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The Impact of State-level PA Practice Regulations on PA Wages

Ryan D. White, MS, MPH, PA-C

Assistant Professor
Assistant Director, Clinical Education and Practice

Department of PA Studies and Practice
Rutgers School of Health Professions



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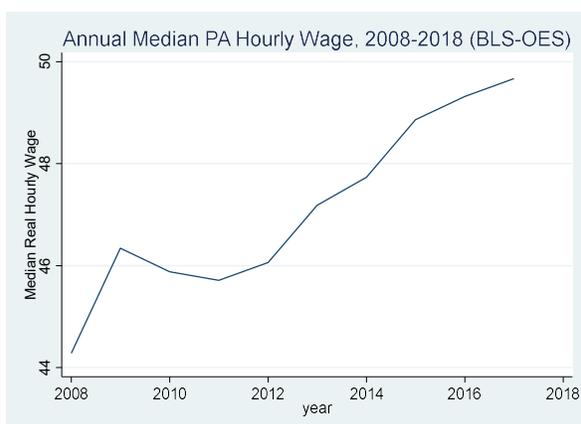
Learning Objectives

- Upon conclusion of this activity, participants should be able to:
 1. Detail variation in PA wages across states,
 2. Describe time trends in state-level PA practice regulations, and
 3. Define the impact of individual- and state-level variables on PA wages.

PA Wage Growth

Bureau of Labor Statistics

AAPA Salary Report



- 18% increase in the annual median PA salary over 10 years:
 - 2009 - \$90,000¹
 - 2018 - \$106,000²

1. American Academy of PAs. (2010). 2010 AAPA Salary Report. Alexandria, VA.
 2. American Academy of PAs. (2018). 2018 AAPA Salary Report. Alexandria, VA.
 3. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, accessed 8/14/20 at www.bls.gov/oes/.



PA Wage Variation

- PA wages in the highest earning state are 31% higher than the lowest earning state¹
- Persistent gender wage gap²⁻⁴
 - Female PA annual salaries are approximately \$10,000 lower than male PA salaries.
- Evidence of a race/ethnicity wage gap
 - Non-Hispanic Black and Hispanic PA annual salaries are \$9,000 – \$15,000 lower than White PA salaries⁵ in American Community Survey (ACS) data

1. Quella A, Brock D, and Hooker R. Physician Assistant Wages and Employment, 2000-2025. JAAPA, June 2015; 28(6): 56-63.

2. Smith D, Jacobson C. Differences in salaries of physician assistants in the USA by race, ethnicity and sex. Journal of Health Services Research and Policy. January 2018; 23(1): 44-48.

3. Coplan B, Essary A, Virden T, Cawley J, Stoehr J. Salary discrepancies between practicing male and female physician assistants. Womens Health Issues. January-February 2012; 22(1): e83-9.

4. Smith N, Cawley J, McCall T. Examining the Gap: Compensation Disparities between Male and Female Physician Assistants. Womens Health Issues. September-October 2017; 27(5): 607-613.

5. Smith D, Jacobson C. Differences in salaries of physician assistants in the USA by race, ethnicity and sex. Journal of Health Services Research and Policy. January 2018; 23(1): 44-48.

PA Wage Growth

- Conditions contributing to PA wage growth:
 - Health insurance and delivery reforms
 - Reported physician shortages
 - Practice and hospital consolidation
 - Increasing demand for health care services
 - Professional advocacy
 - Practice reforms?



PA Practice Reforms

- In 2008, AAPA published the policy platform “The Six Key Elements of a Modern PA Practice Act” within the “Guidelines for State Regulations of PAs”.¹
 - “The Six Key Elements” were intended to “create an ideal PA practice act that allows PAs to practice fully and efficiently while protecting public health and safety.”¹
- Optimal Team Practice² (2017)
 - Eliminate the statutory requirement for PAs to have a collaborating/supervising physician
 - Create PA-majority regulatory boards
 - Authorize PAs to be directly reimbursed by payers

1. American Academy of Physician Assistants (amended 2017). Guidelines for State Regulation of PAs. Retrieved August 14, 2020, from <http://www.aapa.org>.

2. American Academy of Physician Assistants. Optimal Team Practice. Retrieved August 15, 2020, from <https://www.aapa.org/advocacy-central/optimal-team-practice/>.



