U.S. and Canadian Dental School Involvement in Extramural Programming


Abstract: This project was undertaken from July 1999 to August 2000 to identify the status of extramural programming (that is, a program that has undergraduate dental students providing any aspect of dental care to individuals in settings outside the main clinical facility of the school) in North American dental schools. A survey instrument was mailed to all United States and Canadian dental schools concerning student involvement in extramural programming. The response rate was 79.7 percent. Of the schools responding, 3.9 percent did not offer extramural programming. The type of extramural sites, the percentage of schools offering each type of site, and the mean number of weeks students are at each site were as follows: hospital clinics—71 percent, 2.5 weeks; public health clinics—65 percent, 6 weeks; schools and day care centers—49, 1.7 weeks; private dental offices—37 percent, 2 weeks; and “other”—29 percent, 2.5 weeks. The average number of weeks spent at extramural site(s) per class was: freshman 1.9 weeks (SD=4.3); sophomores 2.3 weeks (SD=4.2); juniors 2.6 weeks (SD=1.9); and seniors 5.3 weeks (SD=6.7). Of total student time in extramural programming, 43.3 percent was spent delivering basic clinical services, 24.4 percent comprehensive clinical services, 11.8 percent health education, 11.8 percent preventive dentistry, and 8.7 percent community activities. From the data collected, it is apparent that the majority of North American dental schools are providing a variety of extramural experiences for their dental students. It was found that student involvement in extramural programming increases gradually from the freshman to the senior year.

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Dental school educators are becoming increasingly interested in the opportunities community-based clinical education programs offer.¹ This interest has arisen, in part, due to increasing financial difficulty for dental schools to maintain the staffing, space, and equipment required to operate their clinical education programs.²,³ In addition, there has been increasing societal pressure on dental schools to provide dental care for the underserved as well as growing demand from students for clinical experiences in “real world” settings.³

The increasing interest in community-based education is not limited to dentistry; it is becoming a prominent theme among the other health professions as well.⁴ National and international bodies recently have advocated expanding health profession education in community-based settings.⁵-¹⁴ Two of these reports have called for fundamental changes in the clinical training of dentists,⁶,⁷ which has further fueled interest. Apparently, these factors have had an effect. The American Dental Association’s 1998 Survey of Dental School Satellite Clinics reported that one-third of forty-four dental schools responding to a question about satellite clinics indicated that they planned to develop new associations with off-site or hospital facilities in the next three to five years.¹⁵ Recent publications have examined the impact of community-based dental school clinics, to ascertain the keys that make them successful.¹⁶-¹⁸

One important recent event that heightened interest occurred when Dr. William Kotowicz, Dean of the University of Michigan School of Dentistry, invited a group of dental educators and clinicians to Michigan. This meeting discussed his ideas to make the clinical programs of his school more patient-centered. The attendees at the meeting discussed the fact that dental school clinics were established as “teaching laboratories,” with patient care being secondary. The members of the group agreed that dental schools needed to establish their clinical operations so that their clinics—first and foremost—would be patient-centered, with clinical teaching second. The group gave full support to changes Dean Kotowicz and his faculty proposed for their clinical program, but recommended that serious thought be given to a different clinical model. They believed that since most
dental schools would find it difficult to develop internally operated patient-centered clinics, the viability of rotating students through externally operated clinics and practices, where the main objective is patient care, should be investigated.1

The deans of the two schools participating in the meeting, the University of Michigan and Columbia University, were interested in further exploration of this idea, and decided to apply for a planning grant from a private foundation. The dean of the University of Connecticut School of Dental Medicine joined the planning group, and subsequently, Dr. Howard Bailit, of the University of Connecticut and one of the members of the visiting group, was given the responsibility of preparing the grant application.

