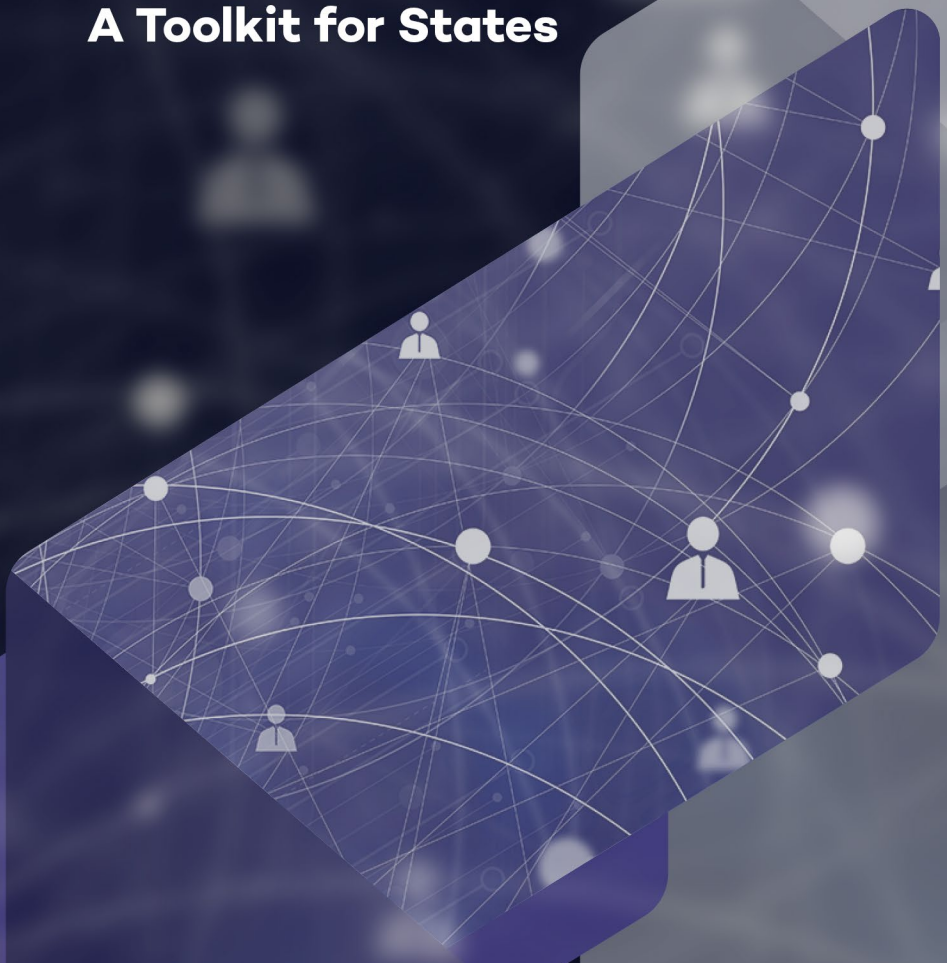
Informing Health Care Workforce Policy by Leveraging Data: A Toolkit for States



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EXECUTIVE SUMMARY

Ensuring an adequately trained and well-distributed health workforce is critical to maintaining the health and well-being of the population. Imbalances in supply and distribution make it challenging for already overburdened providers to meet the needs of their communities and threaten states' ability to effectively prepare a workforce response in times of public health crises. State policy makers need accurate health care workforce data to assess the supply, demand, and distribution of health care providers and to plan for the future. Accurate health workforce data will help states achieve an appropriate balance of clinicians in the right settings and geographic locations to meet demand. It can also help states assess existing recruitment and retention policies and restructure incentives to address gaps. By collecting standardized information on licensed health care professionals, states can streamline health care workforce data collection and analysis to address key policy questions and improve health care access and delivery.

This toolkit 1) describes how health care workforce data can be used to address questions regarding access to care, 2) provides a series of considerations for states to improve their health care workforce data collection, and 3) presents examples of states that have leveraged data effectively to inform policy.

