

Value of Nurse Practitioner Inpatient Hospital Staffing

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Nurse Practitioner Workforce: Overview

- Trends in the nurse practitioner workforce
 - Demographic characteristics
 - Practice characteristics
 - Regional differences
 - National, regional, and local
 - Practice differences
 - Acute care and primary care
- Impact of nurse practitioners on acute care
- Opportunities for nurse practitioners in acute care



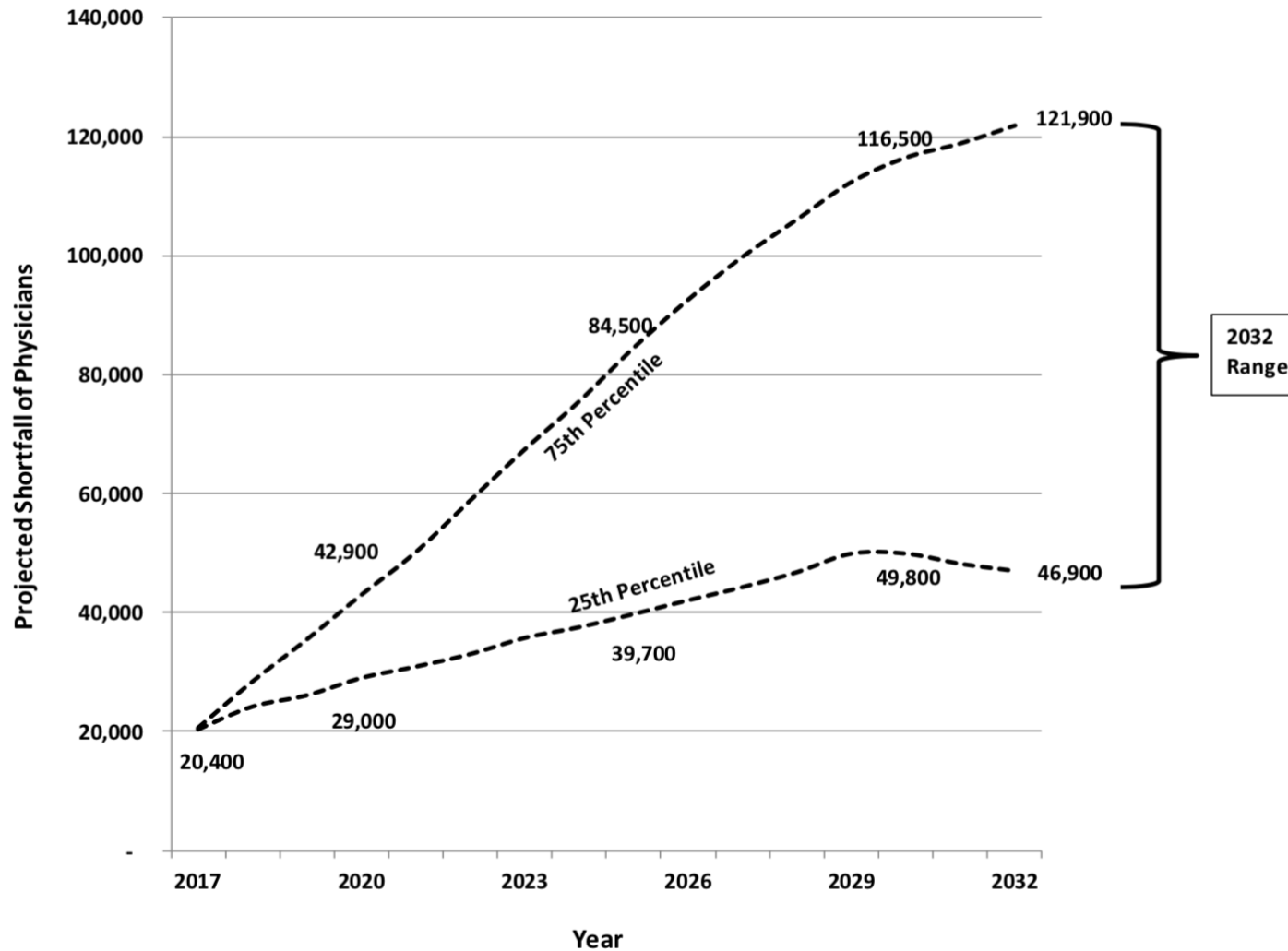
The Nurse Practitioner Workforce

The National Landscape, 2020



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Need for NPs: Physician Shortfall