Six Key Elements of a Modern PA Practice Act

-  Licensure as the Regulatory Term
-  Full Prescriptive Authority
-  Scope of Practice Determined at the Practice Level
-  Adaptable Supervision Requirements
-  Co-signature Requirements Determined at the Practice-level
-  Number of PAs a Physician May Collaborate With Determined at the Practice-level

At the time of publication of the "Six Key Elements of a Modern PA Practice Act", only Rhode Island had already enacted all six Key Elements

PA Practice Reforms

Table 1: Number of States per Category, 2008-2017

	Restrictive	Moderate	Permissive
2008	22	20	8
2009	20	20	10
2010	20	20	10
2011	19	20	11
2012	18	20	12
2013	17	17	16
2014	15	18	17
2015	15	17	18
2016	13	17	20
2017	10	18	22

- **Key Element categorization¹**

- **Restrictive:** 1-2 Key Elements
- **Moderate:** 3-4 Key Elements
- **Permissive:** 5-6 Key Elements

1. Morgan P, et al. Factors Associated With Having a Physician, Nurse Practitioner, or Physician Assistant as Primary Care Provider for Veterans With Diabetes Mellitus. *Inquiry*. January 2017; 54: 1-16

PA Practice Reforms and Wages

- Do PAs in states with fewer practice restrictions earn higher wages?
 - Productivity and skill level may change with reforms.
 - Demand for PAs may be higher in states with more permissive regulations.
 - Practices in states with fewer PAs may compete by offering higher wages
 - Labor market competition from NPs
 - Administrative burden of employing a PA



PA Practice Reforms and Wages

- Perry¹ found no relationship between PA wages and PA prescriptive authority.
 - Physician earnings increase as PAs gain prescriptive authority
 - NP earnings are positively associated with NP prescriptive authority¹

- Restrictive NP regulations are positively associated with physician and PA earnings^{1,2}

1. Perry J. The rise and impact of nurse practitioners and physician assistants on their own and cross-occupation incomes. *Contemporary Economic Policy* 2009; 27(4): 491–511.
2. Kleiner M, Marier A, Won Park K, Wing C. Relaxing Occupational Licensing Requirements: Analyzing Wages and Price for a Medical Service, NBER Working Paper 19906. February 2014

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Empirical Approach

$$WAGE_{ist} = \alpha + \beta_1 X_{ist} + \beta_2 (PERMISSIVE)_{st} + \beta_3 (MODERATE)_{st} + \beta_4 Y_{st} + \beta_5 S_s + \beta_6 T_t + S * TREND + e$$

- Ordinary Least Squares
- Two-way fixed effects model
 - Multiple reforms implemented in multiple time periods

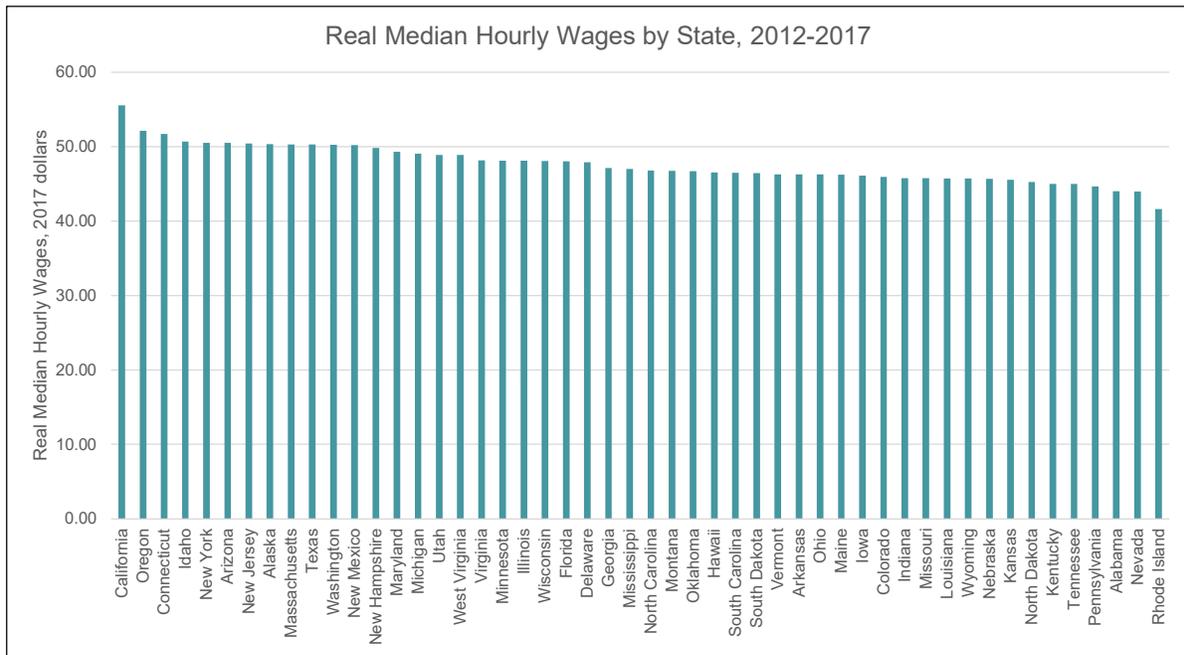
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Data Source

