



## Inventory of State Health Workforce Data Collection



Center for Health Workforce Studies  
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## PREFACE

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This report was prepared by the Health Workforce Technical Assistance Center (HWTAC) staff, including David Armstrong, Yuhao Liu, and Gaetano Forte. The Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) supports HWTAC under grant number U81HP26492.

Established to support the efforts of HRSA's National Center for Health Workforce Analysis (NCHWA), HWTAC provides technical assistance to states and organizations that engage in health workforce planning. HWTAC conducts a number of initiatives each year designed to provide assistance with health workforce data collection, analysis, and dissemination. HWTAC is based at the Center for Health Workforce Studies (CHWS) at the School of Public Health, University at Albany, State University of New York (SUNY), and was formed as a partnership between CHWS and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina.

The views expressed in this report are those of HWTAC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, HRSA, NCHWA, or the University of North Carolina.

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## BACKGROUND

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The Health Workforce Technical Assistance Center (HWTAC), under a cooperative agreement with the National Center for Health Workforce Analysis (NCHWA), provides technical assistance to states and organizations engaged in health workforce planning. In the last decade, there has been growing interest in developing health workforce data collection and monitoring systems in states. This is especially the case today, as health reform initiatives are implemented in nearly every state. As one of its projects, HWTAC is conducting a survey of states to learn more about their health workforce data collection and analysis efforts. This report describes findings to date from a survey of states about data collection on health workforce supply and demand, as well as the educational pipeline. For more detailed information about health workforce data collection activities taking place around the country, including contact information for the organizations responsible for collecting the data, please visit the HWTAC website at [www.healthworkforceta.org](http://www.healthworkforceta.org).

## METHODS

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An online survey about health workforce data collection in US states was developed in the fall of 2014 and pilot tested in early 2015. Invitations to complete the online survey were sent to all primary care offices, state nursing workforce centers, and other groups believed to be engaged in health workforce data collection. HWTAC staff followed up with non-respondents. The survey is ongoing and the state inventory is continually being updated as more responses are received.



## FINDINGS

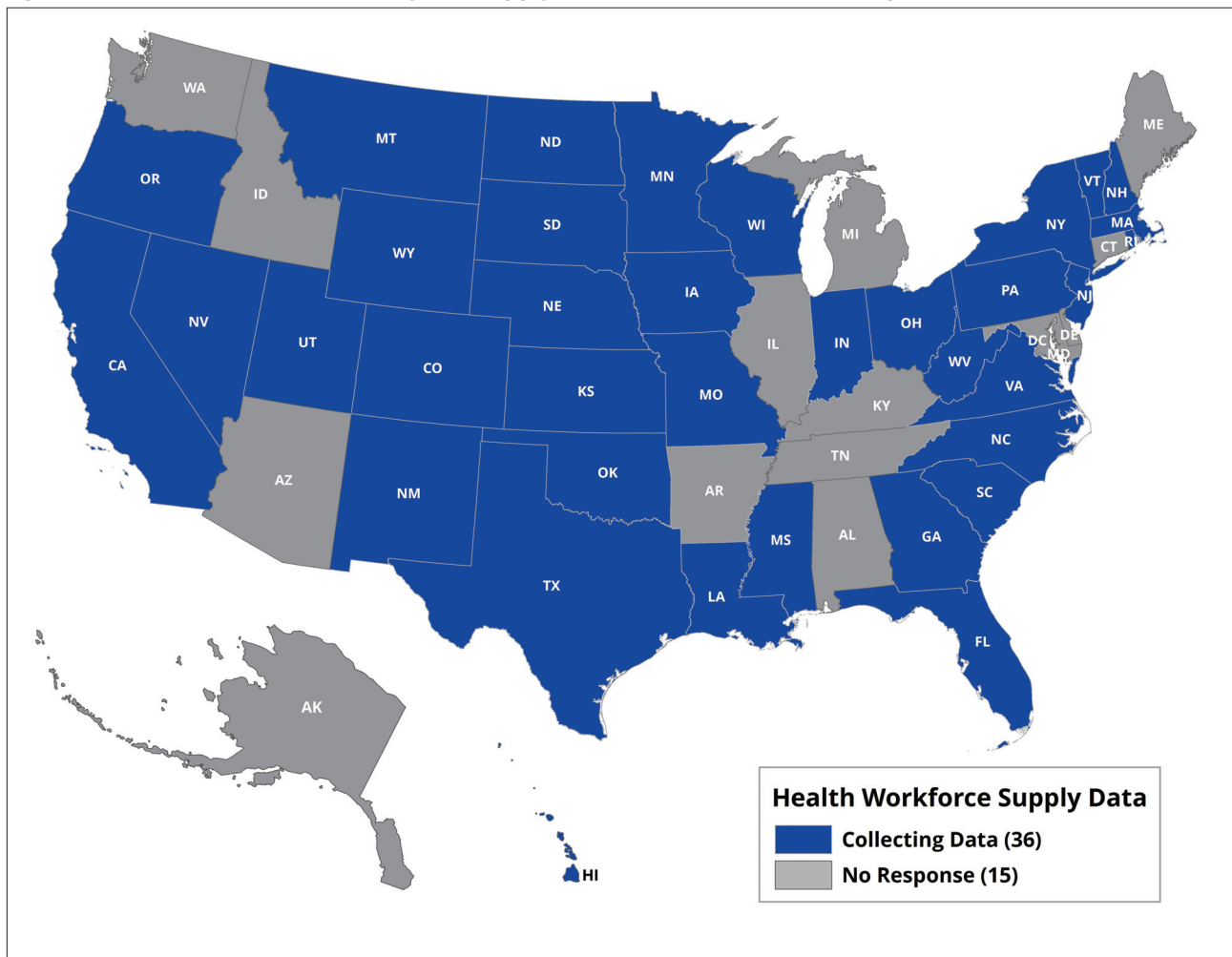
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Since the survey was launched, 47 organizations in 36 states have responded, indicating that they collect health workforce data. This number is expected to grow as organizations continue to respond to the survey. All responding organizations reported collecting health workforce supply data (eg, demographic, educational, and practice characteristics of health professionals). Fewer organizations reported collecting data on health workforce demand (eg, employer recruitment and retention difficulties) or the health workforce educational pipeline (eg, graduation rates and trainee/graduate characteristics). This report summarizes key findings from the survey related to data collection efforts in these 3 areas.

