct and autonomous educational enterprise due to a lack of understanding and appreciation of the integral relationship of oral health to general health, and the perception that oral health care was a uniquely mechanical endeavor, specifically of the hard dental tissues.
- Δ The Gies Report (1926) affirmed that *“the practice of dentistry should be made an accredited specialty of the practice of conventional medicine or fully equal to such a specialty in the grade of health service.”* The report concluded that *“dentistry cannot now be made a specialty of medicine;”* no doubt due to political circumstances not all that dissimilar to today’s. (emphases added)
- Δ However, it is not inappropriate to suggest that Gies’ and the Committee’s favored view was that dentistry should become integrated with medicine as a specialty. This was clearly the belief of Alfred Owre, the dean of the University of Minnesota School of Dentistry, one of the five members of the Carnegie Committee. Owre spent his academic career at Minnesota, and subsequently as dean at Columbia, advocating for dentists to become specialists of medicine.
- Δ Gies argued for an enlarged view of dentistry in which *“dental surgeons and dental engineers become oral physicians,”* with ‘oral physician’ being Gies’ own terminology.
- Δ Environmental pressures continue to build that force transformation and reformation of dental education, and justify dentistry becoming a specialty of medicine and dentists becoming oral physicians.

- Δ Molecular and genomic approaches to diagnosing and treating disease are revolutionizing health care. *“Progress in biology and medicine is rapid and dental education is not keeping pace. This situation cannot and should not continue.”*  
(Bruce Baum)
- Δ Understanding the basic biological science foundational to health care is becoming increasingly important in our age of advanced scientific understanding of molecular and genomic approaches to disease prevention and treatment that, in general, dental education is not providing for future practitioners of dentistry.
- Δ As the prevention and treatment of oral diseases becomes more biologically, pharmacologically, and genomically based, dentists (as currently trained) will be less prepared, and physicians more prepared, to provide care for patients; making dentists less competitive in the marketplace, with economic consequences.
- Δ The science knowledge base required by a dentist is no different than that required by physicians treating other organ systems. Yet, the typical dental school devotes approximately 850 hours to basic biomedical science instruction, while the average curriculum hours in the basic biomedical sciences for medical students is over 2,000 hours.
- Δ The number of Americans who are medically or pharmacologically compromised continues to grow with the aging of the population. Increasingly, these individuals are dentate and require regular oral health care. The lack of education and training in clinical medicine, and the lack of exposure of dental students to treatment of compromised patients, suggest the inability of dental graduates to properly care for these individuals.
- Δ Understanding the relevance of basic biomedical science to health care is developed by medical students during the period of the clinical clerkships. Dental students do not participate in such clinical clerkships, and thus do not come to fully understand and appreciate the clinical relevance and applicability of the basic biomedical sciences. Dental students rarely have opportunity to treat biologically or pharmacologically compromised patients during their curriculum.
- Δ While inter-related, there is a distinction to be drawn between education and training. Education focuses on understanding *why*, and is primarily cognitive in nature. Training focuses on *how*, and is primarily technique oriented. While there is overlap, preparation for the practice of the other specialties of medicine focuses primarily on education in the pre-doctoral years, leading to the awarding of the M.D. degree; and then more on training during the post-doctoral (residency) years.

- Δ Dental education has integrated education and training throughout the pre-doctoral curriculum. Early focus on training in the dental curriculum has seemingly led to students disparaging and devaluing education in the foundational basic and clinical biomedical sciences. Medical students focused on pursuing clinical careers in the various specialties of medicine seemingly do not disparage education in the biomedical sciences.
- Δ It can be speculated that the focus on training in pre-doctoral dental education versus the focus on education in pre-doctoral medical education could be a contributing factor to only 1% of dental students being interested in academic dentistry versus 30% of medical students being interested in a career in academic medicine. If true, movement to a medical specialty model for dental education could result in a larger and more qualified dental faculty pool in the future.
- Δ In a definitive report on dental education in 1995, the Institute of Medicine (IOM) concluded that dentistry had become increasingly isolated from medicine (and the broader university) and that dentistry should become “more closely integrated” with medicine. The most “far-reaching” recommendation of the IOM for “closer integration,” was for dentistry to become a specialty of medicine.
- Δ Dental education, in order to adequately prepare clinicians for the future, as well as to assume its conceptually appropriate position as an equivalent specialty of medicine, must become integrated with medical education.
- Δ Curriculum integration can be accomplished in a five year educational program, with the first three years coincident with the education of all other medical students, and the last two years specifically devoted to clinical training in dentistry. Such a 3+2 approach would be consistent with the 3+3 programs currently operationally in family practice medicine and internal medicine.
- Δ In the 3 + 3 curriculum in medicine, future family medicine practitioners and internists complete the basic biomedical sciences in years one and two, and participate in clinical clerkships in year three. They then enter the three post-doctoral years, receiving the M.D. degree with their class after completing year one, with the initial residency year being applied the requirements for M.D. degree. They receive a certificate in their respective clinical specialty after completion of the three post-doctoral years.
- Δ A 3 + 2 curriculum in dentistry would be comparable, with the M.D. degree being awarded after the first year of ‘post-doctoral’ clinical training in dentistry and the D.M.D./D.D.S. degree (or specialty certificate) awarded upon completion of the two calendar years of training.
- Δ No assumption is made that the two ‘post-doctoral’ clinical training years dentistry would be a hospital-based residency, or be supported with a residency stipend, as is the case with the 3 + 3 year programs currently existing in medicine.