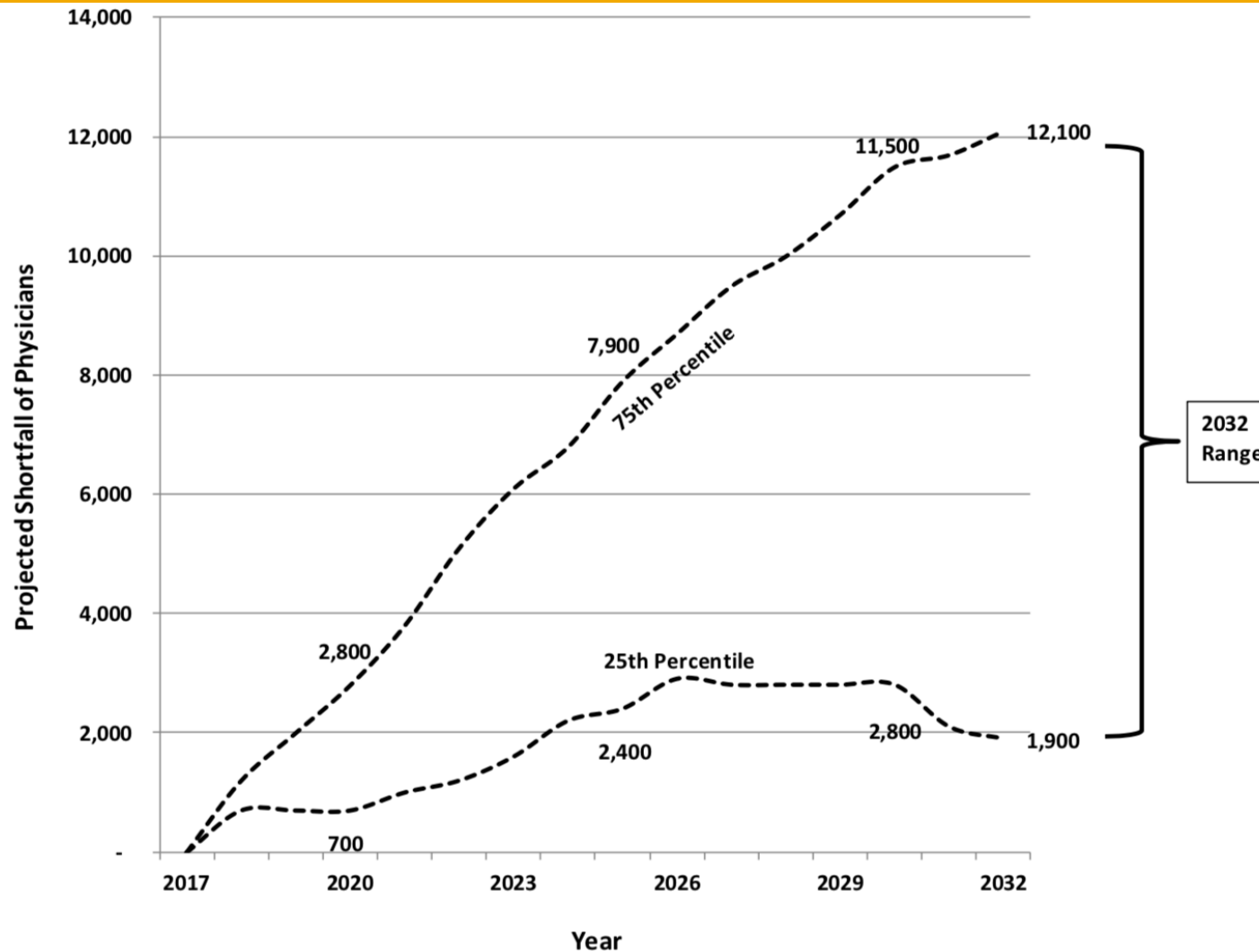


Source: Association of American Medical Colleges



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Specialist Physician Projected Shortfall

