Session Number: T221
Session Title: Specialty Choice Among US Physician Assistants: Distribution, Salaries, and Comparison to Physicians

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Background

- Expected increase in demand for healthcare services in the US.
  - Primarily due to aging and chronic disease
  - Smaller impact of increased insurance coverage under the ACA
- Physician supply may not be adequate to meet demand under traditional models of care.
- Increased use of PAs and NPs is widely cited as potential solution to physician shortages.
Are PAs a solution to primary care shortfall?

- Workforce shortages in primary care are of particular concern.
- Policy approaches aimed at increasing # of PAs choosing primary care.
  - Grants for PC training programs
  - Loan forgiveness
  - Bonus payments

But.....

- Specialty distribution of PAs shifting away from primary care toward specialty care.
PA specialty choice

- **Salary** known to impact PA specialty choice
- Demand for PAs may be affected by physician earnings within a specialty
  - Financial contribution of the PA to a practice determined in part by how PA earnings compare to MD/DO earnings
- PAs may have a **choice** among positions in multiple specialties
  - Practices may create positions desirable to PAs in terms of salary and/or lifestyle
  - More positions with higher salaries available in high-demand specialties
Objectives

• To provide current information about PA specialty distribution

• Quantify the association of physician:PA ratio in a specialty with factors affecting
  – 1) supply (i.e. PA salary)
  – 2) demand (i.e. physician salary and physician:PA salary ratio) of PAs by specialty
# Methods

## Data Sources

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Physician Assistant Data</th>
<th>Physician Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National Commission on Certification of Physician Assistants (NCCPA) 2013 Statistical Profile</td>
<td></td>
</tr>
<tr>
<td>Salary (median base salary)</td>
<td>2013 AAPA Salary Report</td>
<td>Medical Group Management Association (MGMA) Physician Compensation and Production Survey 2013 Report Based on 2012 Data</td>
</tr>
</tbody>
</table>
Methods

• Variables
  – **Proportion of PAs in a specialty** = Raw # PAs reporting being clinically active / total # PAs responding to AAPA surveys
  – **Projected # PAs in a specialty** = Proportion of PAs in specialty * total # PAs estimated by AAPA to be in practice
  – **Ratio of physicians to PAs**
    • Lower ratio = larger number of PAs in a specialty
  – **Primary care** = family/general medicine, general internal medicine, general pediatrics, and geriatrics
Methods

• Analysis
  – Descriptive analyses
    • Descriptive statistics
    • Scatterplots
  – Linear regression models
    • Bivariate models
    • Multivariate model
      – Outcome variable: ratio of MDs/DOs to PAs in 2013
      – Explanatory variables: PA median salary in 2013, MD/DO median salary in 2012, salary ratios
  • Natural log transformations used due to skewed distributions
Results
Number of PAs in Active Practice

Source: AAPA Annual Census Reports
PA Specialty Trends Over Time

Estimated % PAs in Clinical Practice

Year


Primary Care
Surgical Subspecialties
Internal Medicine Subspecialties
Emergency Medicine
Other
General Surgery
Obstetrics & Gynecology
Pediatric Subspecialties
Occupational Medicine

