Introduction to the Macy Study Report


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In this special supplement to the Journal of Dental Education, the results of the three-year Macy study, “New Models of Dental Education,” and its follow-up convocation held at the Emory University Conference Center in Atlanta, Georgia, April 22–24, 2007, are presented. The supplement contains final versions of the papers presented at the convocation and summarizes the formal discussions. It also contains previous publications from the Macy study and two new papers, one by Dr. Dominick P. DePaola and the other by Dr. Allan J. Formicola and colleagues. DePaola describes the academic challenges confronting dental education, and the Formicola group describes the current dental school accreditation system.

The Macy study emerged out of concerns about declines in dental school budgets and the difficulties schools are experiencing in meeting their educational, research, and service missions. These concerns were brought to the attention of Dr. June E. Osborn, president of the Josiah Macy, Jr. Foundation, who was sympathetic to these problems and graciously provided funds for a project to examine the financial feasibility of new models of dental education. The project has had three specific objectives:

1. to develop new models of dental education that address the financial and educational challenges facing dental education,

2. to assess the economic and political feasibility of the more promising models, and

3. to convene a national conference of leaders and experts from stakeholder organizations to gain support for one or more of the models.

The Macy study was based on the principles that underlie dental education. It is important that dentistry reconsider these principles (see Table 1) as they become the basis for how dental education is structured. The Macy study builds on findings from several previous projects of its co-directors, Drs. Allan Formicola and Howard Bailit. These programs are Community-Based Dental Education Programs: A Feasibility Study, funded by the Macy Foundation; the Pipeline, Profession, and Practice: Community-Based Dental Education program, funded by the Robert Wood Johnson Foundation, The California Endowment, and the W.K. Kellogg Foundation; and “The Economics of Dental Education,” a monograph sponsored by the American Dental Association (ADA).

The findings from these and other studies indicate that dental education faces serious financial challenges that require immediate attention. The combination of high operating costs and declining revenues is jeopardizing the quality of education and the place of dental schools in research universities. These problems are not new, but they are reaching an acute stage. The ADA’s 1983 monograph on the future of dentistry was prophetic when it warned that financial problems could lead to school closures. Seven dental schools did close in the 1980s and 1990s. In fact, it is ironic that this convocation took place at the Emory University Conference Center, as the Emory dental school was the first to close its doors.

The Macy study concluded that 1) the financial problems of dental schools are real and certain to increase, 2) the current responses of schools to these economic challenges are not adequate, and 3) the most promising solutions require new models of clinical dental education. The convocation presented and expanded on these conclusions.
Table 1. Principles underlying educational reform in dental education

1. Dentistry is a learned, self-regulating profession that is comparable to but organizationally separate from medicine.
2. Every dental school must be an integral part of a university, and the majority must be based at research-extensive universities (Carnegie Foundation definition), where faculty scholars advance the sciences underlying the practice of dentistry and pass this knowledge on to students, residents, and others.
3. Dental schools must have the resources needed to
   • recruit and retain adequate numbers of well-qualified faculty;
   • provide faculty with sufficient income, space, equipment, time, and administrative support to pursue their scholarly activities;
   • recruit and maintain a diverse student body and faculty;
   • maintain their physical plants; and
   • invest in new educational technologies and learning resources.
4. The teaching, research, and service programs of all dental schools must contribute to reducing oral health disparities.
5. Dental students need the same basic understanding of human biology and behavior as medical students and advanced knowledge of the basic, social, and clinical sciences relevant to the diagnosis, prevention, and treatment of oral diseases/conditions in healthy and medically compromised patients.
6. Clinical training should include adequate time in community-based, patient-centered delivery sites, providing evidence-based care to diverse groups of patients, efficiently.
7. The curriculum should prepare graduates to enter practice; however, in the future, this could shift to preparing students to enter general or specialty residency programs.

The Distinct Financial Challenges of University-Based Dental Education

Change in any organization or profession is difficult. Acceptance of the proposed new clinical education models would require the leadership of the dental academic and practice communities to reach consensus on a common vision for the future of dental education. With a common vision, a long-term strategy can be developed and implemented. As noted in a previous Journal of Dental Education article on the Macy project, other health professions have faced similar challenges and, with the right leadership, have overcome equally serious financial and educational problems.5 The prospects for dental education to do so were explored in several presentations and discussion at the Macy study convocation.

