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Authors

Rodriguez, Hector

Berube, Alena

Hung, Dorothy

et al.

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Primary Care Practice Characteristics Associated With Medical Assistant Staffing Ratios

Hector P. Rodriguez, PhD, MPH¹

Alena D. Berube, MS²

Dorothy Y. Hung, PhD¹

Stephen M. Shortell, PhD, MBA, MPH¹

Elliott S. Fisher, MD²

¹School of Public Health, University of California, Berkeley, California

²The Dartmouth Institute for Health Policy & Clinical Practice, Dartmouth College, Lebanon, New Hampshire

ABSTRACT

This study characterized adult primary care medical assistant (MA) staffing. National Survey of Healthcare Organizations and Systems (n = 1,252) data were analyzed to examine primary care practice characteristics associated with MA per primary care clinician (PCC) staffing ratios. In 2021, few practices (11.4%) had ratios of 2 or more MAs per PCCs. Compared with system-owned practices, independent (odds ratio [OR] = 1.76, $P < 0.05$) and medical group-owned (OR = 2.09, $P < 0.05$) practices were more likely to have ratios of 2 or more MAs per PCCs, as were practices with organizational cultures oriented to innovation ($P < 0.05$). Most primary care practices do not have adequate MA staffing.

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INTRODUCTION

Medical assistants (MAs) are among the fastest growing occupations within the US primary care workforce,¹ but little is known about organizational factors associated with MA support levels for primary care clinicians (PCCs). Increased accountability for quality of care has led many practices to expand roles for primary care MAs, including health coaching for adults with chronic conditions.²⁻⁴ Interprofessional care team approaches rely on robust support from MAs; for example, the teamlet model of primary care recommends 2 MAs per PCC.⁵

We examine primary care characteristics associated with MA staffing ratios. Past evidence indicates that health care system ownership of primary care practices may impede patient-centered innovation, such as MA role expansion, because they require resources that may not be sufficiently aligned with existing health care system goals or incentives.⁶

METHODS

Data

We analyzed practice survey responses to the second wave of the National Survey of Healthcare Organizations and Systems (NSHOS II), a 52-question survey of a nationally representative sample of non-federal adult primary care physician practices, as defined by the 2020 IQVIA OneKey database. The NSHOS was developed by Dartmouth College, Harvard University, and University of California, Berkeley researchers, and the data have been analyzed extensively in past research.⁶⁻⁹ Surveys were collected from physician leaders and/or practice managers between May 2021 to March 2022. From 1,540 total responses (response rate = 38%), duplicate surveys (n = 137) and surveys with high item non-response (n = 151) were excluded, resulting in an analytic sample of 1,252 practices. [Supplemental Table 1](#) compares NSHOS II respondent and non-respondent practices. Sampling and non-response weights were used.

Measures

Medical Assistant per PCC Staffing Ratio

Respondents were asked, "What is the current ratio of medical assistants (MAs) to primary care clinicians in your practice?" and selected from the following response options: (1) We do not employ MAs, (2) Less than 1 MA per clinician, (3) One MA per clinician, (4) Two MAs per clinician, and (5) Three or more MAs per clinician. Given the recommended 2 or more MAs per clinician for the teamlet model of



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CORRESPONDING AUTHOR

Hector P. Rodriguez
School of Public Health
University of California, Berkeley
2121 Berkeley Way #5427
Berkeley, CA 94720
hrod@berkeley.edu

Table 1. Primary Care Practice Characteristics, by Medical Assistant to Primary Care Clinician Staffing Ratios