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<table>
<thead>
<tr>
<th>Specialty</th>
<th>Ratio of Clinically Practicing Physicians to PAs (2005)¹</th>
<th>Ratio of Clinically Practicing Physicians to PAs (2013)</th>
<th>Median PA Salary, 2013³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthopedic Surgery</td>
<td>3</td>
<td>2</td>
<td>$94,000</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>3</td>
<td>2</td>
<td>$98,000</td>
</tr>
<tr>
<td>Cardiovascular/Thoracic Surgery</td>
<td>3</td>
<td>3</td>
<td>$100,000</td>
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<tr>
<td>Emergency Medicine</td>
<td>5</td>
<td>3</td>
<td>$100,000</td>
</tr>
<tr>
<td>Dermatology</td>
<td>5</td>
<td>4</td>
<td>$85,000</td>
</tr>
<tr>
<td>Family/General Medicine</td>
<td>6</td>
<td>5</td>
<td>$83,000</td>
</tr>
<tr>
<td>Urologic Surgery</td>
<td>13</td>
<td>6</td>
<td>$90,000</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>7</td>
<td>6</td>
<td>$90,000</td>
</tr>
<tr>
<td>Allergy</td>
<td>8</td>
<td>7</td>
<td>$82,000</td>
</tr>
<tr>
<td>Hematology/Oncology</td>
<td>11</td>
<td>7</td>
<td>$96,715</td>
</tr>
<tr>
<td>Plastic Surgery</td>
<td>13</td>
<td>8</td>
<td>$95,000</td>
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<td>Gastroenterology</td>
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<td>8</td>
<td>$88,000</td>
</tr>
<tr>
<td>Cardiology</td>
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<tr>
<td>General Surgery</td>
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<td>$92,000</td>
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<td>Otolaryngology</td>
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<tr>
<td>Endocrinology</td>
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<td>10</td>
<td>$85,000</td>
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<tr>
<td>Pulmonary/critical care</td>
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<td>12</td>
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<tr>
<td>Neurology</td>
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<tr>
<td>Nephrology</td>
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<td>15</td>
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<tr>
<td>Infectious Disease</td>
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<td>Rheumatology</td>
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<td>17</td>
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</tr>
<tr>
<td>Obstetrics/Gynecology</td>
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<td>21</td>
<td>$85,000</td>
</tr>
<tr>
<td>General Internal Medicine</td>
<td>20</td>
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</tr>
<tr>
<td>General Pediatrics</td>
<td>33</td>
<td>29</td>
<td>$82,000</td>
</tr>
</tbody>
</table>
Association between physician:PA ratios & salaries

Ratio of MD to PA Median Salaries, 2012-2013

Ratio of Num Active MD/DOs to PAs, 2013
## Linear Regression Models

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Outcome Variable</th>
<th>Independent Variable(s)</th>
<th>Intercept</th>
<th>β (SE)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ln(MD:PA ratio)</td>
<td>PA median salary</td>
<td>8.92</td>
<td>-0.00008 (0.00002)</td>
<td>0.003</td>
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<td>2</td>
<td>ln(MD:PA ratio)</td>
<td>MD median salary</td>
<td>3.49</td>
<td>-0.000004 (8.9E-7)</td>
<td>0.0003</td>
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<tr>
<td>3</td>
<td>ln(MD:PA ratio)</td>
<td>MD:PA median salary ratio</td>
<td>3.49</td>
<td>-0.35 (0.11)</td>
<td>0.004</td>
</tr>
<tr>
<td>4</td>
<td>ln(MD:PA ratio)</td>
<td>$\beta_1 = \text{MD:PA median salary ratio} \quad \beta_2 = \text{Surgical versus medical specialty indicator variable}$</td>
<td></td>
<td>$\beta_1 = 0.04$</td>
<td></td>
</tr>
</tbody>
</table>
Summary of Findings

• PAs continue to move toward *subspecialty* practice, though ~30% currently practice in primary care.

• PAs are becoming more *prevalent*, compared to physicians, in most specialties.
Summary of Findings

• Supply of PAs willing to work in a specialty is likely affected by potential earnings

• Physicians in more lucrative specialties may have more $$ incentive to hire PAs
  – And can offer higher salaries

• Demand for PAs may be important factor driving trend toward specialization
Limitations

• Possible **response bias** due to low response rate to AAPA surveys (specialty & salary).
• **Cross-sectional data**; cannot establish causality.
• Small sample size (24 specialties)
• Many other **unmeasured factors** may contribute to association between physician:PA specialty ratio and salary.
Implications

• Policy initiatives focusing only on supply factors may not succeed if demand factors are not also addressed.

• If increasing proportion of PAs in particular specialties is the goal, future research should explore ways to affect supply and demand for PAs by specialty.
• This paper has been accepted for publication in JAAPA in spring of 2016
References