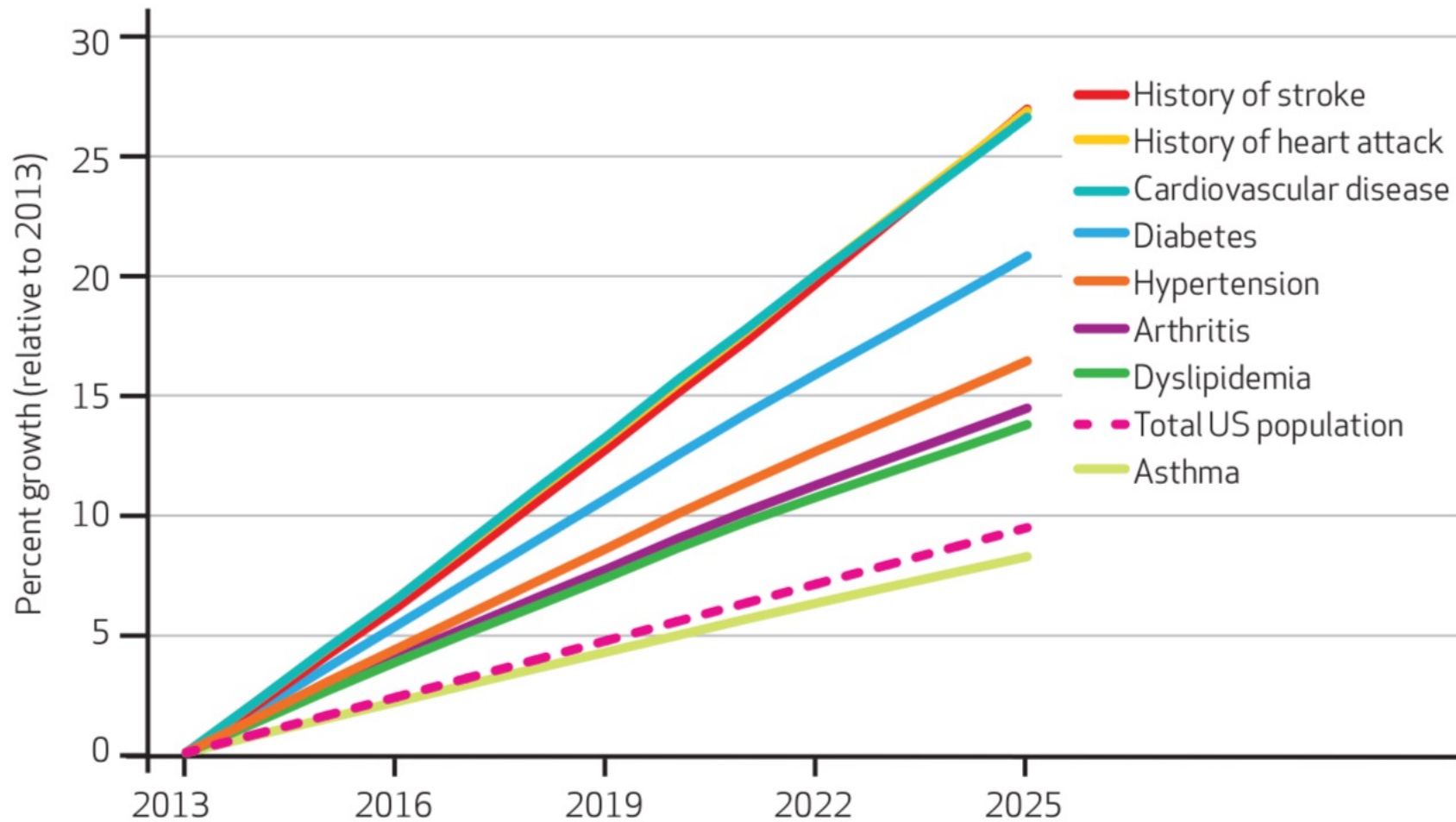


Source: Association of American Medical Colleges



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Projected Growth in Chronic Conditions

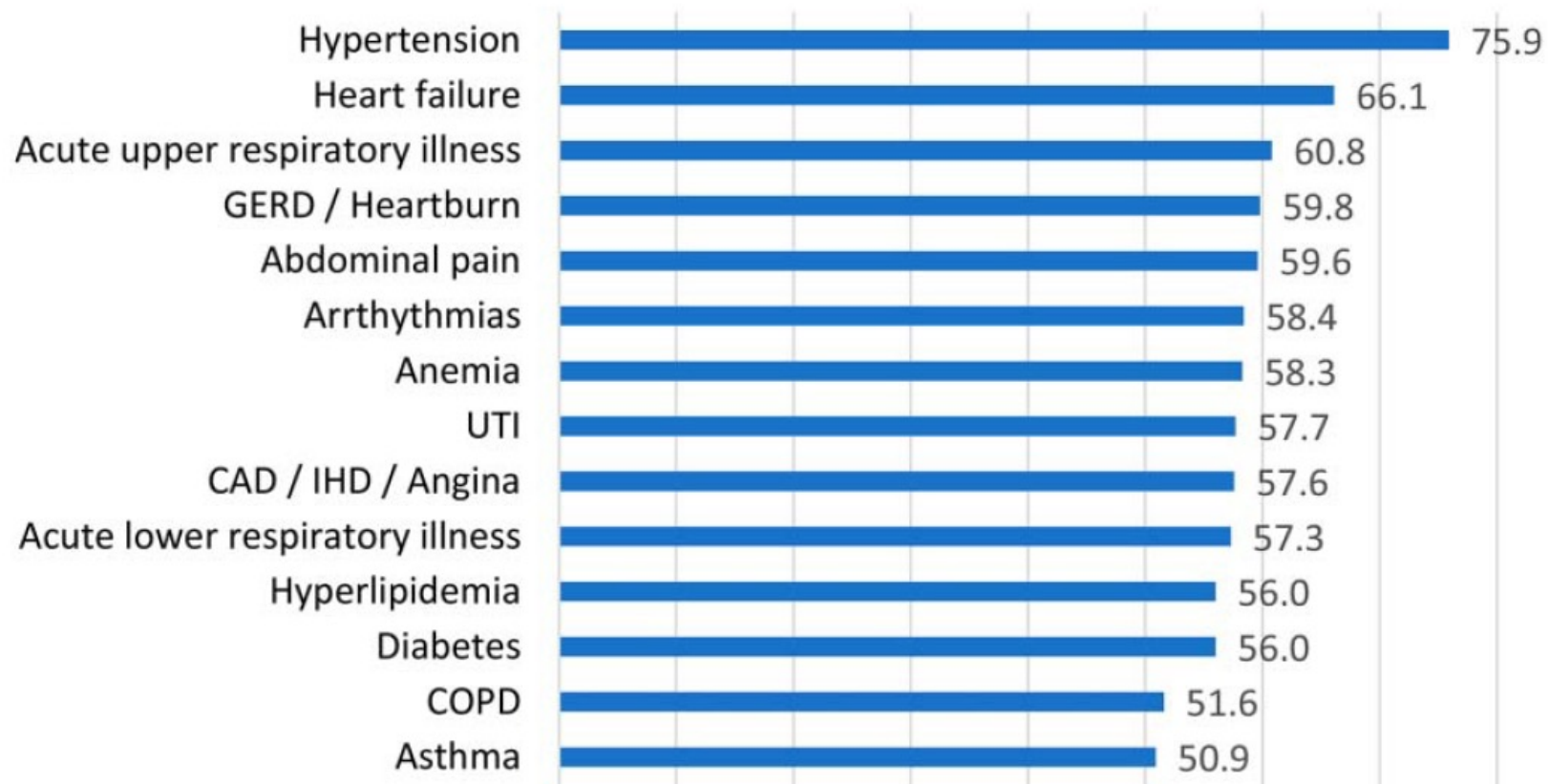


Source: Dall TM, Gallo PD, Chakrabarti R, West T, Semilla AP, Storm MV. (2013) An aging population and growing disease burden will require a large and specialized health care workforce by 2025. Health Affairs, 32(11), 2013-2020.