## Health Workforce Supply Data

Organizations in 36 states collect health workforce supply data.

*Figure 1. States Where Health Workforce Supply Data Collection Has Been Reported*



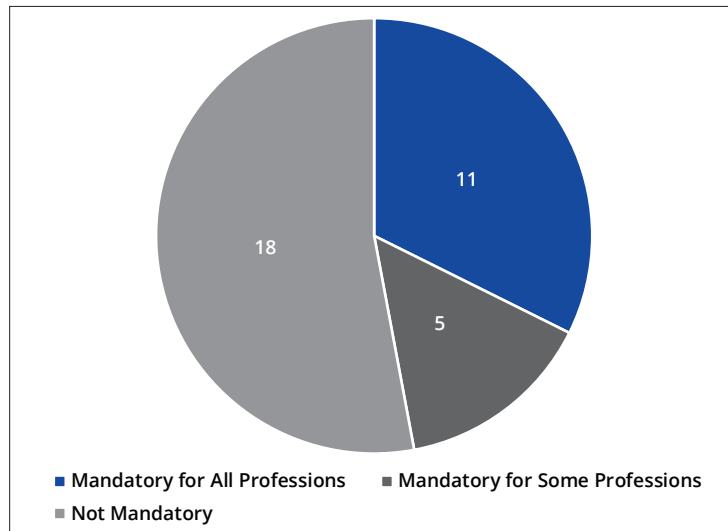
State level health workforce supply data collection are most likely to target physicians [32 states], dentists (26 states), nurse practitioners (NPs) [26 states], and registered nurses (RNs) [26 states].