AAPA Salary Survey

- 2012
- 2015
- 2016
- 2017

Year	Mean Real Hourly Wage	N
2012	48.54	9,357
2015	49.48	5,007
2016	52.23	3,259
2017	53.31	6,285





Empirical Approach

$$WAGE_{ist} = \alpha + \beta_1 X_{ist} + \beta_2 (PERMISSIVE)_{st} + \beta_3 (MODERATE)_{st} + \beta_4 Y_{st} + \beta_5 S_s + \beta_6 T_t + S * TREND + e$$

- **WAGE_{ist}**
 - Log hourly wage for PA (i) in state (s) at time (t)
 - Annual salary divided by number of weeks worked in prior year, divided by hours worked per week
 - Deflated to 2017 dollars using the Consumer Price Index
- **X_{ist}**
 - Characteristics for individual (i) in state (s) and year (t)
 - Sex, race, ethnicity, years of experience, practice specialty, highest degree earned
- **PERMISSIVE_{st} and MODERATE_{st}**
 - Dummy for states that entered each category in year (t)
- **Y_{ist}**
 - Characteristics for state (s) in year (t)
 - Cost of living (Regional Price Parity) and PA Location Quotient from BLS-OES
- State (S) and year (T) fixed effects
- **S*TREND**
 - Product of state fixed effect and linear time trend variable
 - Differences in state-specific trends over time are controlled



VARIABLES	(1) Log Real Hourly Wage
Female	-0.0513*** (0.0074)
IM	0.0015 (0.0116)
EM	0.2180*** (0.0133)
Pediatrics	0.0289 (0.0312)
Surgery	0.0125 (0.0094)
Other Specialty	0.0534*** (0.0094)
Years Experience	0.0066*** (0.0004)
Black	0.0096 (0.0224)
Asian	0.0607*** (0.0156)
Native American/Alaska Native	-0.0202 (0.0566)
Native Hawaiian/Other Pacific Islander	0.0271 (0.0648)
Multiple Race	0.0284 (0.0239)
Other Race	0.0667** (0.0299)
Hispanic	-0.0008 (0.0167)
Constant	3.8550*** (0.0102)
Observations	5,982
R-squared	0.1149

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

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VARIABLES	(1) Log Real Hourly Wages
Moderate	-0.0154 (0.0123)
Permissive	0.0160** (0.0073)
Female	-0.0518*** (0.0047)
Internal Medicine	0.0093 (0.0101)
Emergency Medicine	0.2203*** (0.0122)
Pediatrics	0.0486** (0.0203)
Surgery	0.0243** (0.0105)
Other Specialty	0.0689*** (0.0084)
Years Experience	0.0066*** (0.0003)
Regional Price Parity (2012)	0.0156*** (0.0051)
PA Location Quotient	-0.0268 (0.0298)
Constant	2.3738*** (0.4530)
Observations	14,216
R-squared	0.1805

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1



Significant Results

	Wage Impact	Reference
Permissive Category	1.8%	Restrictive Category
Female	-5.0%	Male
Emergency Medicine	24.6%	Family Medicine
Pediatrics	5.0%	Family Medicine
Surgery	2.5%	Family Medicine
Other Specialty	7.1%	Family Medicine

Key Findings

- Transitioning to the Permissive category (adopting at least 5 Key Elements) is associated with a 1.8% increase in PA wages.
- Female PAs earn 5% lower wages than male PAs.
- Family medicine PAs earn significantly lower wages than PAs in other specialties.
- Racial and ethnicity wage disparities are not found in AAPA data.

Limitations

- Model does not account for local labor market conditions or practice/hospital-level variables that may influence PA wages.
- Strict exogeneity assumption.
- Limited time frame of study.
- Racial and ethnic minority representation in data.



Areas for Future Investigation

- Racial and ethnicity wage disparities in the PA profession
- The Impact of state-level practice reforms on wages will be further studied using ACS and BLS-OES data.
- The impact of PA practice reforms on other outcomes.
 - PA utilization
 - Patient outcomes
- Predictors of the adoption of state-level practice reforms.



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THANK YOU