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Top Dx Acute Care Nurse Practitioners



Provider Groups and Annual Growth

Provider Group	No. of Full-Time Equivalents				Average Annual Growth (%)		
	2001	2010	2016	2030 (projected)	2001–2010	2010–2016	2016–2030 (projected)
Physicians	711,357	862,698	920,397	1,076,360	2.2	1.1	1.1
Nurse practitioners	64,800	91,697	157,025	396,546	3.9	9.4	6.8
Physician assistants	44,282	88,047	102,084	183,991	7.9	2.5	4.3

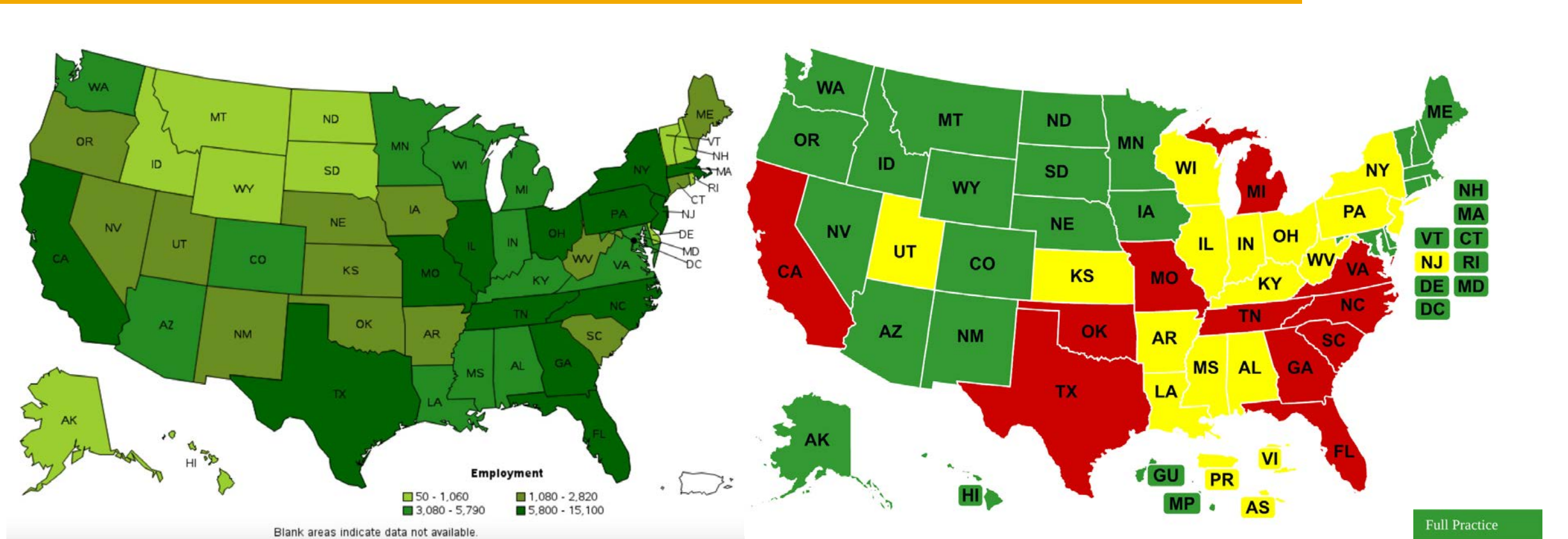
Source: Auerbach DI, Staiger DO, Buerhaus PI (2018) Growing ranks of advanced practice clinicians – implications for the physician workforce.

NEJM Catalyst



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Employment and Scope of Practice



Source: Bureau of Labor Statistics; American Association of Nurse Practitioners



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States with Highest NP Employment

State	Employed	Hourly Wage	Annual Wage
California ⁽¹⁾	15,100	\$70.18	\$145,970
New York ⁽⁴⁾	14,850	\$60.79	\$126,440
Texas ⁽²⁾	14,680	\$56.11	\$116,700
Florida ⁽³⁾	13,010	\$48.58	\$101,060
Ohio ⁽⁷⁾	9,430	\$50.78	\$105,630