**Table 1. Health Workforce Supply Data Collection by State and Profession**

State	CRNA	DEN	DH	LPN	MDW	NP	PA	PHA	PHY	PSY	PT	RN	SW	OTH
California			✓		✓	✓			✓			✓		
Colorado	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Florida	✓			✓	✓	✓						✓		
Georgia							✓		✓					
Hawaii							✓		✓					
Indiana	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Iowa	✓	✓			✓		✓	✓	✓					
Kansas		✓			✓	✓	✓		✓					
Louisiana	✓				✓	✓						✓		
Massachusetts	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓		
Minnesota	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓
Mississippi	✓	✓	✓	✓	✓	✓	✓		✓			✓		✓
Missouri		✓				✓			✓					
Montana		✓							✓	✓			✓	
Nebraska	✓	✓			✓	✓	✓	✓	✓	✓	✓			✓
Nevada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New Hampshire									✓					✓
New Jersey	✓			✓	✓	✓						✓		
New Mexico	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New York		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
North Carolina		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
North Dakota	✓			✓	✓	✓						✓		
Ohio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oklahoma		✓							✓					
Oregon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pennsylvania		✓	✓	✓			✓		✓			✓		
Rhode Island		✓	✓						✓			✓		
South Carolina	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
South Dakota	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		
Texas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utah	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vermont	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Virginia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
West Virginia									✓					
Wisconsin				✓			✓		✓			✓		
Wyoming		✓	✓	✓		✓	✓		✓	✓		✓	✓	✓
Total	21	26	20	23	24	26	25	17	32	14	15	26	14	18
CRNA: Certified Registered Nurse Anesthetists. DEN: Dentists. DH: Dental Hygienists. LPN: Licensed Practical Nurses. MDW: Nurse Midwives/Midwives. NP: Nurse Practitioners. PA: Physician Assistants.								PHA: Pharmacists. PHY: Physicians. PSY: Psychologists. PT: Physical Therapists. RN: Registered Nurses. SW: Social Workers. OTH: Other Health Professions.						

In 14 states health workforce data collection is mandatory. In 11 of those states, data collection is mandatory for all of the professions for which data are collected. In 4 states data collection is mandatory for a subset of professions for which data are collected (Missouri, New York, Oregon, and Wisconsin.)

*Figure 2. Mandatory and Voluntary Health Workforce Supply Data Collection*



Data collection is most likely to be mandatory for the following professions: NPs [12 states], physicians [12 states], midwives [11 states], RNs [11 states], dentists [10 states], and licensed practical nurses (LPNs) [10 states].

*Table 2. Mandatory Health Workforce Supply Data Collection by State and Profession*

State	CRNA	DEN	DH	LPN	MDW	NP	PA	PHA	PHY	PSY	PT	RN	SW
Louisiana	✓				✓	✓						✓	
Massachusetts	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
Missouri		✓							✓				
Mississippi	✓	✓	✓	✓	✓	✓	✓		✓			✓	
New Hampshire									✓				
New Mexico	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New York						✓							
North Carolina		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
North Dakota	✓			✓	✓	✓						✓	
Ohio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oregon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
South Carolina		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	
Texas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vermont	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Virginia											✓		
West Virginia									✓				
Total	9	10	9	10	11	12	9	8	12	6	8	11	5

In 29 states health workforce supply data are collected on a regular basis at the time of licensing/relicensing. In most of these states health workforce supply data are only collected through a survey that is part of the licensing/relicensing process. However, a few states report different data collection strategies for different professions. Eleven states report using a recurring survey that is not part of the licensing/relicensing process.

*Table 3. Health Workforce Supply Data Collection Strategies by State*

State	A survey that is part of the licensing process	A survey that is not part of the licensing process	Telephone interviews	In-person interviews
California	✓	✓		
Colorado	✓	✓		
Florida	✓			
Georgia	✓			
Hawaii	✓		✓	
Indiana	✓			
Iowa			✓	
Kansas	✓		✓	
Louisiana	✓			
Massachusetts	✓			
Minnesota	✓			
Mississippi	✓			
Missouri	✓	✓		
Montana	✓	✓	✓	✓
Nebraska		✓		
Nevada	✓	✓	✓	
New Hampshire	✓			
New Jersey	✓			
New Mexico	✓			
New York	✓	✓		
North Carolina	✓			
North Dakota	✓			
Ohio	✓			
Oklahoma		✓		
Oregon	✓			
Pennsylvania	✓			
Rhode Island		✓		
South Carolina	✓			
South Dakota	✓			
Texas	✓			
Utah		✓		
Vermont	✓			
Virginia	✓			
West Virginia		✓		
Wisconsin	✓			
Wyoming			✓	
Total	29	11	6	1

The most frequent supply variables collected are demographic characteristics (35 states), practice characteristics (30 states), and educational backgrounds (32 states). Thirty states report collecting data on health professionals in all 3 of these categories.

