

# A Comparison of Quality of Care and Practice Patterns of Primary Care Physicians, Nurse Practitioners, and Physician Assistants for Medicaid Patients in New York

Shen Wang, MPH, MPA, Robert Martiniano, DrPH, MPA  
Center for Health Workforce Studies, School of Public Health, University at Albany

## ABSTRACT

**Objective:** To compare the quality of care and practice patterns of primary care physicians (PCMDs), nurse practitioners (NPs), and physician assistants (PAs) in ambulatory care settings in New York (NY).

**Methods:** Using 23 million NY Medicaid claims data from 2016-2018, multivariate regression analyses were conducted to estimate the impact of receiving NP/PA-provided primary care versus PCMD-provided ones.

Design-based and model-based methods with weighted estimates were utilized to test 7 key outcome variables in software SPSS and HLM, respectfully. Predictive modeling was also used to estimate the probability of each outcome occurring among PCMDs, NPs, and PAs.

**Results:** Primary care services provided by NP/PAs were largely equivalent to those provided by PCMDs. Medicaid patients seen by NPs were more likely to receive smoking cessation treatments than those seen by PCMDs ( $P \leq 0.05$ ), and patients seen by PAs were more likely to receive ultrasound services and referrals than those seen by PCMDs ( $P \leq 0.01$ ).

**Conclusions:** Policy makers should be confident in the contributions of NPs and PAs to high-quality primary care. The comparable outcomes could produce cost-saving opportunities, especially in underserved areas in NY.

## CONTACT

Center for Health Workforce Studies

518-402-0250  
info@chwsny.org  
www.chwsny.org



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## INTRODUCTION

- In the past few years, there has been growing recognition of the important roles that NPs and PAs play in primary care
  - By 2018, NY's total Medicaid enrollment grew by 14%, to nearly 6.5 million
  - Shortage of PCMDs in underserved areas in NY calls for additional workforce
  - Quality of primary care provided by PCMDs, NPs, and PAs in all ambulatory care settings has not been thoroughly studied in NY
- This study compared the quality of care provided by PCMDs, NPs, and PAs and their practice patterns to better understand current primary care services in NY

## METHODS

Multivariate regressions were conducted to estimate the impact of receiving primary care from NPs/PAs vs PCMDs.

- Data:** 23 million Medicaid claims analyzed from the NYS Medicaid Data Warehouse
  - 3-year period from Jan 2016 to Dec 2018
  - 21,392 NY PCMDs, 3,492 NPs, 1,951 PAs
  - 6.3 million NYS Medicaid patients
- Inclusions/Exclusions:**
  - Providers filtered by 3-digit profession code
  - Non-pregnant patients over 18 years of age
  - Medicaid patients seen by more than one provider type were excluded (eg, MD & NP)
  - Midwife-NPs were excluded
- Literature Review** was conducted to select 3 quality of care indicators and 4 indicators for practice patterns
- Statistical modeling (design-based/model-based methods) was used on chosen indicators

## METHODS (cont.)

**Table 1. Quality of Care and Practice Pattern Indicators**

Outcome	Description
<b>Quality of Care</b>	
<b>1. Smoking cessation treatment</b>	Received smoking cessation intervention (ie, nicotine replacement therapy or medications ordered, supplied, administered, or continued and/or smoking cessation counseling)
<b>2. Depression treatment</b>	Antidepressants ordered, supplied, administered, or continued and/or psychotherapy or mental health counseling
<b>3. Hyperlipidemia treatment</b>	Statin ordered, supplied, administered, or continued
<b>Practice Pattern</b>	
<b>4. General exam</b>	General medical exam/physical exam provided
<b>5. Ultrasonography</b>	Any of the ultrasound services recommended by primary care practitioners that were ordered/provided during the visit
<b>6. Medications</b>	50 common drugs ordered, supplied, administered or continued during the visit: prescription and over-the-counter drugs, immunizations, and dietary supplements
<b>7. Referral</b>	Claims with code "referred to other physician"

## RESULTS

- Demographic characteristics were largely similar among provider types although a greater proportion of NPs were female (Table 2)

**Table 2. NY Medicaid Provider, Ambulatory Care, 2016-18**

Characteristics	PCMD (n=21,392)	NP (n=3,492)	PA (n=1,951)	p-value
<b>Age (mean)</b>	48.2	47.5	47.7	0.60
<b>Gender (%)</b>				
Female	51.4	93.0	65.2	<0.01
<b>Ethnicity (%)</b>				
White Non-Hispanic	72.3	84.3	83.5	<0.01
Black Non-Hispanic	10.6	6.4	5.6	<0.01
Other Non-Hispanic	9.7	3.8	3.4	<0.01
Hispanic	7.4	5.5	7.5	

- Four (#2, #3, #4, #5) of the 7 indicators had no statistically significant differences in NP/PA-provided care compared with PCMDs
- Patients seen by NPs were more likely to receive recommended smoking cessation treatments
- Patients seen by PAs received significantly more ultrasonography services than patients seen by PCMDs

## RESULTS (cont.)

- Patients seen by PAs were also more likely to receive physician referrals

**Table 3. Effect of Practitioner Type on Care in NY, 2016-18**

<i>Design-Based Method (PCMD as reference group)</i>		
Quality of Care Indicator (Adjusted Odds Ratio, CI)		
Outcome (n= # of claims)	NP Claim	PA Claim
<b>Smoking cessation treatment</b> (n=405,294)	<b>1.58**</b> (1.13-2.22)	1.12 (0.64-1.93)
Depression treatment (n=324,210)	0.79 (0.56-1.13)	1.07 (0.60-1.84)
Hyperlipidemia treatment (n=1,283,101)	0.98 (0.75-1.30)	1.08 (0.70-1.67)
Practice Pattern Indicator (Adjusted Odds Ratio, CI)		
Outcome (n= # of claims)	NP Claim	PA Claim
General exam (n=2,245,992)	0.99 (0.74-1.33)	1.02 (0.72-1.44)
Medications (n=6,680,198)	0.96 (0.87-1.06)	0.99 (0.90-1.09)
<b>Ultrasonography</b> (n=1,651,646)	0.96 (0.79-1.17)	<b>1.32**</b> (1.12-1.56)
<b>Physician referral</b> (n=54,038)	1.08 (0.87-1.35)	<b>1.39**</b> (1.16-1.73)

## DISCUSSION

- Primary care services provided by PCMDs, NPs, and PAs are comparable in ambulatory care settings among Medicaid patients in NY
- A greater use of NPs and PAs is likely to produce equivalent quality primary care services (as estimated by 7 outcomes)
- Policy makers should be confident in the contributions of NPs and PAs to high-quality primary care
- The comparable outcomes could produce cost-saving opportunities, especially in underserved areas in NY

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