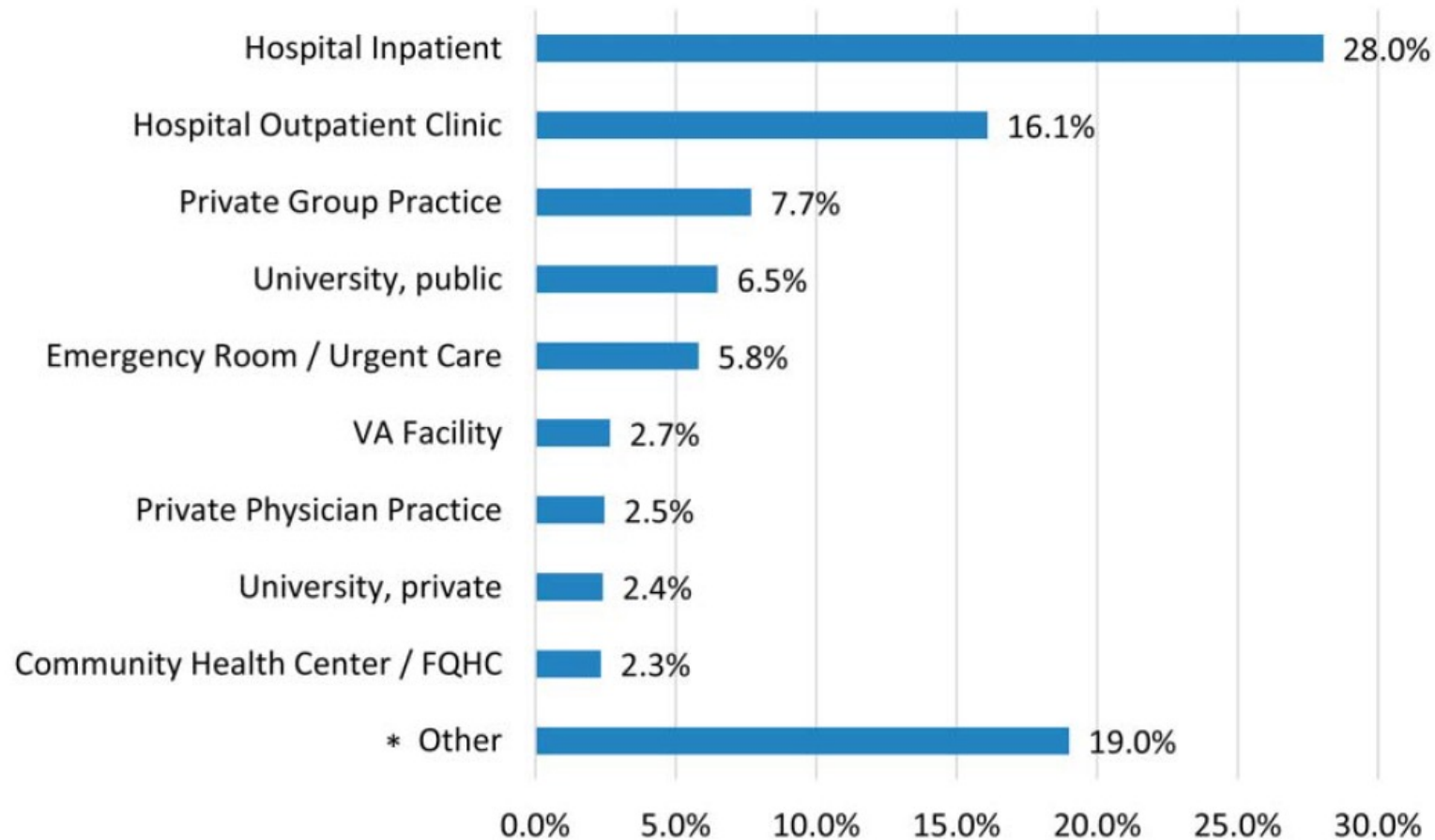
Nurse Practitioners: Practice Settings

Number and average earnings of full-time-equivalent nurse practitioners (NPs), by employment setting, 2010 and 2017

Employment setting	Number			Average earnings (\$)		
	2010	2017	Growth (%)	2010	2017	Growth (%)
Hospitals	34,616	74,642	116	98,269	101,243	3
Physician offices	21,844	48,942	124	87,443	90,475	3
Outpatient care centers	13,612	32,967	142	86,565	94,560	9
Other	19,244	32,122	67	80,935	88,176	9



Acute Care NPs: Practice Settings



The Nurse Practitioner Workforce

The Regional Landscape: CA, FL, NJ, PA 2016

Acute Care and Primary Care Nurse Practitioners



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NP Reports on Hospital Care

- 2015-2016 survey of nurse practitioners in four states
 - CA, FL, NJ, and PA
- Extensively validated survey method and survey measures
 - Dillman Method
- Measures included:
 - Demographic and practice characteristics
 - Nurse Practitioner Organizational Climate Questionnaire
 - Nurse practitioner reports on quality of care
- Descriptive and inferential statistics by practice setting
 - Acute care and primary care



NP Demographic Characteristics

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Age	47.9	50.3	<.01
Gender			.02
Female	1,135 (89.9%)	2,159 (92.2%)	
Male	128 (10.1%)	184 (7.9%)	
Race			.05
White	1,037 (82.1%)	1,984 (84.7%)	
Non-white	226 (17.9%)	359 (15.3%)	
Ethnicity			
Hispanic	96 (7.6%)	143 (6.1%)	.09
Non-Hispanic	1,167 (92.4%)	2,200 (93.9%)	
Years in Position	7.3 (7.0)	7.7 (7.2)	.07



NP Practice Characteristics

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Highest Nursing Degree			<.01
Master's degree	1,124 (89.0%)	2,043 (87.2%)	
Doctor of Nursing Practice	82 (6.5%)	128 (5.5%)	
Other	57 (4.5%)	172 (7.3%)	
Educational Specialty			<.01
Adult NP	387 (31.4%)	431 (18.8%)	
Family NP	458 (37.3%)	1,264 (55.2%)	
Neonatal NP	87 (7.1%)	3 (0.1%)	
Pediatric NP	119 (9.7%)	213 (9.3%)	
Mental Health NP	30 (2.4%)	65 (2.8%)	
Women's Health NP	21 (1.7%)	167 (7.3%)	
Others	125 (10.2%)	149 (6.5%)	
Certified in Specialty Practice	966 (77.6%)	1,588 (68.8%)	<.01



NP Practice Characteristics

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Time Constraints to Finish Care			.12
Yes	1,090 (89.3%)	1,932 (87.5%)	
No	131 (10.7%)	277 (12.5%)	
Bill Under Own NPI			<.01
Yes	525 (43.0%)	1,318 (58.6%)	
No	695 (57.0%)	933 (41.4%)	
Practices in Rural Area			<.01
Yes	153 (12.4%)	404 (17.5%)	
No	1,085 (87.6%)	1,911 (82.6%)	



NP Practice Characteristics

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Employment Status			<.01
Full-time	1,066 (86.2%)	1,625 (70.6%)	
Part-time	143 (11.6%)	610 (26.5%)	
Per-diem	28 (2.3%)	67 (2.9%)	
Works more than one job			.18
Yes	319 (25.3%)	545 (23.3%)	
No	944 (74.8%)	1,798 (76.7%)	
Patient Workload	10.8 (12.5)	15.0 (16.8)	<.01
Does RN and Staff Work			.94
Yes	1,027 (83.9%)	1,826 (83.8%)	
No	197 (16.1%)	360 (16.2%)	



