Dental School Clinics as Patient Care Delivery Centers: A Paradigm Shift in Dental Education

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Dental school clinics—by virtue of being centers of student, faculty, and patient activity—are expensive to operate and challenging to run. They also could be potential major revenue sources, efficient patient-centered delivery systems, and stimulating educational hubs. The Macy study recommends a paradigm shift that would transform the current system into a patient-centered delivery model in which faculty treat patients while, at the same time, they supervise students and residents. Early adopters of this model have experienced increases in efficiency, patient satisfaction, and control of costs.

Dental school clinics impact dental school finances for three reasons: 1) they represent the largest block of curriculum time (2,000 of the overall 4,800 hours of time); 2) they require a significant subsidy from the school; and 3) they are under the direct control of the school. Today, dental school clinics are not net financial contributors to their schools’ budgets. Rather, they require subsidy from other sources of revenue. A study of one dental school clinic reports that while a dental unit costs approximately $50,000 annually to operate, a student generates only about $12,000, on average, in gross clinic revenue.\(^1\) National data show a gap between revenues and expenses of at least 25 percent; we think this gap is understated.

Originally, dental school clinics were meant to be self-supporting. They were to operate as close as possible to actual practice, with faculty providing treatment and students providing as much care as they were prepared to give. Instead, the clinics emerged as teaching clinics resembling preclinical laboratories. Patients more or less replaced mannequins. Complex cases tended to be screened out, limiting learning opportunities for students.

While the interests of patients and students provide many good reasons to reorganize dental clinics, this presentation focuses on a different interest: revenues. What must occur for dental school clinics to operate in the black and become net revenue producers for the schools?

The background paper for this presentation demonstrates two important trends regarding clinical education and the dental school clinics.\(^2\) One, clinical education and patient care have been improved by the comprehensive care approach to education and patient care. Two, some schools are trying to move towards patient-centered delivery systems. Both trends are being compromised, however. The first is being impacted by the requirement system, and the second is affected by a lack of active involvement of faculty in the treatment of patients.

**Macy Study Recommendation Part 1**

The Macy study recommends a paradigm shift that moves school clinics purposely toward an efficient patient-centered delivery system in which...
faculty treat patients while students, as members of a team of providers, gain experience based on their level of training. The basic educational premise is that students will gain more experience in patient-centered systems, at both on-site and off-site facilities, than they do in the teaching clinic model; plus, patients will receive more efficient treatment based on contemporary practice standards. The idea was previously described by Gies (1926) and Owre (circa 1930), in the Pennsylvania Experiment (1984), and in Dentistry at the Crossroads: Challenges and Change, an Institute of Medicine report (1995).

Patient-centered care refers to a concept that places what is best for the patient as the central focus of an organized system of care. This concept is in contrast to a system set up to educate students. A patient-centered delivery system is also a good setting for clinical education.

We recently described three schools where the paradigm shift is ongoing. They are the University of Maryland, Columbia University, and University of Louisville. Three elements are required for the paradigm shift:

1) The patient care mission must be distinct and separate from the educational mission.
2) A philosophy for efficient patient-centered care must reflect the patient's perspective.
3) Students must be placed into a real delivery system, both on-site and off-site, for their clinical education, where general dentists become the doctors of record and are actively involved in treatment supported by specialists as required.

Certain specialty clinics in surveyed dental schools and at Columbia, including the oral and maxillofacial surgery clinics and orthodontic and pediatric dentistry clinics, already operate on this premise. Few, if any, restorative dentistry clinics do so. Some schools that operate general dentistry clinics appear to be closer to understanding and adopting the model, although they have not yet moved to the critical step where faculty are actively involved in the treatment of patients. The University of Maryland has separated the clinic operations function from the educational mission by appointing a Clinic Operations Board with no academic responsibilities; this board is focused on providing efficient services for patients. The University of Maryland has also set up a separate 501(c)(3) corporation to improve purchasing and staff management and to put into place responsibility-centered budgeting principles.

Columbia has shown, from the patient's perspective, the importance of quality assurance systems. By taking into account patients' feedback, Columbia was able to dramatically improve the experience of patients in their dealings with administrative functions and their satisfaction at their regular appointments. Columbia also showed that the clinic's productivity can be increased by including experienced postdoctoral students in the provider mix. This was evident from the dramatic increase in the number of patient visits.