INTRODUCTION

The health care workforce is critical to maintaining the health and well-being of the population within a given state. However, many states lack information necessary to accurately assess the existing supply, demand, and distribution of health care providers. Without data, states may have a general awareness of workforce shortages and geographic imbalances, generally represented by higher concentrations of health care providers in and surrounding certain metropolitan areas and lower concentrations in rural and low-income urban areas, but they lack ability to quantify the issues. With the right data, states can make decisions based on facts rather than anecdotes, leveling the playing field across interested parties.

Some researchers predict national shortages of certain health care providers that will grow worse over time. [i, ii] In addition, health care workforce imbalances threaten states' ability to effectively respond in times of public health crises. As states transform their health care systems to enhance the quality and slow the growth of health care costs, new delivery models require investment in different types of providers and new technologies to provide care in diverse settings. Imbalances in supply and distribution can make it challenging for already overburdened providers to serve their communities, making transformation efforts potentially seem out of reach and further exacerbating access and quality disparities in rural and other underserved areas.

With more robust data states can take a more holistic approach with consideration of state specific payment, delivery, and licensure policies to address the supply and distribution of providers by specialty, setting, and location to ensure the right providers are in communities where they are most needed.

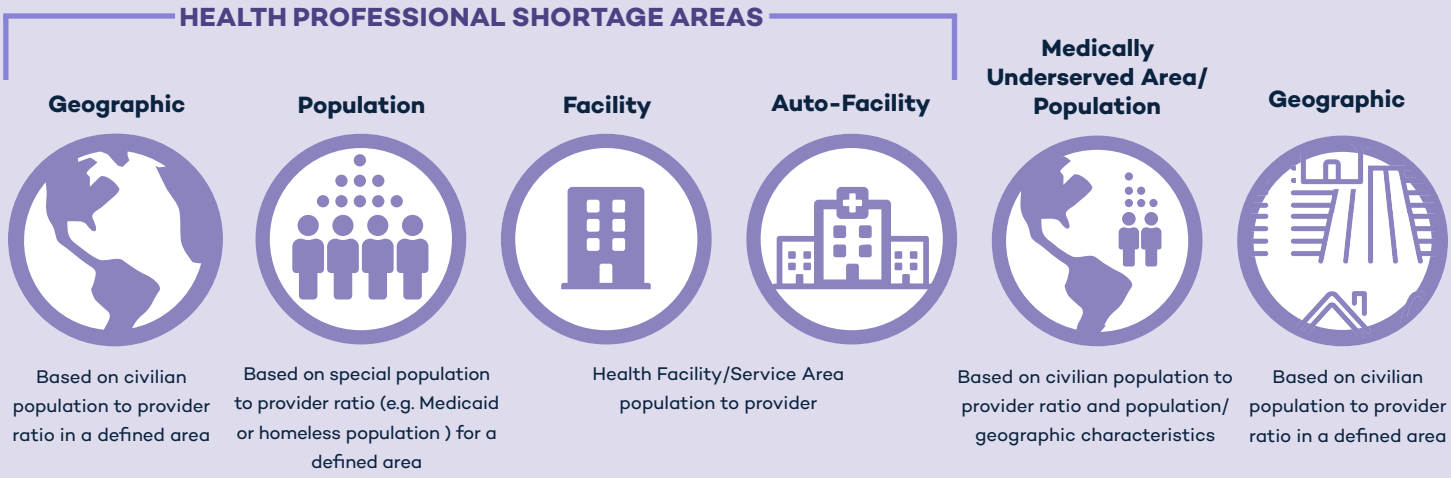
Normal health workforce challenges have been exacerbated by the COVID-19 pandemic. As cases of COVID-19 have risen and demands on the workforce have increased, states have established significant flexibilities through executive orders, legislation, regulations, and guidance to increase the size and capacity of the workforce. [iii, iv] Facing current significant budget shortfalls, states must evaluate their programs and identify areas of greatest need to inform policy and programming, including how telehealth policies affect the health workforce.

Collecting and analyzing health care workforce data helps states identify shortages and maldistribution, leverage targeted workforce development solutions, prepare responses to public health emergencies, and plan for the future by analyzing trends and anticipating changes. As states incentivize new payment and delivery models and scope of practice policies evolve, it is important to continuously look at health workforce trends in the context of such changes. By collecting standardized information on licensed health care professionals, states can identify areas of need and determine if current recruitment and retention strategies are working.