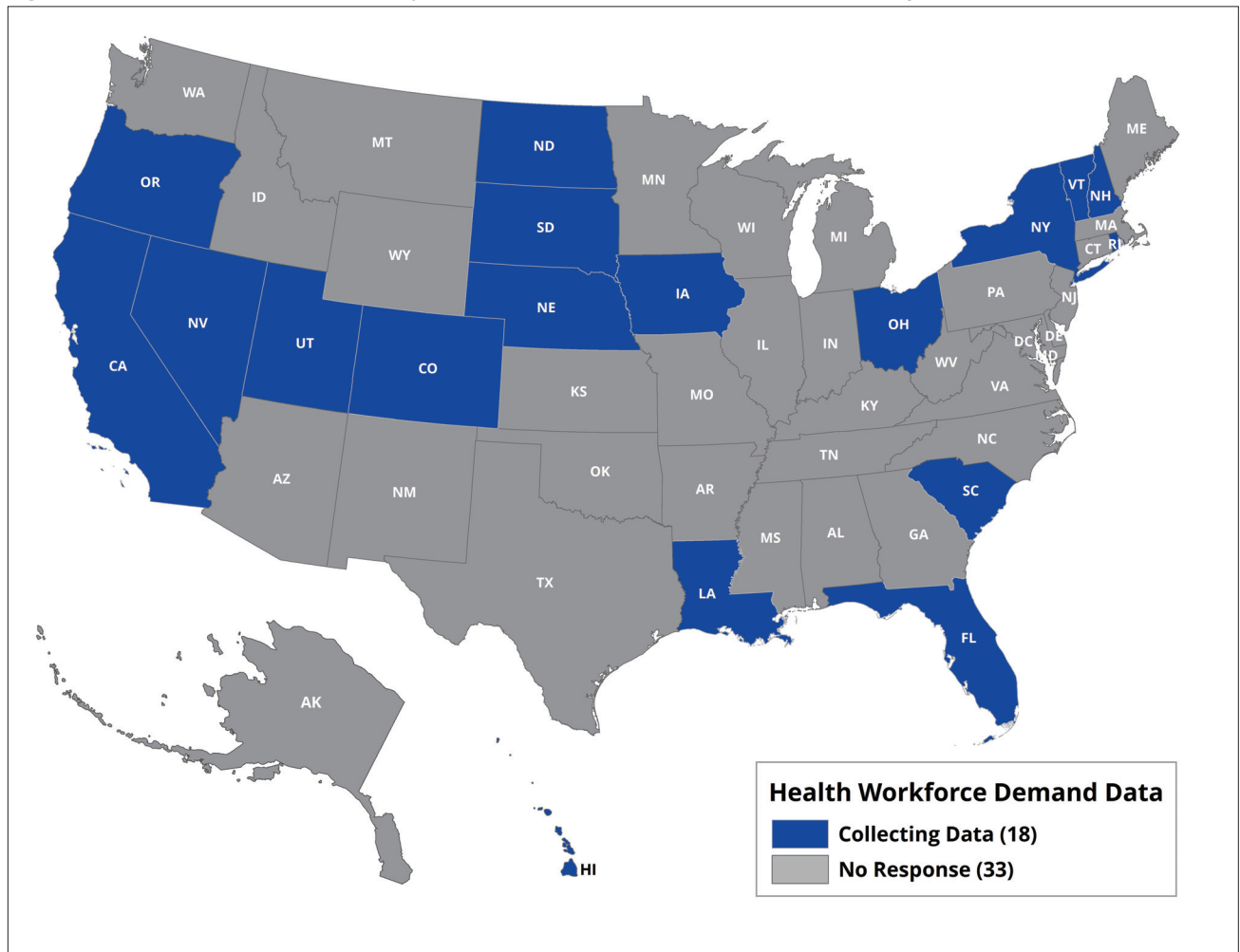
*Table 4. Health Workforce Supply Data Collection by State and Type of Data*