The Josiah Macy Jr. Foundation was identified as a potential funding source since it had previously funded studies that evaluated innovative community-oriented curricula.19 In 1998, the Macy Foundation funded the feasibility study, “Community Practice Model of Clinical Dental Education,” conducted by a consortium of the dental schools at Columbia University, the University of Michigan, and the University of Connecticut. The principal investigator for the twenty-four month study was Dr. Howard Bailit.

Among the items examined in the project were: educational impact of placement of students in community clinics and practices; financial impact on the dental schools; social impact of underserved care provision; changes necessary in the curriculum to accommodate community programs; and the current status of community-based programming at some of the nation’s dental schools.1

The investigators conducting the Macy project found that community-based clinical education programs at most of the nation’s dental schools were still in their infancy; thus, there was somewhat limited data on these programs. This fact made it difficult to draw any definitive conclusions from the data.20

Among the findings and recommendations of the project were that well-run community clinical programs have the potential to enhance the education of students, the ability to reduce financial problems facing the schools, and the promise of making dental care more accessible to the underserved. The study specified that there is no one ideal or perfect model for community-based education suitable for all schools; each school needs to design its own community programs according to its milieu and circumstances. The study pointed out that schools must be cognizant of both the clinical and financial resources available in their locality, as well as support from stakeholders affected by placing students out in the community.

The study also revealed that having students devote a significant portion of their clinical education to work at community sites would be a fundamental change in dental education and would require substantial modification in the traditional curriculum. If schools allotted a significant portion of students’ clinical education to community sites, political support from the local private dental practitioners would be essential. The study recommended conducting a demonstration project involving several schools, directing these schools to develop and evaluate different types of community-oriented program models.20

It should be noted that the University of Michigan School of Dentistry launched a major community-based outreach initiative. Because of this initiative, thousands of patients in communities across Michigan currently are receiving quality dental care at patient-centered sites from dental students and faculty. Michigan’s community outreach initiative has generated several important partnerships, and the program now spans the entire state of Michigan, providing dental care for patients of all ages and ethnic backgrounds, particularly the underserved. According to Dr. Jed Jacobson, Assistant Dean for Community and Outreach Programs, Michigan is covering its off-campus student costs through a complex process that includes funding from Delta Dental Fund, the Michigan Department of Community Health (the state’s Medicaid administrator), and the Michigan Primary Care Association. The program has earned the praise of patients and their families as well as the respect of faculty, students, staff, and government officials.4,21

In August 2002, Marquette University School of Dentistry will move into a new dental facility. In conjunction with this event, the school is in the process of designing and implementing a new curriculum, a major component of which will be augmenting clinical extramural programs. Two of the authors (Drs. Abrams and Ayers) were asked to establish a task force on clinical extramural education to investigate what might be appropriate for Marquette University School of Dentistry. In preparing that report, they felt that it would be helpful to survey all North American dental schools concerning their involvement in extramural programming.
Methods

The purpose of this study was to determine the status of extramural programs in North American dental schools. In July 1999, a questionnaire was mailed to all United States and Canadian Dental schools regarding student involvement in extramural programming. Two additional followup mailings, as well as telephone calls, were used to enhance the response rate. The survey was completed in August 2000.

For this survey questionnaire, an extramural program was defined as a program that has undergraduate dental students providing any aspect of dental care to individuals in settings outside the main clinical facility of the school. The survey asked each school to identify the types of extramural sites available to its students and number of weeks students spent at each site. The questionnaire also inquired about the total number of weeks students participate in extramural programs, as well as the amount of time students are involved in specific dental activities. The questionnaire included questions about extramural programming, some of which included brief definitions, divided into six categories: health education; preventive services (prophy, fluoride, etc.); community needs assessment/screenings; basic clinical services (operative, basic perio, and emergency treatment); comprehensive clinical services; and other (specify). A question concerning extramural programming funding also was included. Open-ended questions were asked including: what essential features should be incorporated into an extramural programming if given the opportunity to develop the “ideal” extramural program?