This toolkit 1) describes how health care workforce data can be used to address questions regarding access to care, 2) provides a series of considerations for states to improve their health care workforce data collection, and 3) presents examples of states that have leveraged data effectively to inform policy.

FEDERAL SHORTAGE DESIGNATIONS AND INCENTIVE PROGRAMS

The federal government supports state-level health workforce initiatives through programming and funding. The Health Resources and Services Administration (HRSA) uses state-submitted health workforce data to designate several types of health professional shortages areas (HPSAs) and Medically Underserved Areas/Populations (MUA/Ps). These designations are used to prioritize awards for federal programs that provide funding for health workforce development for communities with the greatest need that are significantly impacted by workforce shortages in primary care, dental care, and mental health.



Federal Incentive Programs associated with designations
National Health Service Corps (NHSC) Scholarship and Loan Repayment Programs, Nurse Corps, CMS Physician Bonus Payments, HHS Exchange Visitor Program and J-1 Visa Waivers, Health Center Funding

See HRSA website for designation-specific benefits: Additional federal incentive programs include:

- National Health Service Corps
- Nurse Corps Scholarship Program
- CMS Bonus Payments
- Department of Health and Human services J-1 Visa
- US Health Center Program

HOW HEALTH WORKFORCE DATA CAN INFORM STATE POLICY

The following tables include questions Governors may pose that can be addressed through use of health workforce data including corresponding health workforce data sources and potential policy applications.*

State Health Workforce Supply

How many health care providers are practicing in my state?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Total licenses by license type • Licensee address • License status (active, retired, etc.) • License number	• License number • Specialty • Role • Practice address • Practice setting • Full time equivalency (FTE) (hours/week) • Telehealth provider	• License number • Medicaid provider status (enrolled vs. not enrolled) • Specialty • Taxonomy** • Claims counts (can be used to approximate FTE) • Practice address	• Bureau of Labor Statistics Employment Estimates	• Efficiently identifying HPSAs and MUAs (ex: Indiana Primary Care Needs Assessment) • Targeting funding for state loan repayment Programs (ex: evaluation of Indiana behavioral health loan repayment program) • Informing licensure portability initiatives (ex: Indiana Nurse Licensure Compact) • Understanding telehealth workforce capacity (ex: Indiana telehealth providers report) • Exploring variations between license counts and FTE (ex: Indiana de-duplicated behavioral health providers)

Is the health workforce racially and ethnically representative of the population?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• License number	• License number • Sex • Race • Ethnicity • Languages spoken	• License number • Medicaid provider status	• N/A	Informing workforce diversity initiatives such as: • Area Health Education Center programming • Health professions training programs at public institution admission practices • Targeted scholarship initiatives

* Names of data sources and specific data elements available in different databases vary by state. Regulatory and Medicaid data are available in most states as part of routine administrative procedures, while supplemental data may be collected through additional, targeted initiatives. It is important to note that analysts must have common identifiers to link information across data sources. License number is a common identifier typically available across data sources. Additionally, nomenclature for certain data elements vary by source. For example, a professional's practice address is synonymous with their rendering address for reimbursed Medicaid claims.

** Taxonomy codes are 10-character codes used by CMS to organize the classification of health care specialties (this is the source of "Specialty" information in the NPI data). The provider relations divisions of Medicaid offices frequently use these codes for workforce related analyses. HRSA uses these codes now for inclusion in the HPSA designations. Unfortunately, these codes frequently do not represent the actual practice specialty.

Understanding State Health Workforce Supply

- Does my state currently have, or will it have, health workforce shortages, skills shortages, or population-based shortages within the next five years? If so, where, and in what field?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Total licenses by license type • Licensee address • License status (active, retired, etc.) • Age/Date of birth • License number	• License number • Specialty • Role • Practice address • Practice setting • Full time equivalency (FTE) (hours/week) • Telehealth use • Patient panel (Medicaid) • Populations served • Services provided	• License number • Medicaid provider status (enrolled vs. not enrolled) • Specialty/taxonomy • Claims counts (can be translated to approximate FTE) • Provider address (rendering location)	• J1 visas, National Health Service Corps participants	• Identifying need for new levels of professionals or modifications to scopes of practice [v] • Efficiently identifying HPSAs and MUAs (ex: Indiana Primary Care Needs Assessment) • Targeting funding for State Loan Repayment Programs (ex: evaluation of Indiana behavioral health loan repayment program)

