**ABSTRACT**

Purpose: Recruiting and retaining an oral health workforce is essential for federally qualified health centers (FQHCs) to respond to increasing demand from safety net patients for oral health services. This study sought to understand the impacts of participation by FQHCs with dental residency programs as well as community service learning/externships for dental students on service capacity.

Methods: The study used an electronic survey of 1,178 FQHCs to collect data on oral health service capacity, types of services provided to patients, and participation in community service learning/externships for dental students. A contact list for FQHCs was developed from a variety of sources including federal grant listings and a membership list from the National Network for Oral Health Access (NNOHA). Chi-square, T-test, and Wilcoxon signed-rank tests were used to compare oral health service delivery in the FQHCs with participation in a dental education program.

Results: At survey closure, 304 FQHCs had completed the survey (25.8% response rate). Just 14.7% of respondents participated in dental residency programs, while 39.1% participated in dental student externship programs in 2016. A list of potential cases was developed from various sources including federal grant listings and a membership list from the National Network for Oral Health Access (NNOHA). Chi-square, T-test, and Wilcoxon signed-rank tests were used to compare oral health service delivery in the FQHCs with participation in a dental education program.

**RESULTS**

- One strategy of FQHCs to ensure sufficient workforce capacity to meet patient demand is enrolling in dental services or participation in dental student externship/community service learning programs and/or dental residency programs.
- Dental residents and students enhance workforce capacity, improve workflow, and increase efficiency of oral health service delivery in many health centers.
- Dental students and residents are a potential source of workforce for safety net health centers.

This study aimed to describe FQHCs’ participation in dental education and residency programs and to determine whether this participation created a pipeline for recruitment of dentists to work in safety net organizations.

**METHODS**

Utilized a web-based survey. Email solicitation was sent to dental directors or chief executive officers of 1,257 health centers with FQHC designation in 2016. Ninety-seven emails were undeliverable, reducing the number of possible respondents to 1,178 FQHCs.

Data collected included information on oral health service capacity, services provided to patients, and participation with residency or student externship programs.

Survey data was analyzed using descriptive statistics, chi-square testing, t-tests, and Wilcoxon signed-rank tests. Significance was defined as p≤0.05 using 2-tailed tests.

**RESULTS**

- At survey closure, 304 FQHCs had completed the survey for a response rate of 25.8%.
- Approximately 81% of FQHCs provided direct oral health services to patients in their clinics. More than 88% provided oral health preventive services.
- Average # of fixed dental clinics per patient was 2.3, average # of operators was 11.8.

**REFERENCES**


**TABLE 1. Characteristics of Respondent FQHCs**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>All FQHCs</th>
<th>FQHCs with Dental Education Program</th>
<th>FQHCs without Dental Education Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>1,178</td>
<td>304</td>
<td>874</td>
</tr>
<tr>
<td>Mean</td>
<td>1.0</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Range</td>
<td>0.0-6.0</td>
<td>0.0-6.0</td>
<td>0.0-6.0</td>
</tr>
</tbody>
</table>

**Figure 1. Average Number of Dental Operatories by Setting and FQHCs’ Participation in Dental Education Program**

- Fixed dental clinic (in the same or adjacent buildings to a primary care clinic): p<0.001
- Fixed dental clinic in a location separate from a primary care clinic: p<0.001

- Dental residents/student externs contribute to greater flexibility in scheduling patients in the clinic.
- Dental residents/student externs contribute to a positive fiscal impact for the FQHC.
- Dental residents/student externs improve workflows in the clinic.
- Dental residents/student externs contribute to improved efficiencies for staff dentists.

**Figure 2. Proportion of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- 84.6% of respondents who participated in a dental education program were more likely to provide services compared with FQHCs without a dental education program.
- 60.9% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.
- 89.7% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.

**Table 2. FQHCs Participating in Dental Education Programs**

<table>
<thead>
<tr>
<th>Dental Education Program</th>
<th>All FQHCs</th>
<th>FQHCs with Dental Education Program</th>
<th>FQHCs without Dental Education Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>1,178</td>
<td>304</td>
<td>874</td>
</tr>
<tr>
<td>Mean</td>
<td>1.0</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Range</td>
<td>0.0-6.0</td>
<td>0.0-6.0</td>
<td>0.0-6.0</td>
</tr>
</tbody>
</table>

**Table 3. FQHCs Hiring New Dentists Following Completion of a Dental Education Program at the FQHC**

- n=263
- Total 271, 100.0% of respondents had participated in a dental education program.
- No 154, 56.8% of respondents had participated in a dental education program.
- Yes 117, 43.2% of respondents had participated in a dental education program.

**Table 4. Average Number of Participants Providing Services at the FQHCs by FQHC Participation in Dental Education Programs**

<table>
<thead>
<tr>
<th>Services at the FQHCs</th>
<th>All FQHCs</th>
<th>FQHCs with Dental Education Program</th>
<th>FQHCs without Dental Education Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>n Mean Range</td>
<td>1,178</td>
<td>304</td>
<td>874</td>
</tr>
<tr>
<td>Part-time (PT) dentists</td>
<td>0.0002</td>
<td>0.017</td>
<td></td>
</tr>
</tbody>
</table>

**Table 5. Benefits of Hosting a Dental Education Program**

- Dental residents/student externs improve workflows in the clinic.
- Dental residents/student externs contribute to improved efficiencies for staff dentists.

**Table 6. Average Number of Dentists Providing Services at the FQHCs by Dental Education Program**

- FQHCs hosting dental education programs had a significantly higher # of providers using services compared with FQHCs without a dental education program.
- Dental residents/student externs contribute to greater flexibility in scheduling patients in the clinic.
- Dental residents/student externs contribute to an increased capacity to meet the oral health needs of patients and the opportunity to recruit new dentists.

**Figure 3. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- 84.6% of respondents who participated in a dental education program were more likely to provide services compared with FQHCs without a dental education program.
- 60.9% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.
- 89.7% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.

**Figure 4. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- FQHCs hosting dental education programs had a significantly higher # of providers using services compared with FQHCs without a dental education program.
- Dental residents/student externs contribute to an increased capacity to meet the oral health needs of patients and the opportunity to recruit new dentists.

**Figure 5. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- 84.6% of respondents who participated in a dental education program were more likely to provide services compared with FQHCs without a dental education program.
- 60.9% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.
- 89.7% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.

**Figure 6. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- FQHCs hosting dental education programs had a significantly higher # of providers using services compared with FQHCs without a dental education program.
- Dental residents/student externs contribute to an increased capacity to meet the oral health needs of patients and the opportunity to recruit new dentists.

**Figure 7. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- 84.6% of respondents who participated in a dental education program were more likely to provide services compared with FQHCs without a dental education program.
- 60.9% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.
- 89.7% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.

**Figure 8. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- FQHCs hosting dental education programs had a significantly higher # of providers using services compared with FQHCs without a dental education program.
- Dental residents/student externs contribute to an increased capacity to meet the oral health needs of patients and the opportunity to recruit new dentists.

**Figure 9. Comparison of Oral Health Services Provided at the FQHCs by FQHC Participation in Dental Education Programs**

- 84.6% of respondents who participated in a dental education program were more likely to provide services compared with FQHCs without a dental education program.
- 60.9% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.
- 89.7% of respondents who participated in a dental education program had a significantly higher average # of providers using services compared with FQHCs without a dental education program.