NP Reports on Quality of Care

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Rate on Quality of Care			<.01
Excellent/good	1,128 (92.4%)	2,210 (95.6%)	
Fair/poor	93 (7.6%)	98 (4.4%)	
Recommend Facility to Family/Friends			.24
Yes	1,107 (90.9%)	2,040 (92.1%)	
No	111 (9.1%)	176 (7.9%)	
Confident Patient Can Manage Care at Home			<.01
Yes	1,111 (94.3%)	2,025 (96.5%)	
No	67 (5.7%)	73 (3.5%)	



NP Reports on Organizational Climate

	Acute Care (n=1263)	Primary Care (n=2343)	<i>p</i>
Professional visibility, mean (SD)	2.9 (0.8)	3.1 (0.8)	<.01
NP-administration relations	2.7 (0.8)	3.0 (0.7)	<.01
NP-physician relations	3.4 (0.5)	3.4 (0.6)	0.84
Independent practice and support	3.6 (0.5)	3.4 (0.5)	<.01



Estimates NP Reports on Quality of Care

	Acute Care (n=1263)	Primary Care (n=2343)
Excellent/Good Quality of Care		
NP-administration relations	2.86 (1.77-4.62)	3.68 (2.37-5.70)
NP-physician relations	2.06 (1.27-3.33)	1.68 (1.09-2.57)
Independent practice and support		1.84 (1.11-3.05)
Confident Patient Can Manage Care at Home		
NP-administration relations		2.99 (1.87-4.77)
NP-physician relations	2.12 (1.18-3.84)	
Recommend Facility to Family and Friends		
NP-administration relations	2.94 (1.92-4.52)	3.10 (2.23-4.32)
NP-physician relations		2.16 (1.55-3.01)
Bills under own NPI		1.73 (1.21-2.48)



The Nurse Practitioner Workforce

The Regional Landscape: CA, FL, NJ, PA 2016

Acute Care Nurse Practitioners



Nurse Reports on Hospital Care

- 2015-16 survey of registered nurses in four states (CA, FL, NJ, and PA)
- Extensively validated survey method and survey measures
 - Dillman Method
- Data sources included:
 - RN4CAST-US nurse survey
 - Patient-level hospital discharge data from state agencies
 - OSHPD, AHCA, DHSS-NJ, and PHC4
 - Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
 - CMS Spending per Beneficiary (MSPB) reports
 - American Hospital Association Annual Survey
- Descriptive and inferential statistics



Nurse Reported Outcomes (n=22,273)

Outcome	<1 NP/100	1-2.9 NP/100	3+ NP/100
Rate hospital highly	27.0%	30.1%	37.2%
Definitely would recommend hospital	38.2%	42.9%	51.3%
Report “Excellent” quality of care	33.6%	37.0%	45.7%
Grade hospital “A or B” patient safety	66.5%	69.0%	74.3%
Grade hospital “A or B” prevention of infections	68.4%	69.0%	75.3%



Nurse Reported Outcomes

Outcome	<1 NP/100	1-2.9 NP/100	3+ NP/100
Confident management will resolve patient care problems	43.2%	44.1%	49.7%
Confident patients can manage care after discharge	50.2%	49.1%	54.5%
High burnout	31.3%	32.2%	29.1%
Satisfied with job	78.7%	78.1%	80.4%
Intend to stay in current job	87.0%	86.4%	88.1%



Patient Reported Outcomes

Outcome	<1 NP/100	1-2.9 NP/100	3+ NP/100
Rate hospital highly	66.4%	67.4%	70.9%
Definitely would recommend hospital	67.7%	68.8%	72.6%
Nurses always communicated well	74.5%	76.0%	78.2%
Always received help as soon as wanted	59.7%	61.7%	64.1%



Patient Reported Outcomes

Outcome	<1 NP/100	1-2.9 NP/100	3+ NP/100
Pain was always well controlled	67.9%	68.3%	69.9%
Staff always explained medication	60.8%	60.6%	62.3%
Staff provided information on recovery at home	47.7%	48.5%	51.4%
<hr/>			
Hospital Efficiency			
Medicare spending per beneficiary (mean)	1.019	1.015	0.993



Estimates Nurse Reported Outcomes

Adjusted Model	Odds Ratio	95% CI
Rate hospital highly, N(%)	1.35	1.22-1.50
Definitely would recommend hospital	1.44	1.30-1.61
Report “Excellent” quality of care	1.33	1.22-1.61
Grade hospital “A or B” patient safety	1.26	1.15-1.37
Grade hospital “A or B” on infection prevention	1.23	1.12-1.35
Confident management will resolve patient care problems	1.20	1.10-1.32
Confident patients can manage care after discharge	1.17	1.07-1.27
High burnout	0.92	0.86-0.99
Satisfied with job	1.17	1.08-1.27
Intend to stay in current job	1.14	1.05-1.25



Estimates Patient-Reported Outcomes

Adjusted Model	Odds Ratio	95% CI
Rate hospital highly, N(%)	2.59	1.65-3.52
Definitely would recommend hospital	3.13	2.07-4.19
Nurses always communicated well	1.12	0.60-1.64
Always received help as soon as wanted	1.30	0.53-2.07
Pain was always well controlled	0.86	0.35-1.37
Staff always explained medication	0.44	-0.16-1.03
Staff provided information on recovery at home	1.84	1.10-2.58
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Hospital Efficiency		
Medicare Spending per Beneficiary	-0.027	-0.353 to -0.019