The University of Louisville reorganized its clinics into a general dentistry group program led by general dentists. Dental assistants, appointment clerks, and business managers were added to the teams to improve efficiency. Reviews show that students at Louisville have become much more productive under this system. On average, their billings increased 21 percent annually for seven years. Still, at Louisville and the other two schools, students continue as the main providers of care, and the clinics continue to receive substantial subsidies.

These three case studies clearly demonstrate that some schools understand the need to move to patient-centered care. Extrapolating from these examples, and other studies, it is clear that the paradigm shift will require a solid cadre of full-time general dentist faculty backed up by specialists, a large and experienced allied dental workforce, an efficient physical layout, and a compensation/rewards system that favors clinician educators.

There are several lessons learned from the study schools:

- The current culture of teaching clinics will be difficult to overcome. Faculty do not see themselves as active practitioners for clinic patients.
- The current mix of full-time faculty favors specialists. Specialists comprise 51 percent of all faculties; general practitioners comprise only 26 percent of full-time faculties.
- School management systems and facilities operate mainly to reflect the student education program rather than an efficient practitioner model.
- The patient mix, location of the school, and acceptance of the new model by the local practitioners may make such a transition problematic.
- There will be considerable transition costs, and it will take a significant period of time for schools to phase in such a model, depending on current philosophy and operations.
- The shift could be hampered by a lack of specific, detailed, national standards or guidelines for schools to follow for achieving a patient-centered delivery system.
• There will need to be explicit administrative agreements with the parent university about capturing new revenue for the purposes of the dental school.

It is clear that students learn well in patient-centered delivery systems. The Pennsylvania Experiment documented that students are able to provide twice as much treatment in half the time compared to students in the regular school program.³

Macy Study

Recommendation Part 2

The second part of the Macy study recommendation—service-learning in off-site facilities—draws on the experience of the first Macy study and the Dental Pipeline schools. The Dental Pipeline is a collaborative of fifteen U.S. dental schools working to reduce oral health disparities.

The first Macy study determined that off-site treatment centers are a good setting in which to provide clinical experience for students.⁴ Within the Dental Pipeline program, it was demonstrated that, when properly planned and managed, up to three months of rotations are possible in off-site clinics where students can earn credits for graduation and gain considerable clinical experience. Students on average are treating six to seven patients a day at the off-site clinics.

There are additional educational benefits in the off-site centers. Although there are challenges to implementing off-site education, we are recommending that all schools adopt a significant educational component in off-site clinics. Challenges include a reluctance of faculty to accept off-site accomplishments as credit for graduation; the perception by faculty that treatment in off-site centers is inferior; transition costs to develop the proper management and organizational systems to incorporate the off-site clinics as true service-learning experiences; and the notion that the off-site rotation of students will lead to a loss of dental school clinic revenue.

The Dental Pipeline schools have overcome these challenges. On average, they have increased their number of off-site days by 105 percent. Students went from about two weeks off-site at the beginning of the project to over two months. Several schools achieved three months of off-site training in the senior year.

Surveys show that 90 percent of the faculty in the Dental Pipeline schools agree that off-site centers provide a good educational experience for their students. Training by off-site faculty has been calibrated with on-site training, so that faculty members feel comfortable in accepting work accomplished off-site for credit towards graduation. The financial loss of rotating students to off-site centers seems not to be an issue. The returning students are more confident in their skills and patient management abilities and, therefore, able to accomplish more.

Conclusions

To estimate how these two strategies or models affect the overall finances of schools, Bailit et al. calculated the revenues and costs under the models.⁵ They looked at this from a shift to a fully implemented patient-centered delivery system on-site and with a significant amount of student education being provided off-site. We have not calculated transition costs but look to what could be possible in a fully implemented model.

Consideration of these models is essential for the future of dental education because dental school clinics are one of the few sources of income left with the potential to provide positive net revenues for schools. To realize that potential, however, a paradigm shift must occur, for schools will have to separate education and patient care into distinct missions. Achieving that will also require schools to operate efficient patient-centered delivery systems, develop clinician educators, and achieve growth in general dentistry faculty. Off-site education, when set up as a thoughtful, credit-bearing, and service-learning component of students’ education, can lead to lower costs while providing good education.

REFERENCES