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Authors

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Comments

Ronnelle King participated in this study as a medical student as part of the Senior Scholars research program at the University of Massachusetts Medical School.



Assessing Oral Health Curriculum in US Family Medicine Residency Programs: A CERA Study

Hugh Silk, MD, MPH; Ronnelle King, MD; Ian M. Bennett, MD, PhD; Alexander W. Chessman, MD; Judith A. Savageau, MPH

BACKGROUND AND OBJECTIVES: During the past decade, national initiatives have called for improved oral health training for physicians. We do not know, however, how family medicine residency programs have answered this call.

METHODS: Family medicine residency directors completed a survey that asked how many hours of oral health teaching are included in their programs in addition to what topics are covered and the perceived barriers to this education. The response rate was 35%.

RESULTS: A total of 72% of respondents agreed that oral health is an important topic, but only 32% are satisfied with their residents' competency in oral health. Barriers to this education included competing priorities (85%), inadequate time (69%), and lack of faculty expertise (52%).

CONCLUSIONS: The findings suggest that programs are including more hours than in previous years, yet continued efforts are needed to cover core oral health topics and increase the competency of family medicine residents. Awareness of STFM's Smiles for Life and use of its modules were associated with increased hours of training.

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Oral health is an essential, but often overlooked, aspect of health care. Dental caries can destroy teeth and cause abscesses while periodontitis can contribute to systemic illness such as heart disease and autoimmune disorders. In 2000, the Surgeon General summarized this evidence calling for improved physician training in oral health.¹ Significant disparities in dental health care and outcomes make this a key issue for primary care physicians who provide care to vulnerable populations.²

The Surgeon General's report was a catalyst for change over the past decade. The Society of Teachers of

Family Medicine supported an initiative called Smiles for Life: A National Oral Health Curriculum, funded in part by the Health Resources and Services Administration (HRSA) and Dentaquest Foundation.³ Concurrently, the Institute of Medicine (IOM) issued two reports on this subject,^{4,5} and the Department of Health and Human Services (HHS) launched their own Oral Health Initiative.⁶ The Accreditation Council for Graduate Medical Education (ACGME) also added oral health care requirements with the aim of promoting increased resident training in oral health.⁷ Finally, in the practice domain, more than 40

states now reimburse pediatric primary care providers to perform fluoride varnish.⁸

Little is known about the impact of these efforts on resident education. Our study was designed to collect information about oral health care training in family medicine residency programs nationwide. We aimed to learn what programs are teaching and the factors associated with achieving curricular objectives outlined by Smiles for Life (SFL).

Methods

Data were gathered as part of the CAFM Educational Research Alliance (CERA) survey of family medicine residency directors. The methods and demographics of that survey are presented elsewhere in the current issue of *Family Medicine*.⁹

Residency directors were asked to indicate the number of hours devoted to oral health, coverage of specific oral health topics, barriers to implementing training in this area, use of fluoride varnish, use of the SFL

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Table 1: Frequency and Characteristics of Oral Health Training in Family Medicine Residency Programs*

| Variable | Number of Hours of Oral Health Training | | | | P Value |
|---|---|--------------------------|------------------------------|---------------------------------|---------|
| | Total # (%) n=156 (100) | None # (%) n=6 (4) | 1 to 2 # (%) n=81 (52) | 3 or More # (%) n=69 (45) | |
| Attitudes—agree or strongly agree | | | | | |
| It is important to address basic oral health | 123 (72) | 3 (50) | 64 (79) | 56 (81) | .200 |
| My residents are well prepared to answer ABFM exam questions on oral health | 51 (33) | 2 (33) | 17 (21) | 32 (46) | .004 |
| Satisfied with the competence of residents in oral health | 50 (32) | 3 (50) | 19 (24) | 28 (41) | .045 |
| Oral health curricula | | | | | |
| Aware of STFM Smiles for Life curriculum | 117 (68) | 4 (67) | 53 (65) | 59 (87) | .010 |
| Using at least one module of Smiles for Life | 38 (22) | 1 (17) | 8 (10) | 29 (42) | <.001 |
| Relationship with oral health expert | 51 (32) | 1 (17) | 23 (28) | 27 (39) | .262 |
| Hours with oral health professional in dental setting | | | | | |
| None | 105 (61) | 0 | 66 (80) | 39 (57) | .002 |
| One or more | 47 (27) | 0 | 17 (21) | 30 (44) | .002 |
| Resident training in fluoride varnish | | | | | |
| Trained to apply varnish | 41 (24) | 0 | 15 (19) | 26 (38) | .008 |
| Routinely apply varnish | 15 (9) | 0 | 5 (6) | 10 (15) | .160 |
| Barriers to oral health training | | | | | |
| Inadequate time | 118 (69) | 4 (67) | 66 (82) | 46 (67) | .106 |
| Lack of faculty expertise | 81 (52) | 3 (50) | 54 (67) | 24 (35) | .001 |
| Competing priorities | 132 (85) | 6 (100) | 75 (93) | 51 (74) | .004 |
| Lack of faculty interest | 54 (35) | 2 (33) | 33 (41) | 19 (28) | .162 |

ABFM—American Board of Family Medicine
STFM—Society of Teachers of Family Medicine
* n=156

curricula, and the involvement of an oral health professional.