State	Demographic Characteristics	Education Background	Practice Characteristics	Other
California	✓	✓	✓	
Colorado	✓	✓	✓	✓
Florida	✓	✓	✓	
Georgia	✓		✓	
Hawaii			✓	
Indiana	✓	✓	✓	
Iowa	✓	✓	✓	
Kansas	✓	✓	✓	
Louisiana	✓	✓	✓	
Massachusetts	✓	✓	✓	
Minnesota	✓	✓	✓	✓
Mississippi	✓	✓	✓	
Missouri	✓	✓	✓	
Montana	✓	✓	✓	
Nebraska	✓	✓	✓	✓
Nevada	✓		✓	
New Hampshire	✓	✓	✓	✓
New Jersey	✓	✓	✓	
New Mexico	✓	✓	✓	✓
New York	✓	✓	✓	✓
North Carolina	✓	✓	✓	
North Dakota	✓	✓	✓	✓
Ohio	✓	✓	✓	
Oklahoma		✓	✓	
Oregon	✓	✓	✓	✓
Pennsylvania	✓	✓	✓	
Rhode Island	✓	✓	✓	✓
South Carolina	✓	✓	✓	
South Dakota	✓			
Texas	✓	✓	✓	
Utah	✓	✓	✓	
Vermont	✓	✓	✓	
Virginia	✓	✓	✓	✓
West Virginia		✓	✓	
Wisconsin	✓	✓	✓	
Wyoming	✓	✓	✓	
Total	33	32	35	10

## Health Workforce Demand Data

Organizations in 18 states collect health workforce demand data.

*Figure 3. States Where Health Workforce Demand Data Collection Has Been Reported*



Health workforce demand data collection most frequently targets physicians (12 states), NPs (11 states), and RNs (11 states).

Health workforce demand data is collected on a regular basis in 15 states.

*Table 5. Health Workforce Demand Data Collection by State and Profession*

State	CRNA	DEN	DH	LPN	MDW	NP	PA	PHA	PHY	PSY	PT	RN	SW	OTH
California	✓			✓	✓	✓	✓	✓				✓	✓	
Colorado		✓							✓					
Florida	✓			✓	✓	✓						✓		
Hawaii							✓		✓					
Iowa	✓	✓			✓		✓		✓					
Louisiana	✓			✓	✓	✓						✓		
Nebraska							✓	✓	✓		✓			✓
Nevada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New Hampshire									✓					
New York	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
North Dakota	✓			✓	✓	✓						✓		
Ohio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Oregon	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
Rhode Island									✓					
South Carolina				✓	✓	✓						✓		✓
South Dakota	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		
Utah												✓		
Vermont						✓	✓		✓					
Total	10	7	5	10	10	11	10	7	12	3	6	11	4	5



Health workforce demand data are most likely to be collected for hospitals (12 states) and nursing homes (9 states).

*Table 6. Health Workforce Demand Data Collection by State and Setting*

State	Community Health Centers	Home Health Agencies	Hospitals	Nursing Homes	Other
California			✓		
Colorado	✓				
Florida		✓	✓	✓	✓
Hawaii					✓
Iowa	✓		✓		✓
Louisiana		✓	✓	✓	
Nebraska					✓
Nevada			✓		✓
New Hampshire	✓	✓	✓	✓	✓
New York	✓	✓	✓	✓	
North Dakota			✓	✓	✓
Ohio	✓	✓	✓	✓	✓
Oregon		✓	✓	✓	✓
Rhode Island	✓			✓	
South Carolina			✓		
South Dakota					✓
Utah	✓	✓	✓	✓	
Total	7	7	12	9	10

The most frequently collected demand data are on vacancies (12 states), turnover (10 states), and recruitment difficulty (10 states). In 4 states, information is also collected on retention difficulties.