	All Practices	2 or More Medical Assistants per PCC	Fewer Than 2 Medical Assistants per PCC	P Value ^a
No., (%)	1,252	142 (11.3)	1,110 (88.7)	
Practice ownership (%)				<i>P</i> < 0.01
Independent	19.7	34.0	17.8	
Medical group	6.4	7.8	6.2	
Hospital	14.5	18.4	14.0	
Health system	38.9	17.6	41.6	
Federally Qualified Health Center	19.7	21.5	19.4	
Other	1.0	0.8	1.0	
Independent practice association affiliation (%)	15.8	14.9	15.9	
Practice size				<i>P</i> < 0.01
Solo physician	0.5	1.8	0.4	
Small (2-9 physicians)	76.9	82.6	76.2	
Medium (10-19 physicians)	13.2	11.4	13.5	
Large (20+ physicians)	9.3	4.3	10.0	
Primary care physicians (mean, SD)	6.5 (6.9)	4.9 (3.2)	6.7 (7.2)	<i>P</i> < 0.01
Advanced practice clinicians (mean, SD)	3.7 (5.7)	3.9 (6.0)	3.7 (5.7)	
Specialty mix				
No specialists	58.9	61.3	58.6	
Low specialists (1-29%)	20.9	17.5	21.3	
High specialists (30%+)	20.3	21.1	20.1	
Rural-urban continuum code (%)				
Metropolitan	82.3	80.6	82.5	
Micropolitan	10.4	10.7	10.3	
Small town	4.9	7.6	4.5	
Rural	2.5	1.1	2.7	
Area deprivation index of practice zip code	96.5 (19.7)	99.6 (16.1)	96.1 (20.0)	<i>P</i> < 0.05
Weekend care (% yes)	31.7	43.0	30.2	<i>P</i> < 0.05
After-hours weekday care (% yes)	57.2	68.2	55.8	<i>P</i> < 0.05
Professional language services (% always/often)	71.4	66.8	71.8	
Behavioral health integration (% yes)	50.7	49.9	50.9	
Reduced staff hours/layoffs (% yes)	38.5	30.0	39.5	
Staffing shortages impacting patient care (%)				<i>P</i> < 0.05
Not at all	9.1	12.0	8.8	
A little	17.2	28.3	15.8	
Some	35.6	29.7	36.4	
Quite a lot	38.1	30.1	39.0	
Complex care management processes (range: 0-3; mean [SD])	1.7 (0.8)	1.8 (1.0)	1.7 (0.7)	
Practice innovation culture (range: 0-3; mean [SD])	1.5 (0.7)	1.7 (0.6)	1.5 (0.7)	<i>P</i> < 0.01
Health information technology functions (range: 0-1; mean [SD])	0.7 (0.3)	0.6 (0.3)	0.7 (0.3)	<i>P</i> < 0.05

PCC = primary care clinician.

^a Values without *P* values are not statistically significant (*P* > 0.05).

Note: Specialty mix was calculated as specialists divided by total physicians and advanced practice clinician count included include nurse practitioners, physician's assistants, and clinical nurse specialists. Health information technology functions included questions assessing patient access to their electronic medical records, patient input into medical records, secure messaging, prescription refill notifications, advanced analytics. Complex care management processes included measures of non-physician involvement with patient care coordination, adherence to care plans, supporting risk modification and medication adherence. The Area Deprivation Index of the practice's zip code from the Neighborhood Atlas was sourced from the Neighborhood Atlas and includes the domains of income, education, employment, and housing quality, where areas with greater socioeconomic disadvantage are ranked higher. The rural-urban continuum code of the practice's zip code was included. Staffing shortages were assessed using responses to a question that asked, "How much are staff shortages within your practice impacting patient care (do not include shortages related to being ill with COVID)?," which included the response options of "Not at all," "A little," "Some," and "Quite a lot."

primary care,⁵ we constructed a binary outcome measure of 2 or more MAs per PCC.

Practice Ownership

Practice ownership was a categorical variable that assessed whether a practice is independent, health system owned, hospital owned, medical group owned, designated as a Federally Qualified Health Center (FQHC), or other.

Practice Culture

Practice culture was assessed with a 7-item measure of “innovation culture.” The questions were informed by qualitative research of the complexity of organizational cultures within and between physician groups¹⁰ and the Competing Values Framework of organizational culture.¹¹ Organizational cultures more oriented to innovation have been found to be associated with greater practice adoption of patient engagement strategies and chronic care management processes.^{6,9} Information about item content ([Supplemental Table 2](#)), internal consistency reliability ([Supplemental Table 3](#)), and distributions ([Supplemental Figure](#)) are detailed in the supplemental materials linked here. Other covariates are described in Table 1 footnotes.

Analyses

Multivariable logistic regression models estimated the association of practice ownership and practice culture with practice use of staffing ratios of 2 or more MAs per PCC, controlling for covariates.