Perceived importance and satisfaction with oral health training as well as preparedness for oral health board exam questions were assessed using a five-item Likert scale for level of agreement ranging from “strongly disagree” to “strongly agree.” For analysis, responses were dichotomized to “strongly agree/agree” versus “all others.”

A total of 172 respondents (out of a possible 452 programs) completed some part of the CERA survey. Of these, 11 were removed for our analysis because program directors did not respond to any of the oral health

questions, and five were removed because there were no responses to questions regarding residency director attitudes toward oral health training. The final sample for our analysis included 156 individuals (35% response rate).

Descriptive analyses were carried out using methods appropriate to categorical responses. Bivariate associations were determined using the chi-square statistic with a *P* value < .05 used to define statistical significance.

The study was reviewed by the Institutional Review Board at the University of Massachusetts Medical School and determined to be exempt.

Results

As shown in Table 1, most of the family medicine residency directors (72%) agreed that it is important for physicians to address their patients' oral health issues. All but 4% of programs address oral health in their curricula, with 52% reporting 1–2 hours and 45% reporting 3 or more hours spent on this topic. However, only one third agreed that their residents are well prepared to answer the American Board of Family Medicine questions on oral health (33%) or are satisfied with the competence of their residents in oral health (32%).

With regard to specific oral health curricula, 74% of respondents were aware of the STFM SFL program, but only 22% of directors reported that they used any of the SFL modules. In addition, only 32% identified a formal relationship with an oral health expert, defined as either an oral health specialist or a faculty member with interest in this topic. Only 27% reported that their residents spent at least an hour working in a dental setting. Less than one quarter (24%) of all programs reported training in fluoride varnish application for their residents, and only 9% routinely applied varnish to their pediatric patients.

The most common barrier to oral health curricular coverage was competing priorities (85%), followed by inadequate time (69%) and lack of faculty expertise (52%). Only 35% cited a lack of faculty interest as a barrier.

As further demonstrated in Table 1, increased number of hours in training was associated with the perception that residents were prepared for board exams and satisfaction with the competence of their residents in this area. Awareness of SFL and the use of one of the SFL curriculum modules were also associated with increased hours of training. Training in fluoride application, but not actual application of fluoride, was associated with more hours of oral health curriculum. Finally, residency directors who felt that competing priorities or lack of faculty expertise were barriers to oral health training reported less hours of oral health training.

Table 2 shows the specific oral health topics covered by residencies that reported any oral health training. Prevention and care of caries was most commonly covered (89%) followed by pediatric screening (85%). The least covered topics were fluoride varnish (58%) and pregnancy and oral health (61%). All of these topics were significantly more likely to be covered by residencies with more time devoted to oral health training.

Table 2: Oral Health Topics Included in Residency Curricula*

| Oral Health Topics Covered | # (%) |
|--|----------|
| Prevention and Care of Caries | 133 (89) |
| Pediatric Screening | 128 (85) |
| Adult Oral Lesions | 126 (84) |
| Fluoride Risk Benefits and Promotion | 126 (84) |
| The Interaction of Oral and General Health | 123 (82) |
| Urgent and Emergent Oral Health Issues | 122 (81) |
| Adolescent and Adult Screening | 101 (67) |
| Periodontal Disease | 94 (63) |
| Pregnancy and Oral Health | 92 (61) |
| Fluoride Varnish | 87 (58) |

* n=150

All topics associated with increased hours of training ($P<.05$).

n is less than in Table 1 because some directors skipped this question.

Discussion

While nearly three fourths of residency program directors in the current survey acknowledged the value of oral health as a training topic, this percentage is actually lower than reported in 2005, when 95% of directors rated this topic as important.¹⁰ On the other hand, compared to a survey in 2009, a larger proportion of programs report dedicating more than 2 hours (45% versus 38%), and fewer programs are committing 0 hours (4% versus 10%) to oral health.¹¹ This change in hours of training may have resulted from the diverse efforts to increase oral health education.

Greater efforts are needed to extend the gains in oral health training that have been seen in the last decade. Increasing faculty expertise (ie, identifying an “oral health champion”), promoting the Smiles for Life curriculum, and increasing the number of total hours of oral health training may be strategic targets of these efforts. Making the delivery of fluoride varnish a regular part of primary care practice will likely require efforts that go beyond training.

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