Understanding the Impact of State Policy on Dental Service Delivery at Federally Qualified Health Centers

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Presentation Objectives

• Describe
  • Federally Qualified Health Centers role in improving access and reducing disparity
  • Dental hygiene workforce and variations in state regulation

• Present
  • Study framework
  • Key findings and results

• Discuss Implications
  • Health workforce policy
  • Federally Qualified Health Centers
  • Underserved populations
STUDY CONTEXT
Federally Qualified Health Centers (FQHC): Background

• The **U.S. Health Center Program** was established in 1964 under Section 330 of the Public Health Service Act (42 USCS § 254b) of the Social Security program

• Located in Bureau of Primary Care at Health Resources Services Administration (HRSA)

• **Allocates grants** to health centers to provide **comprehensive primary health care services** (including dental & mental health and outreach services) in communities recognized with **Medically Underserved Area/Population (MUA/P)** designations
FQHCs: Oral Health Care

• Under federal funding agreements, health center grantees are required to deliver “primary health services,” which are defined in the statute to include “preventive dental services.” (42 U.S.C.§254b (a) (1) and §254b (b)(1)(A)(i)(III) (hh)).

• “Preventive dental services” are further defined by regulation (42 C.F.R.§51c.102 (h) (6)) to include “services provided by a licensed dentist or other qualified personnel, including: (i) “oral hygiene instruction; (ii) oral prophylaxis, as necessary; and (iii) topical application of fluorides, and the prescription of fluorides for systemic use when not available in the community water supply.”
FQHCs: Policy Context for Access to Care

**Federal:**
Health Center Program

**State:**
Health Profession Regulation Environment

**Community:**
: Health Care Delivery Structures (FQHC)

**Individual:**
Access to Care
Dental Hygiene: Preventive Oral Health Workforce

- Training and practice focused on disease preventive and oral health promotion

- State level variations in practice were quantified in *Dental Hygiene Professional Practice Index (DHPPI)* of 2001

- State policy (DHPPI) been associated with access to dental care at a state level

- Whether and to what extent state policy impacts Federally Qualified Health Centers (FQHC) is unknown
# Dental Hygiene: Categorizing State Policy Environment

## Table 1

*State Policy Environment as Categorized by Dental Hygiene Professional Practice Index (DHPPI)*

<table>
<thead>
<tr>
<th>LEVEL 5</th>
<th>LEVEL 4</th>
<th>LEVEL 3</th>
<th>LEVEL 2</th>
<th>LEVEL 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>Favorable</td>
<td>Satisfactory</td>
<td>Limiting</td>
<td>Restrictive</td>
</tr>
<tr>
<td>CO</td>
<td>CT</td>
<td>UT</td>
<td>KS</td>
<td>MI</td>
</tr>
<tr>
<td>WA</td>
<td>MO</td>
<td>AZ</td>
<td>NH</td>
<td>MA</td>
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<tr>
<td>OR</td>
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<td>OK</td>
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<tr>
<td>TX</td>
<td></td>
<td>AK</td>
<td></td>
<td></td>
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</tbody>
</table>

Note. DHPPI was generated as of state policy environment in December of 2001. Therefore these categories represent a baseline policy environment. Statistical analyses are adjusted for state level policy changes and clustering of Community Health Centers at the state level.
STUDY FRAMEWORK AND METHODS
Hypotheses

• State policy environment (quantified by DHPPI) is associated with/predictive of:

  1. **AVAILABILITY** - Dental Service Delivery Status of FQHCs
  2. **ACCESS** - Proportion of FQHC patients accessing dental services
  3. **ORAL HEALTH** - Proportion of FQHC dental patients encounters associated with certain types of dental services (preventive, restorative, emergent)
Study framework: theorized effect

Health Policy: U.S. Health Center Program funds FQHCs

State Level Workforce Policy Context: DHPPI

FQHCs increase VOLUME AND DISTRIBUTION of oral health resources

Oral Health Services at FQHCs measured through UTILIZATION

Population served by FQHCs are ENABLED TO ACCESS CARE By increase in Community Resource

FQHC consumer SATISFACTION With oral health services

Adapted from Aday and Anderson, 1974
Methods

- Longitudinal study designs with FQHC grantees as unit of analysis
- Includes 1,135 unique grantees that received community health center funding from 2004-2012
  - Variables
    - Outcomes: Dental service utilization data from UDS (defined using ICD9 DM codes)
    - Primary Effect: DHPPI categorical value serves as indicator of state policy environment
    - Covariates:
      - Grantee characteristics
      - State workforce characteristics
      - Policy changes (2002-2011)
  - Hierarchical modeling
KEY RESULTS AND FINDINGS
Availability: Descriptive Results