Results

Questionnaires were mailed to sixty-four schools; fifty-four U.S. dental schools and ten Canadian dental schools. A total of forty-four U.S. schools and seven Canadian schools responded, producing a response rate of 79.7 percent. Among the responding schools, two U.S. dental schools reported that they offered no extramural programming (3.9 percent). Accordingly, only the forty-nine schools reporting they offered extramural programming were included in tabulation of the results. The percentage of dental schools offering experiences at specific extramural sites was as follows: hospital clinics 71 percent, public health clinics 65 percent, schools and day care centers 49 percent, private dental offices 37 percent, private community health centers 29 percent, other 29 percent, correctional facilities 27 percent, and mobile clinics 24 percent (see Table 1). The category of “other” site offerings included: international or foreign sites, outreach clinics, special care facilities, health departments, state fair screenings, Veterans Administration hospitals, United States Coast Guard, electives, externships, affiliated hospitals, and geriatric hospitals.

While most schools listed the type of extramural sites available to students, only a portion of schools reported the number of weeks students spend at each site. The mean reported time in weeks, and percentage of schools reporting this data, was as fol-

Table 1. Percentage of North American dental schools offering experiences at select extramural sites (N=49)

<table>
<thead>
<tr>
<th>Category of extramural site</th>
<th>Percentage of schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital clinic</td>
<td>71</td>
</tr>
<tr>
<td>Public health clinic</td>
<td>65</td>
</tr>
<tr>
<td>School and day care centers</td>
<td>49</td>
</tr>
<tr>
<td>Private dental offices</td>
<td>37</td>
</tr>
<tr>
<td>Private community health centers</td>
<td>29</td>
</tr>
<tr>
<td>Nursing homes</td>
<td>29</td>
</tr>
<tr>
<td>Other*</td>
<td>29</td>
</tr>
<tr>
<td>Correctional facilities</td>
<td>27</td>
</tr>
<tr>
<td>Mobile clinics</td>
<td>24</td>
</tr>
</tbody>
</table>

* Included international or foreign sites, outreach clinics, special care, health departments, state fair screenings, Veteran Administration hospitals, United States Coast Guard, electives, externships, affiliated hospitals, and geriatric hospitals.

Table 2. The percentage of schools reporting time their students spend at select extramural sites (N=49)

<table>
<thead>
<tr>
<th>Category of extramural site</th>
<th>Average time students spend in weeks</th>
<th>% of schools responding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctional facilities</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Nursing homes</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Public health clinic</td>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td>Private dental offices</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Hospital clinic</td>
<td>2.5</td>
<td>39</td>
</tr>
<tr>
<td>Mobile clinic</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Private community health center</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>School and day care centers</td>
<td>1.7</td>
<td>20</td>
</tr>
<tr>
<td>Other*</td>
<td>6</td>
<td>22</td>
</tr>
</tbody>
</table>

* Included international or foreign sites, outreach clinics, special care, health departments, state fair screenings, Veteran Administration hospitals, United States Coast Guard, electives, externships, affiliated hospitals, and geriatric hospitals.
The mean reported time students spent at extramural sites, by academic year, was: freshman, 1.9 weeks (range 0.2 to 16); sophomore, 2.3 weeks (range 0.1 to 5.9); junior, 2.6 weeks (range 0.4 to 9); and senior, 5.3 weeks (range 1 to 38) (Figure 1).

In response to the question asking how much time, of their total extramural time, students spent in specific dental activities, the most time was devoted to delivery of basic clinical services (43 percent), followed by comprehensive clinical services (24 percent), preventive dentistry services (12 percent), health education (12 percent), and community activities (9 percent) (Figure 2). The results concerning the time students spent in various activities was adjusted to reflect the fact that not all respondents used the precise categories specified in the questionnaire, nor did all schools’ data always add up to 100 percent. Other reported activities included physical diagnosis, business management rotations, surgery rotations, and observation rotations.