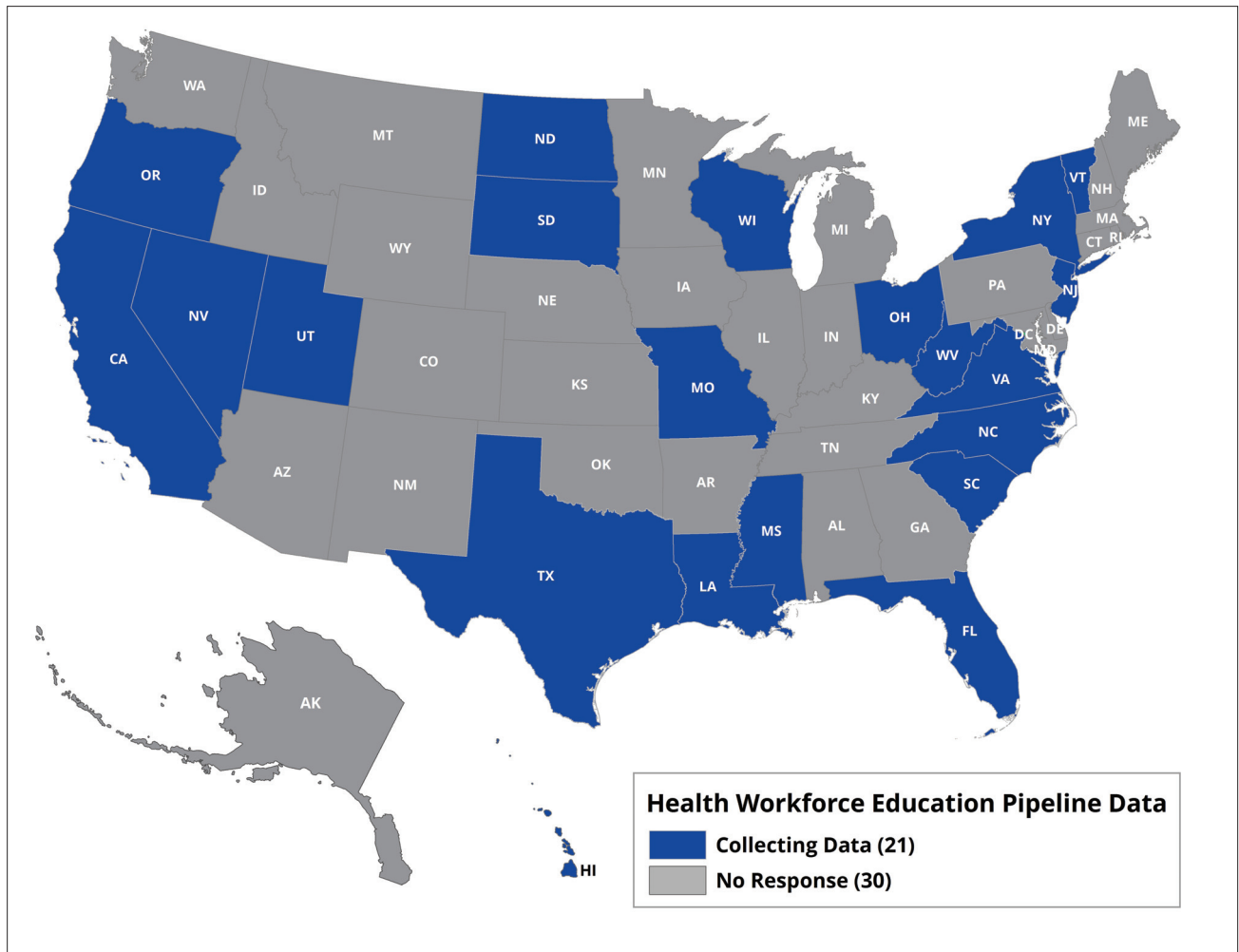
*Table 7. Health Workforce Demand Data Collection by State and Type of Data*

State	Vacancies	Turnover	Recruitment Difficulty	Retention Difficulty	Other
California	✓	✓	✓		
Colorado	✓	✓	✓	✓	
Florida	✓	✓	✓		✓
Hawaii					✓
Iowa	✓	✓			✓
Louisiana	✓	✓	✓		
Nebraska	✓				✓
Nevada	✓	✓	✓	✓	
New York	✓	✓	✓	✓	✓
North Dakota	✓	✓	✓		
Ohio					✓
Oregon	✓	✓	✓		
Rhode Island					✓
South Carolina			✓		✓
South Dakota					✓
Utah	✓	✓	✓	✓	
Vermont	✓				
Total	12	10	10	4	9

## Health Workforce Educational Pipeline Data

Organizations in 21 states collect information about the health workforce educational pipeline.

*Figure 4. States in which Health Workforce Educational Pipeline Data Are Collected*



Health workforce educational pipeline data are most likely to be collected for physicians (15 states), RNs (15 states), LPNs (11 states), and NPs (11 states).

Educational pipeline data collection is recurring in 19 states.