- △ In five years students could receive both the M.D. and D.M.D./D.D.S. degrees; and thus appropriately be designated oral physicians.
- △ It is hypothesized that such an education/training program would be extraordinarily attractive to individuals desiring to practice dentistry.
- △ It is further hypothesized that such a curriculum would attract additional talented applicants who previously might have chosen the traditional curriculum of medicine as a result of the prestige of the M.D. degree, but would have preferred to study dentistry. The income of dentists today rivals or exceeds that of physicians, thus eliminating economics as an inducement to study medicine and train in one of the traditional medical specialties, as may have formerly been the case.
- △ The financial problems facing dental education today are reaching crisis dimensions. State support continues to decline and students cannot be expected to continue to bear increasing debt through significant tuition increases.
- △ Transforming dental education from a four year pre-doctoral curriculum to a two year postdoctoral training program, integrated with a three year core of medical education, can result in substantive reductions in costs directly attributable to dental education, and a more cost-benefit effective manner of educating dentists. Savings will occur by compacting (and intensifying) the time students are directly involved in training for clinical dental practice, as well as by taking advantage of the substantial infrastructure existing currently in medical education.
- △ There is no justification for maintaining separate and autonomous colleges of dentistry to educate dentists to care for oral health. Doing so is conceptually analogous to attempting to justify separate and distinct pre-doctoral curricula and free-standing colleges for every organ system of the human body. Imagine the redundancy, confusion, fragmentation, and expense faced by universities and society were we to have a separate college for every organ system of the human body; a college of ophthalmology, a college of cardiology, a college of urology, a college of dermatology, and so on for all of the 37 specialties of medicine. Yet, that is conceptually what exists with the autonomous dental educational system currently operational.
- △ Dental schools should 'downsize,' and become fully integrated academically, structurally, and administratively into medical schools as departments of dentistry.

## Summary

Integrating dental education with medical education academically, structurally and administratively responds positively to existent challenging environmental forces, and offers distinct advantages that include, but are not limited to:

- *The graduation of dentists (oral physicians) with a deeper and broader education in science.*
- *The graduation of dentists (oral physicians) with a better understanding of the human organism, and its pathophysiology.*
- *The graduation of dentists (oral physicians) with more sophisticated diagnostic abilities, better able to assess and manage the general health and well-being of patients in the context of providing dental care.*
- *The graduation of dentists (oral physicians) uniquely qualified to treat the oral health of a growing patient population whose clinical management is more complex because they are medically or pharmacologically compromised.*
- *The graduation of dentists (oral physicians) with the perceptual motor abilities to skillfully perform the mechano-technical procedures traditionally associated with dentistry.*
- *The graduation of dentists (oral physicians) who are better prepared to participate in interdisciplinary primary health care delivery.*
- *The graduation of dentists (oral physicians) more competitive in the future environment of health care and more flexible in adjusting to environmental changes affecting health care.*
- *The attraction of highly qualified students to dentistry, who might otherwise have chosen a different specialty of clinical medical practice.*
- *The addressing of the complaint of some dental students regarding the lack of intellectual stimulation associated with current curricula.*
- *The creation of an academic and administrative structure in which dental education can be more cost-effective and less expensive.*
- *The creation of an educational program that permits both dentists (oral physicians) and physicians working in other clinical fields to re-train and cross-train, thus increasing flexibility for all.*
- *The (re)awakening of physicians-at-large to the importance of the teeth and the stomatognathic system to general health and well-being.*

- *The improved coordination and integration of medicine and dentistry's programs of patient care, biomedical research, health services research, and public and professional service.*

## Concluding Comments

Many within and without our profession have been galvanized by the Surgeon General's Report on Oral Health in America, documenting the profound disparities that exist in oral health among Americans. I believe segregation of the stomatognathic system from the remainder of the body has helped contribute to these disparities, and I believe integration will help lead to their reduction. The segregation and relative isolation of dentistry from medicine has resulted in inequitable management of health policy with consequences for societal oral health. The segregation of dental education from medical education serves as the fundamental structure that sustains such health policy segregation and precludes the integration that will help lead to parity and social justice. As William Gies said, "*the practice of dentistry should be made either an accredited specialty of the practice of conventional medicine or fully equal to such a specialty in the grade of health service.*" (Emphasis added)

Another Martin Luther . . . (King), through his passionate personal commitment and eloquence, reconfirmed to the American people that separate is not equal. As long as dental education remains separate from medical education; as long as the first twenty centimeters of the alimentary canal are viewed as separate from the rest of the body, as long as dentistry is viewed as a separate profession, dentistry will not be equal. Racial segregation brought many evils to our society, and segregation of dentistry from medicine has brought its own problems.

While I have great respect for the Institute of Medicine report, and strongly endorse most of its recommendations, I think it falls short of making as strong a recommendation as required to grapple with the problem of isolation, which it identified. That failure is reflected in the questionable use of the phrase "closer integration." No doubt the use of this expression was an attempt on the part of the report's author to structure phraseology that would be acceptable to the diverse committee of eighteen people. However, it is not possible to have "closer integration." One can have closer collaboration or closer coordination, but either you have integration or you do not. Integration means to make a whole by bringing all parts together: to unite; to unify; to make a larger whole. Integration is what we must have. Dental education (and dentistry) must be reformed and restructured and become a component of medical education (and medicine) if we are to overcome the isolation that currently defines the education, scholarship/research, patient care, health policy and financial problems we face. Only integration reflects equality—the equality Gies argued as essential.

*"An attempt to maintain the status quo . . . is a path toward stagnation and decline."*  
(Institute of Medicine)