Patient Outcomes

Adjusted Model	Odds Ratio	95% CI
30-Day Mortality	0.89	0.84-0.93
7-Day Readmission	0.99	0.93-.097

Length of Stay	IRR	95% CI
Adjusted	0.96	0.94-0.98



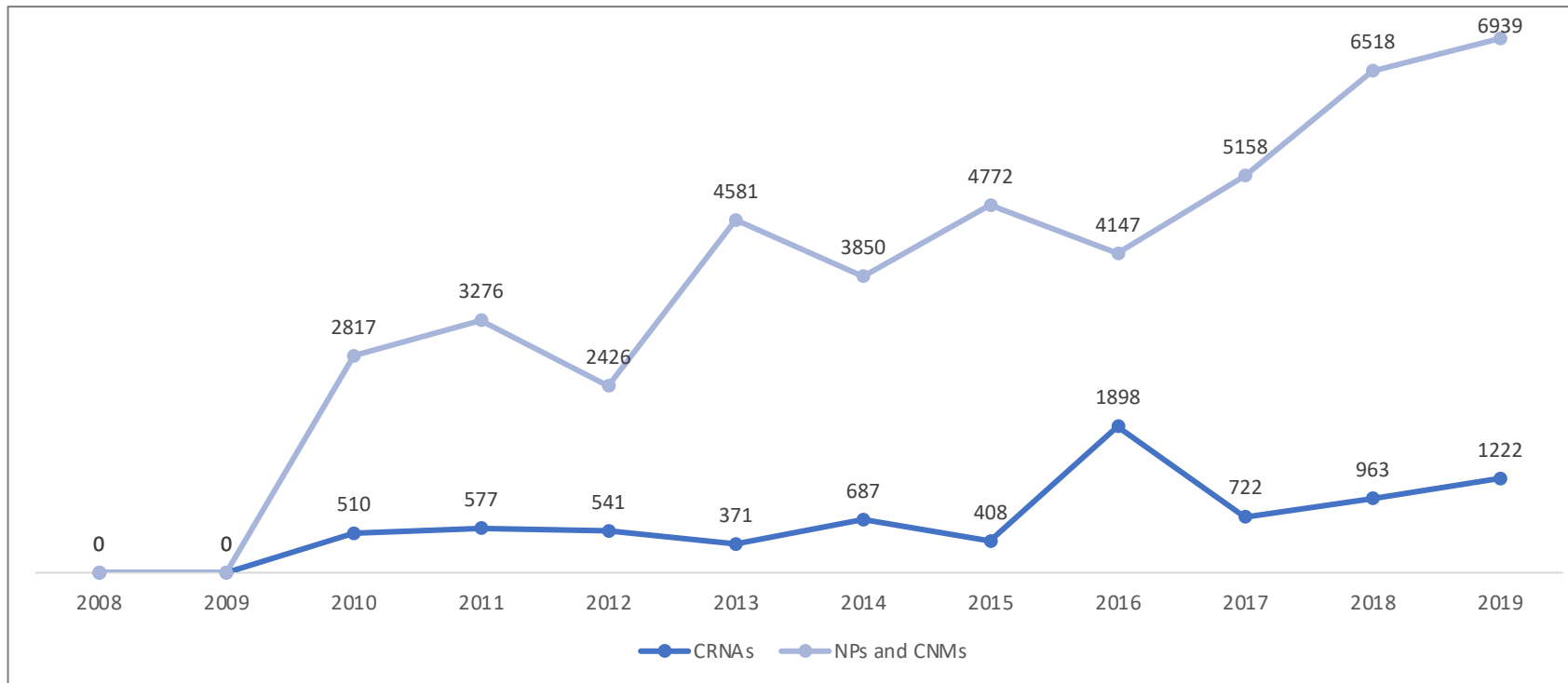
The Nurse Practitioner Workforce

The Local Landscape: Georgia, 2019



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Nurse Practitioners: GA



NP Demographic Characteristics: GA

Characteristic	GA NPs (n = 8,041)
Age, mean (SD)	41.2 (0.3)
Gender	
Female	6,596 (92.0%)
Male	1,445 (8.0%)
Race	
White	5,456 (66.6%)
Black	2,262 (28.1%)
Asian	88 (1.1%)
Other	142 (1.8%)
Ethnicity	
Hispanic	193 (2.4%)
Non-Hispanic	7,848 (97.6%)

Source: American Community Survey, 2020. The sample of 59 NPs was weighted to 8,041 using the sample weights created by the survey developers.



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NP Practice Characteristics: GA

Characteristic	GA NPs (n = 8,041)
Highest level of education	
Master's	5,843 (72.7%)
Doctorate (PhD/DNP)	653 (8.1%)
Other	1,509 (19.3%)
Practice Setting	
Acute Care	1,859 (23.1%)
Primary Care	4,500 (56.0%)
Other	1,682 (21.0%)
Pre-tax annual earnings, median	\$97,591
Commute time, median	27 minutes



NP Practice Characteristics: GA

Characteristic	GA NP (n = 372)
Practice status	
Full-time	280 (75.3%)
Part-time	70 (18.8%)
Per-diem	17 (4.6%)
Volunteer	5 (1.3%)
Practice Setting	
Acute care	103 (27.7%)
Primary care	190 (51.1%)
Other	79 (21.2%)
Own panel of patients	250 (63.2%)
Bill under own NPI	274 (73.7%)