Proportion of FQHCs Delivering Dental Services by DHPPI Rating

- Favorable Level 4 (88%)
- Restrictive Level 1 (73%)
### Table 2

#### Results of Longitudinal Analyses with DHPPI as Ordinal Measure: Predictors of Dental Services Status

<table>
<thead>
<tr>
<th>VARIABLES OR</th>
<th>All Years 95% CI</th>
<th>2004-2007 95% CI</th>
<th>2008-2012 95% CI</th>
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</thead>
<tbody>
<tr>
<td>DHPPI Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (1-30)</td>
<td>0.28 0.09 0.93</td>
<td>0.31 0.10 0.94</td>
<td>0.33 0.10 1.09</td>
</tr>
<tr>
<td>2 (31-40)</td>
<td>0.43 0.15 1.21</td>
<td>0.35 0.13 0.93</td>
<td>0.56 0.19 1.62</td>
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<tr>
<td>3 (41-49)</td>
<td>0.62 0.19 1.99</td>
<td>0.65 0.22 1.91</td>
<td>0.65 0.20 2.07</td>
</tr>
<tr>
<td>4 (50-80)</td>
<td>0.92 0.23 3.62</td>
<td>1.13 0.31 4.16</td>
<td>0.95 0.24 3.83</td>
</tr>
<tr>
<td>5 (81-100)</td>
<td>ref ref ref</td>
<td>ref ref ref</td>
<td>ref ref ref</td>
</tr>
<tr>
<td>Policy Change</td>
<td>0.62 0.27 1.42</td>
<td>0.83 0.38 1.81</td>
<td>0.51 0.22 1.18</td>
</tr>
<tr>
<td>Clinical Sites</td>
<td>1.48 1.38 1.58 &lt;.0001</td>
<td>1.37 1.27 1.49 &lt;.0001</td>
<td>1.43 1.33 1.55 &lt;.0001</td>
</tr>
<tr>
<td>Medicaid</td>
<td>20.79 6.51 66.44 &lt;.0001</td>
<td>99.57 13.22 750.02 &lt;.0001</td>
<td>16.42 4.32 62.31 &lt;.0001</td>
</tr>
<tr>
<td>200% Poverty</td>
<td>4.09 2.35 7.13 &lt;.0001</td>
<td>2.83 1.40 5.44 0.00</td>
<td>3.64 1.80 7.38 0.00</td>
</tr>
<tr>
<td>Time</td>
<td>1.09 1.04 1.15 &lt;.0001</td>
<td>1.21 1.08 1.36 0.00</td>
<td>1.06 0.97 1.15 0.19</td>
</tr>
</tbody>
</table>

**Note:** Covariates were included based on results of cross-sectional regression analyses. The PROC GLIMMIX procedure was used. Adjustments were made for repeated measures of grantees and clustering of grantees at the state level.
Access: Descriptive Results

Proportion of FQHC Patients Accessing Dental Services by DHPPI Rating

- Favorable Level 4 (24.4%)
- Restrictive Level 1 (34%)

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DEPARTMENT OF FAMILY MEDİCINE
School of Medicine
## Access: Longitudinal Analysis Results

Table 3: Predictors of the Proportion of FQHC Patients Accessing Dental Services from 2004-2012

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Point Estimate</th>
<th>Lower 95% CI</th>
<th>Upper 95% CI</th>
<th>P=value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DHPPI Range</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (1-30)</td>
<td>-0.07</td>
<td>-0.12</td>
<td>-0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>2 (31-40)</td>
<td>-0.04</td>
<td>-0.09</td>
<td>0.01</td>
<td>0.08</td>
</tr>
<tr>
<td>3 (41-49)</td>
<td>-0.02</td>
<td>-0.08</td>
<td>0.03</td>
<td>0.42</td>
</tr>
<tr>
<td>4 (50-80)</td>
<td>ref</td>
<td>ref</td>
<td>ref</td>
<td>ref</td>
</tr>
<tr>
<td>5 (81-100)</td>
<td>-0.01</td>
<td>-0.07</td>
<td>0.05</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Policy Changes</strong></td>
<td></td>
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</tr>
<tr>
<td>Occur in State</td>
<td>-0.01</td>
<td>-0.04</td>
<td>0.03</td>
<td>0.71</td>
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<tr>
<td><strong>Number of Clinical Sites</strong></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Proportion Medicaid Patients</strong></td>
<td>0.09</td>
<td>0.07</td>
<td>0.11</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Proportion of Minority Patients</strong></td>
<td>3.94</td>
<td>2.28</td>
<td>6.81</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Note: Covariates were included based on results of cross-sectional regression analyses. The PROC GLIMMIX procedure was used. Adjustments were made for repeated measures of grantees and clustering of grantees at the state level.
Implications: Policy and Research

- Findings suggest that, to some extent, state regulation of the health workforce has an influence on access to care within underserved communities.
- Additional research is needed to fully understand this relationship.
- Enhanced policy indices for dental hygiene and other professions are needed to support and inform health workforce policy.
Implications: Can FQHCs Leverage the Dental Hygiene Workforce

- Dental hygiene practice aligns with FQHCs preventive dental service requirements
- Workforce innovations to support preventive and promotion:
  
  *Interprofessional collaborative practice models in which dental hygienists practice as Preventive Oral Health Specialists and Dental Care Coordinators on the Primary Care Team*
Implications: Access and Oral Health

• Policies must align with and promote population health
• Special care and consideration must be given to policies that influence access within vulnerable populations
• Health professionals must work together to improve access and oral health
Questions/comments?
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