RESULTS

Most adult primary care practices (56.6%) had ratios of 1 MA per PCC, while only 11.4% had ratios of 2 or more MAs per PCCs; 27.6% had ratios of less than 1:1, and 4.3% of practices did not employ MAs (Table 1). In adjusted analyses, compared with system-owned practices, independent (odds ratio [OR] = 1.76, *P* < 0.05) and medical group-owned (OR = 2.09, *P* < 0.05) practices had significantly greater odds of having ratios of 2 or more MAs per PCC (Table 2). Practices with organizational cultures oriented to innovation (OR = 1.35, *P* < 0.05) had greater odds of having ratios of 2 or more MAs per PCC.

DISCUSSION

Approximately 1 in 10 adult primary care practices have ratios of 2 or more MAs per PCC. Independent practices, medical group-owned practices, and FQHC practices were more likely to have ratios of 2 or more MAs per PCC

Table 2. Adjusted Analyses: Practice Characteristics Associated With Medical Assistant per Primary Care Clinician Staffing Ratios

	Two or More Medical Assistants per PCC Adjusted Odds Ratios (95% CI)	P Value ^a
Practice ownership		
Independent	1.76 (1.07, 2.89)	<i>P</i> < 0.05
Medical group	2.09 (1.12, 3.90)	<i>P</i> < 0.05
Hospital	1.47 (0.74, 2.94)	
Health care system (reference)	-	
Federally Qualified Health Center	1.46 (0.85, 2.50)	
Other ownership	2.15 (0.54, 8.66)	
Practice size		
Solo physician	8.73 (2.45, 31.1)	<i>P</i> < 0.01
Small (2-9 physicians)	2.63 (1.17, 5.93)	<i>P</i> < 0.05
Medium (10-19 physicians)	1.59 (0.68, 3.76)	
Large (20+ physicians) (reference)	-	
Independent practice association affiliation	0.86 (0.57, 1.31)	
Advanced practice clinicians (mean, SD)	1.02 (1.00, 1.05)	
Specialty mix		
No specialists (reference)	-	
Low specialists (1-29%)	0.88 (0.54, 1.41)	
High specialists (30%+)	1.20 (0.73, 1.96)	
Rural-urban continuum code		
Metropolitan (reference)	-	
Micropolitan	0.89 (0.52, 1.54)	
Small town	1.08 (0.56, 2.10)	
Rural	0.51 (0.15, 1.74)	
Area deprivation index	1.00 (0.99, 1.01)	
Staffing shortages impacting patient care		
Not at all (reference)	-	
A little	1.26 (0.71, 2.20)	
Some	0.97 (0.57, 1.65)	
Quite a lot	0.75 (0.44, 1.32)	
Complex care management processes	1.07 (0.86, 1.35)	
Practice innovation culture	1.35 (1.03, 1.78)	<i>P</i> < 0.05
Health information technology functions	0.63 (0.33, 1.18)	
Constant	0.21 (0.01, 0.12)	<i>P</i> < 0.001

PCC = primary care clinician.

^a Values without *P* values are not statistically significant (*P* > 0.05).

ratios than practices owned by health care systems. Practice ownership may influence managerial control and physician autonomy to determine staffing levels that enable high-quality, patient-centered primary care.¹² Practices with cultures oriented to innovation were also more likely to have staffing ratios of 2 or more MAs per PCC, possibly because they were better able to retain MA staff during the COVID-19 pandemic federal emergency period.¹³

System-owned practices may opt to hire other staff, including nurses and other non-physician clinicians, instead of staffing 2 MAs per PCC.¹⁴ The number of advanced practice

clinicians and the extent of non-physician clinicians' involvement in complex care management processes, however, were not significantly associated with MA per PCC staffing ratios. These findings challenge the perception that MAs are substitutes for other care team members like nurses and behavioral health specialists.

Study limitations include a modest response rate, although comparable to large-scale organizational surveys conducted during the pandemic. Clinical and non-clinical efforts were not differentiated, and staffing records were not used to confirm the levels reported. Additional measures of practice culture and burnout could have enriched these analyses and should be examined in future research. Staffing ratios and cultural assessments were both self-reported, so common method bias is another potential limitation.

The National Academy of Sciences, Engineering, and Medicine's Committee on Implementing High-Quality Primary Care recommended greater investment in primary care as a key step toward improving population health.¹⁵ Most primary care practices do not have adequate MA support. Ensuring that PCCs have sufficient MA support is a concrete step that payers and organizations can take to support primary care practices.

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Key words: health workforce; primary health care; organizational culture; health care systems; ownership

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 [Supplemental materials](#)

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