In his keynote address, Dr. Bernard Machen looked at dental education from his perspective as president of the University of Florida.6 He pointed out that the current system of dental education is based on principles laid down in the 1926 Gies report. William Gies argued in that report that medical education and dental education require the same strong academic base within research universities. This recommendation led to the closure of many proprietary and stand-alone dental schools, elevating dentistry from a trade to a highly regarded and self-regulating profession. Machen pointed out that, if dental schools were based in community colleges rather than research universities, the cost of dental education would be much lower; but, to remain on par with the other dominant professions—law and medicine—dental schools must have access to the financial resources needed to function successfully in a research university environment.

In response to Machen, several participants pointed out that the Gies vision for dental education as a research university-based discipline is threatened by the recent founding of several new dental schools outside the traditional research university system. Others noted that five research university-based dental schools have closed in the past twenty years and that many dental schools in research universities have few, if any, research grants from the National Institutes of Health. These trends are ominous and, if unchecked, may challenge the standing of dental schools in research universities and, ultimately, the status of dentistry as a self-regulating learned profession.

There was general agreement at the convocation that there is a clear link between the professional status of dentistry and the financial problems facing dental schools. Unless dental schools find the funds needed to invest in highly qualified faculty and provide faculty with the same teaching and research
resources as other university-based disciplines, the capacity of dental schools to function effectively in research universities is in jeopardy. As Machen pointed out, the dilemma is that limited resources have to be split three ways—among education, research, and clinical/service education—and that there have never been sufficient funds to fulfill all three missions. He noted that “financial viability and institutional vitality go hand and glove,” and he urged dental educators to move forward in “redefining and redesigning financial structures.”

Three presentations were made at the convocation reporting on the findings of the Macy study regarding financing dental education. In the first presentation, Bailit pointed out that the financial problems facing dental schools are mainly tied to declines in federal and state support for dental education and to large and growing income disparities between dental school clinical faculty and community practitioners. Schools have responded to these budget problems so far by increasing student tuition and fees and by deferring needed infrastructure investments. Bailit also reported that schools with the most severe budget reductions have experienced significant losses of full-time clinical faculty. He indicated that the impact of financial problems on dental school education is difficult to document. However, it is clear that the reductions have led to an increase in the number of students per full-time clinical faculty member and significant problems recruiting and retaining full-time clinical specialists who have the clinical and scientific education needed to succeed in a research university.

Formicola then traced the reasons why dental schools operate clinics as teaching laboratories that require large subsidies rather than as patient-centered delivery systems where faculty provide care as they supervise students. The latter approach was actually the clinical model proposed by several early dental leaders. The educational and financial benefits of this model were documented in the 1980s by the Pennsylvania Experiment, in which clinician educators provided care while mentoring students. In that model, students completed twice as much clinical work in half the time, and the program covered its costs, including that of faculty and residents. Formicola also noted that dentistry is the only health profession in which students are trained in clinical teaching laboratories. He ended by stating that, unless the basic clinical education model changes, dental clinics will continue to be a major drain on dental school resources.

Bailit, in the third presentation, examined the options for addressing the financial problems of dental schools. He started by noting the options that have little political or economic promise: large increases in state and federal funding for dental education; regionalizing dental education with fewer but larger and more efficient schools; and greater integration with medical education. Then, he described two promising options: 1) move a significant portion of the senior year into community clinics and practices, and 2) operate dental school clinics as patient-centered delivery systems, in which faculty practice as they supervise residents and students. Both of these clinical models, and especially the latter one, show considerable promise: they would significantly improve dental school financial operations, while providing students and residents an excellent education.

A response to these three papers was provided by Dr. Carole Anderson, current interim dean of The Ohio State University College of Dentistry and a former nursing school dean and assistant provost of an academic health center. Anderson expressed her support for reorganizing dental school patient care programs. In fact, she expressed surprise that dental school clinics do not operate as patient-centered delivery systems and are frequently closed to conform to faculty and student schedules. She indicated that dental education is clearly out of step with the mission of service clinics seen in medicine, pharmacy, and nursing education.

In the ensuing discussion, participants expressed support for community-based dental education. Dr. Eric Howland, dean of the Louisiana State University School of Dentistry, reported that, after the school’s buildings were ravaged by Hurricane Katrina, senior students received all of their clinical training in community clinics and private practices and, importantly, those students performed well on national boards and the state licensing examination. There was also considerable discussion about the advantages and challenges of converting traditional dental school clinics into patient-centered delivery systems.

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**Impact of Science and Technology**

The next paper was presented by Dr. Dominick P. DePaola, president of The Forsyth Institute. Emphasizing that the dental profession is at a crossroads, DePaola suggested that unless the education of students
keeps up with scientific and technological advances, dentistry will become less of a learned profession and more of a technical occupation.\textsuperscript{11} He listed several drivers of change, including economics, and noted that if the macro environment surrounding dental education does not provide sufficient revenues for schools to meet their academic mission, the standing of dental schools in universities will be compromised. He cautioned that current methods of dental education are outmoded and, citing W. Edwards Deming, reminded the audience that “it is not necessary to change. Survival is not mandatory.”