When questioned about funding sources for extramural programs, 63 percent reported tuition/clinical income, 55 percent reported state funding, 35 percent reported private funding, 29 percent reported federal funding, and 91 percent reported “other” sources. “Other” funding sources included clinical fees at extramural sites, grants from an Area Health Education Center (AHEC), general dental school budget, county public health agency, and migrant health grants.

The authors received a variety of responses regarding what essential features should be incorporated into an extramural program if given the opportunity to develop the “ideal” program. The authors observed some recurring themes in these responses, but because they were written responses to open-ended questions that the authors edited, it was not possible to prioritize them. Thus, in no specific order, among the recurring suggestions/recommendations for the “ideal” program were:

- Be competency-based and a minimum of six consecutive weeks
- Provide a “real world” experience for students
- Provide sufficient numbers of patients with diverse dental needs
- Provide sufficient time to start and complete complicated procedures and complex cases
- Provide opportunities to develop patient and practice management skills
- Incorporate into the curriculum and not be “addons”
- Provide an increased awareness of the relationship between the social-cultural and health needs of the community
- Increase competency and efficiency in delivery of patient care
- Provide an understanding of the need for and the advantages and disadvantages of dental practice in a rural area
- Provide an understanding of the responsibility of the dental profession to participate in the resolution of health and health-related problems in the community
- Provide rotations in private practice settings
- Provide interdisciplinary or multidisciplinary teaching
- Conduct community outreach and health promotion activities
- Send only students who have obtained a basic level of clinical competency into the community
- Continue the students’ didactic course work while they are out in the community through the use of distance learning technology
- Allow faculty to continue to treat patients at community sites while supervising students who have achieved basic clinical competency
- Evaluate students’ cognitive skills, clinical skills, professional behavior, and quantitative accomplishments

Discussion

The data obtained from this survey demonstrated that although there are variations in the extent of extramural involvement, the majority of North American dental schools presently do offer students opportunities to participate in community-based programs. Student time involvement in extramural programming increases gradually from the freshman to the senior year, which is appropriate as seniors are able to provide more clinical care to patients than are lower classmen. Although the questionnaire did
Figure 1. Average time spent at extramural sites by year

Figure 2. Percentage of total extramural time students spend in various activities
not ask why specific sites were chosen by dental schools, it would be useful to conduct further study to determine this.

The most frequently offered extramural site was the hospital-based dental clinic, with the public health clinic being second. Students spent the most time at public health dental clinics. These were interesting findings, since relatively few dentists ultimately will practice in hospitals or public health clinics. This may be because most dental schools are located in urban areas and these types of health care facilities are readily available in these areas. This makes it convenient for dental schools to rotate students through these sites and eliminates housing and transportation issues.

Considering that—overwhelmingly—dentists provide care in private dental offices, these findings raise some questions like: Would it be more useful to have students providing care to the underserved in private dental practices? And because there are relatively few public health dental clinics in North America, might it be more effective and logical to have students see how successful private practitioners currently provide care to the underserved in their practices? This would mirror the “real-world” situation and provide a better transition from dental school to private practice, which presently is the primary dental care delivery system in place in North America. The authors believe that, given a choice, most patients would prefer to be treated in a private dental practice, rather than in a public health or hospital clinic. There are private practitioners who accept the underserved as patients, and having dental students participate in their practices should make students feel more comfortable and receptive to treating the underserved. Hopefully, this should increase the likelihood that students will provide care to the underserved upon graduation. Utilizing private practices as potential student sites would provide more sites and result in a better geographic distribution.

These data should prove useful for curriculum planning, development, and evaluation in dental educational institutions. The authors hope that this study will encourage debate and discussion on the future direction of dental education and provision of dental care to the underserved.

REFERENCES
22. Lobb W. Dean’s report of curriculum revision, the foundational curriculum, building a solid foundation for the new school. Report to the Marquette University School of Dentistry faculty, November 30, 1999.