*Table 8. Health Workforce Education Pipeline Data Collection by State and Profession*

State	CRNA	DEN	DH	LPN	MDW	NP	PA	PHA	PHY	PSY	PT	RN	SW	OTH
California	✓				✓	✓						✓		
Florida	✓			✓	✓	✓						✓		
Hawaii									✓					
Louisiana	✓				✓	✓						✓		
Mississippi		✓							✓					
Missouri									✓					
Nevada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
New Jersey				✓								✓		
New York									✓			✓		
North Carolina									✓					
North Dakota	✓			✓		✓						✓		
Ohio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Oregon		✓	✓				✓	✓	✓	✓	✓		✓	✓
South Carolina		✓	✓	✓		✓	✓	✓	✓		✓	✓		✓
South Dakota	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		
Texas	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓		
Utah	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		
Vermont						✓			✓			✓		
Virginia				✓								✓		
West Virginia									✓					✓
Wisconsin				✓			✓		✓			✓		✓
Total	9	8	5	11	7	11	8	7	15	5	6	15	3	5

Educational pipeline data are collected from education programs in 16 states and from individuals in training in 7 states.

Information is most likely collected about graduation rates (19 states), enrollment rates (16 states), and the demographic characteristics of trainees (14 states). In a few states data are collected about trainees' post-graduation plans (6 states) and job market experiences (5 states).

*Table 9. Health Workforce Education Pipeline Data Collection by State and Type of Data*

State	Graduation Rates	Enrollment Rates	Demographic Characteristics	Job Market Experiences	Graduation Plans	Other
California	✓	✓	✓	✓		
Florida	✓	✓	✓			✓
Hawaii	✓					
Louisiana	✓	✓	✓			
Mississippi	✓	✓	✓	✓	✓	
Missouri	✓	✓	✓			
Nevada	✓	✓	✓	✓	✓	
New Jersey	✓	✓	✓			
New York	✓	✓	✓	✓	✓	
North Carolina						✓
North Dakota	✓	✓	✓			✓
Ohio	✓		✓		✓	
Oregon	✓	✓	✓			
South Carolina	✓	✓				
South Dakota	✓					
Texas						✓
Vermont	✓	✓				
Virginia	✓	✓	✓			✓
Utah	✓	✓	✓			
West Virginia	✓	✓			✓	✓
Wisconsin	✓	✓	✓	✓	✓	✓
Total	19	16	14	5	6	7

## DISCUSSION

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The Health Workforce Data Collection Inventory is an ongoing project. To date 47 organizations in 36 states have reported collecting health workforce data. The majority of organizations that are collecting data are state agencies and universities, nursing centers, and area health education centers (AHECs). Of the 14 states where no responses have been received, it is anticipated that some organizations are collecting data and others are planning to launch data collection efforts.

Every survey respondent to date indicated that they collect health workforce supply data (47); fewer organizations report collecting health workforce demand data (20) and education pipeline data (23). While in some states there are efforts to collect health workforce data on a wide array of health professions, the most likely professions are physicians and licensed nursing professions (eg, NPs, RNs, and LPNs).

## CONCLUSION

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In order for health reform initiatives to succeed, there is an urgent need to better understand the supply and distribution of a state's health workforce. Lack of relevant and timely data on the health workforce is a significant barrier to the development of effective health workforce programs and policies to support improvements in the health care delivery system. Expanded, prompt collection of data about the health workforce is essential.

There is growing interest and activity among states to collect the health workforce data needed to inform effective health workforce planning. This HWTAC initiative aims to describe and routinely update workforce data collection efforts underway in states. The inventory is designed to be a resource for states, where they can learn from each other about best practices in data collection.

## About the Authors

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### David Armstrong, PhD

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As director of HWTAC, Dr. Armstrong manages the day-to-day operations, disseminates information about the Center, and regularly provides technical assistance to individuals, hospitals, and various states and organizations.



### Yuhao Liu, MPA

*Research Associate, Center for Health Workforce Studies*

Mr. Liu specializes in data collection, analysis, and visualization, as well as relational database management, public policy research, and financial analysis. He holds an MPA with concentrations in Statistics and Information Strategy and Management from the University at Albany, SUNY.



### Gaetano J. Forte

*Technology Officer, Health Workforce Technical Assistance Center*

As technology officer of HWTAC, Mr. Forte implements advances in technology for a broad range of the Center's activities, including the provision of technical assistance and the dissemination of its work. Mr. Forte is also a veteran health services researcher having spent nearly 2 decades studying the health workforce.



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