Promoting Primary Care Delivery in the U.S. Through Effective Utilization of Nurse Practitioner Workforce

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Primary Care in the United States (U.S.)

Demand for primary care services in the U.S. is due to:

- Aging population
- Growing chronic disease burden
- Insurance expansion
Nurse Practitioners in the United States

• The growing nurse practitioner (NP) workforce can help meet the demand for primary care services

• NP workforce is expected to grow by 93% between 2013 and 2025
Policy and Practice Barriers Faced by NPs

- **Scope of practice (SOP):** 29 states require supervisory or collaborative relationships with physicians to provide care.

- **Organizational barriers:** NPs do not have adequate access to organizational resources for optimal practice or face lack of clarity in their role within employment settings.
Purpose of the Study

• Examine NP practice, work environment, and NP outcomes (i.e. turnover) in two states with different SOP regulations

• Determine how state SOP and organizational barriers impact NP work environment, NP outcomes and patient panel status
Methods

• **Design:** Cross-sectional survey used to collect data from 314 primary care NPs in Massachusetts (MA) and 278 from New York (NY) in 2012

• **Data Collection:** Mail survey in MA and online survey in NY
Survey Tool

- NPs completed measures of work environment, job satisfaction, turnover & panel status

- Nurse Practitioner Primary Care Organizational Climate Questionnaire (NP-PCOCQ): Validated instrument used to measure NP work environment
NP-PCOCQ

Contained the following four subscales:

• NP-Physician Relations (NP-PR)
• NP-Administration Relations (NP-AR)
• Independent NP Practice and Support (IPS)
• Professional Visibility (PV)
Independent Variables

- **States**: Massachusetts (MA) and New York (NY)

- **Organization Types**: Physician office, community clinic, and hospital
Dependent Variables

- **NP Work Environment**: Measured by the NP-PR, NP-AR, IPS, and PV subscale mean scores

- **Job Satisfaction**: Satisfied/dissatisfied

- **Turnover**: Intent on leaving position within next year

- **Panel Status**: Own or share patient panel
Statistical Analysis

- **Multivariate Analysis of Variance**: Used to determine effect of state SOP and organization type on NP work environment and outcomes.

- **Chi-Square Tests**: Used to determine effect of state and organization type on job satisfaction, turnover & panel status.
### Demographic Characteristics of Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>NY (n=278)</th>
<th>MA (n=314)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>52.0 (9.6)</td>
<td>49.3 (11.1)</td>
<td>.004</td>
</tr>
<tr>
<td>Range</td>
<td>24-75</td>
<td>26-71</td>
<td></td>
</tr>
<tr>
<td><strong>Sex % (N)</strong></td>
<td></td>
<td></td>
<td>.0004</td>
</tr>
<tr>
<td>Female</td>
<td>90 (220)</td>
<td>97 (291)</td>
<td></td>
</tr>
<tr>
<td><strong>Race % (N)</strong></td>
<td></td>
<td></td>
<td>.88</td>
</tr>
<tr>
<td>White</td>
<td>93 (219)</td>
<td>93 (258)</td>
<td></td>
</tr>
</tbody>
</table>
### Work Environment by State

<table>
<thead>
<tr>
<th>Subscale</th>
<th>NY Mean (n=278)</th>
<th>MA Mean (n=314)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP-PR</td>
<td>3.18</td>
<td>3.36</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>NP-AR</td>
<td>2.74</td>
<td>2.87</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>IPS</td>
<td>3.29</td>
<td>3.48</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>PV</td>
<td>2.85</td>
<td>3.15</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Note: All item responses on each subscale range from 1 (lower) to 4 (higher)
Work Environment by State

• Mean scores on all 4 subscales measuring work environment were statistically significantly different between 2 states

• NPs in MA reported statistically significantly higher levels of work environment than NPs in NY
## Work Environment by Organization Type

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Physician Office (n=225)</th>
<th>Community Clinic (n=111)</th>
<th>Hospital (n=118)</th>
<th>ANOVA p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP- PR</td>
<td>3.33</td>
<td>3.31</td>
<td>3.18</td>
<td>0.06</td>
</tr>
<tr>
<td>NP- AR</td>
<td>2.84</td>
<td>2.85</td>
<td>2.61</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>IPS</td>
<td>3.40</td>
<td>3.47</td>
<td>3.21</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>PV</td>
<td>3.00</td>
<td>3.16</td>
<td>2.81</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Note: All item responses on each subscale range from 1 to 4.
Work Environment by Organization Type

• NPs in community clinics reported statistically significant higher levels of work environment quality in 3 of 4 subscales than other organization types (NP-AR, IPS and PV)

• NPs in physician offices reported highest levels of quality in relationships with physicians (NP-PR)
# Job Satisfaction, Turnover and Panel Ownership by State

<table>
<thead>
<tr>
<th>Measure</th>
<th>MA (%)</th>
<th>NY (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Dissatisfaction</td>
<td>22</td>
<td>30</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Turnover</td>
<td>11</td>
<td>19</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Panel Ownership</td>
<td>45</td>
<td>40</td>
<td>0.58</td>
</tr>
</tbody>
</table>
## NP Outcomes and Panel Ownership by Organization Type (% of NPs)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Physician Office</th>
<th>Community Clinic</th>
<th>Hospital</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Dissatisfaction</td>
<td>24</td>
<td>29</td>
<td>28</td>
<td>0.71</td>
</tr>
<tr>
<td>Turnover</td>
<td>14</td>
<td>17</td>
<td>15</td>
<td>0.68</td>
</tr>
<tr>
<td>Panel Ownership</td>
<td>36</td>
<td>67</td>
<td>42</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>
NP Outcomes and Panel Ownership by Organization Type

• Neither job dissatisfaction nor turnover varied significantly by organization type

• NPs in community clinics reported a statistically significant higher proportion of panel ownership than physician offices and hospitals
Conclusions

• Better work environments in MA might be explained by the state’s less restrictive SOP regulations in 2012

• Poor work environments in hospital-based clinics attributable to the setting’s hierarchical organizational structure
Implications

• Addressing work environment issues and creating effective environments is needed to fully exploit the capacity of the NP workforce

• State and organizational reforms should be considered to maximize the NPs’ contribution to patient care
Acknowledgements

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