NP Practice Characteristics: GA

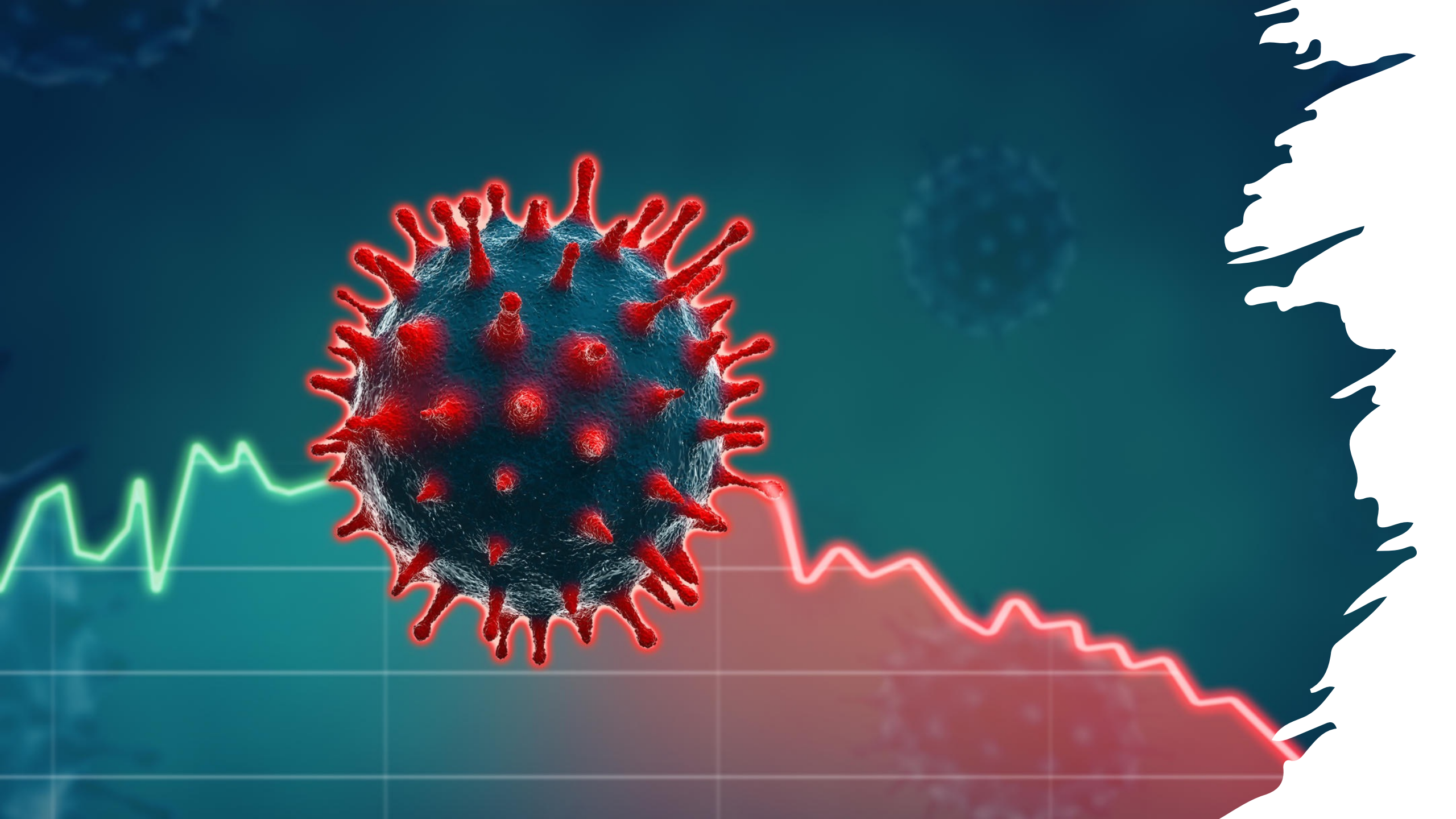
Characteristic	GA NP (n = 372)
Relationships with physicians	
Independent	23 (6.2%)
Collaborate with physician	198 (53.2%)
Supervised by physician	135 (36.3%)
Relationships with other professionals	
Not/somewhat cohesive team	110 (29.6%)
Relationships with administration	
Not/somewhat responsive and supportive	172 (46.2%)
Job Satisfaction	
Very dissatisfied/dissatisfied	48 (12.9%)
Intent to leave job	
Within 3 years	92 (27.5%)



Conclusion

- There has been substantial growth in the nurse practitioner workforce nationwide.
- Improvements in within organizations is one strategy to recruit and retain acute care nurses and to improve the overall quality of care.
- State and organizational regulations can be changed at little or no cost.
- Many hospitalized patients require complex care due to declining health and multiple comorbid diseases
 - Patients that need advanced practice clinicians 24/7.
- Nurse practitioners are a valuable resource to acute care physicians and nurses.





Nursing Workforce: The Challenges

- “The Great Resignation” or “The Great Awakening” demands that we reevaluate acute care nursing
 - Many nurses left their positions; many nurses are approaching retirement age
- Licensure and scope of practice (and data)
 - Nurse practitioners took on an expanded role during the pandemic
 - Retain the expanded role of nurse practitioners in acute care facilities nationwide
- Emphasis should be placed on the economic value of nursing
 - We need to value the financial contributions of nursing care
 - Redesign our payment model based on nursing services
- A redesign of the acute care model is needed ... now
 - A model where nurse practitioners (and technology) play a leading role
 - A model that can result in positive and cost-effective nurse and patient outcomes





Thank You

To All Healthcare Worker



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