In reaction to the DePaola paper, Dr. Lawrence Tabak, director of the National Institute of Dental and Craniofacial Research (NIDCR) of the National Institutes of Health (NIH), supported the notion that dental schools need to revitalize themselves in order to conduct NIH-level research.\textsuperscript{12} Tabak cited several NIDCR research solicitations that dental schools did not respond to or in which they lost out to other health disciplines. He asked the convocation participants to think about the future of dentistry using ophthalmology as an example. Do we want dentists to continue to be educated at the highest level of a medical specialist like the ophthalmologist? Or will we allow the dentist to become a technician like most optometrists? If we don’t keep dental schools focused on a high level of scholarship and the field directed to understanding the biology of oral conditions and treatment of the most complex oral-facial conditions, he said, dentists risk becoming technicians.

The other formal reactor, Dr. Sharon P. Turner, dean of the University of Kentucky College of Dentistry, agreed with the need to come up with a unifying vision of dental education.\textsuperscript{13} She highlighted two major challenges to revitalizing dental schools: the current teaching model and facility resistance to change. Not only is the science underlying the practice of dentistry changing, she noted, but so are the art and science of education; specifically, interactive, interprofessional, learner-centered education is replacing the traditional lecture. Also, convincing faculty of the need for change and finding ways to develop new faculty are major barriers to change. Turner ended her presentation optimistically: the “horse is out of the gate,” and change is inevitable.

More Than Finances

In the next section of the convocation, Formicola noted that finances are not the only issue confronting dental education. He stated that schools must make improvements in their educational, research, and service programs to stay on par with other academic units of the university. To address this issue, the Macy study team obtained funds from the NIDCR to establish three “Contemporary Issues in Dentistry” panels. Modeled after a project of the Association of American Medical Colleges, the aim of the panels was to define the knowledge, skills, and attitudes that dental graduates need in key clinical areas. The panel reports, also included in this supplement,\textsuperscript{13,15} cover the following topics: 1) diagnosis and primary health care; 2) oral health care training for medical and dental students; and 3) genetics. The American Dental Education Association (ADEA) plans to circulate the reports to interested schools and to establish expert panels in other subject areas.

In the afternoon, Dr. Lisa Tedesco, dean of the Graduate School and vice-provost for academic affairs at Emory University, reviewed the dental school accreditation process, which affects all aspects of dental school operations and is key to changing the curriculum.\textsuperscript{16} Between 1940 and 1970, she said, there was minimal change in the accreditation process. Since then, it has undergone major review every ten years in an effort to adapt accreditation standards to changes in dental education and society. Tedesco pointed out that the accreditation system in the 1970s was successfully modified and led to significant curriculum innovations. She suggested that the accreditation process needs to be modified again to address the complex range of issues that now confront dental education.

Three individuals gave formal reactions to the Tedesco paper: Dr. Joel Glover, a general dentist and member of the ADA Board of Trustees; Dr. Kenneth L. Kalkwarf, dean of the University of Texas Health Science Center at San Antonio Dental School and past-president of ADEA; and Dr. Caswell Evans, associate dean and professor at the University of Illinois at Chicago College of Dentistry and past-president of the American Public Health Association. Their reactions indicated that the accreditation system is a controversial issue, but an essential component for any major change. Several other deans at the meeting suggested that new accreditation standards could be both a lever and an obstacle to change. ADA President Dr. Kathleen Roth indicated that many dental organizations have expressed concerns about the current accreditation system and, in response, the ADA has appointed a committee to address these concerns.\textsuperscript{17}
Dr. Teresa A. Dolan, dean of the University of Florida College of Dentistry, summarized the convocation in terms of “what a dean worries about.” Finances were at the top of the list, she said, followed by faculty recruitment and clinical operations. After noting that the convocation had addressed all of these issues and urging that the study findings be sent to dental professional organizations and other stakeholder groups concerned about the future of dental education and dentistry, Dolan called on dental leaders to join the change process and take risks to address and resolve the problems of dental education. She concluded that, by staying true to principles, dental education has a strong foundation to overcome current and future challenges.

In summary, we hope that this special supplement to the Journal of Dental Education will provide dental schools with the information necessary to strengthen their financial structures. The two clinical teaching models proposed—dental school-operated, patient-centered delivery systems and community-based education—have the potential to improve dental education and to generate resources needed by dental schools to meet their academic missions in research universities.

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REFERENCES