Health Workforce Pipeline: Assessment and Alignment

- Is my state retaining the providers we train (is there a brain drain)?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• State where licensee received qualifying education • Year licensee completed qualifying education • License number	• License number • Reported state where received qualifying education • Year completed qualifying education	• N/A	• State higher education agency data on enrolled students and graduates by institution and program	• Statewide Longitudinal Education Database (SLDS) (ex: application of Minnesota's SLDS to examine behavioral health workforce) • Retention initiatives (ex: loan repayment, tax incentives, etc. (ex: Tracking Primary Care Physician Retention in Rural Areas of North Carolina) • Evaluating career pathways (ex: Indiana Certified Nurse Aide career pathways)

Health Workforce Pipeline: Assessment and Alignment

Are we training enough providers to meet demand?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Total licenses by license type • Licensee address • License status (active, retired, etc.) • Age/Date of Birth • License number	• License number • Specialty • Role • Practice address • Practice setting • FTE (hours/week) • Employment plans • Telehealth use • Patient panel (Medicaid) • Populations served • Services provided	• N/A	• Job posting data (Burning Glass or equivalent) • Employer-reported demand (Bureau of Labor Statistics sample surveys)	• Develop new training programs or expand, modify, or decrease number/size of training programs (ex: opening a new chiropractic school in North Carolina) • Modify training programs to address specific skill needs

Should my state expand or modify the way we pay for Graduate Medical Education (GME) in Medicaid, and if so, what types of providers should we focus on and where?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Count of licensed professionals (when available through transcript review) • Information on educational programs	• License number • Specialty • Role • Medical School/Training Program • Residency • Practice address • Practice setting • Full time equivalency (FTE) (hours/week) • Employment plans • Telehealth use • Patient panel (Medicaid) • Populations served • Services provided	• License number • Enrolled providers • Medicaid claims counts by rendering provider	• GME program data (location and count of residents by type and year)	• Generate a strategic plan for GME or modification of existing allocation (ex: Florida utilizes physician survey data to inform state GME planning) • Create new GME programs that include providers other than physicians • Fund additional GME slots at existing programs

Public Health Emergencies: Health Workforce Preparedness and Evaluation

- How can my state identify and leverage a reserve workforce during a public health emergency? What has been the experience of providers during the pandemic?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Licensees willing to volunteer • Licensee address • License status (active, retired, residency, training, etc..)	• License number • Specialty • Role • Practice address • Practice setting • Full time equivalency (FTE) (hours/week) • Telehealth use	• N/A	• Volunteer survey administered to willing licensees to capture: geographic availability, FTE availability, skills, settings	• Policies enabling reserve workforce deployments (ex: allowing retired licenses to reactivate, extending privileges to out-of-state licenses, etc.) vi • State developed processes to connect professionals with facilities in need • Minnesota's COVID-19 survey of licensed professionals

- How can I assess how many licensed health professionals have COVID-19? How many of these professionals are dying from COVID-19?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Total licenses by license type • Licensee address • License status (active, retired, etc.) • License number	• License number • Specialty • Role • Practice address • Practice setting	• N/A	• State reportable conditions case investigation data system • Electronic death registry	• Additional personal protective equipment measures/investments (ex: North Carolina assessment of critical care nursing and respiratory therapists) • Health care provider impact analyses (ex: Centers for Disease Control & Prevention reporting) • Recruiting qualified individuals to serve in response to COVID-19 (ex: Indiana leveraging a reserve workforce) • Understanding provider experience during COVID-19 (ex: Minnesota fielded a provider survey)

Medicaid Matters

- Does my state have enough Medicaid-enrolled providers serving individuals with Medicaid, and if not, what are the barriers to participation?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Total licenses by license type • License status (active, retired, etc.) • License number	• License number • Medicaid participation (percent of panel) • Reported barriers to serving individuals with Medicaid • Populations served (example: individuals with Medicaid, individuals who are homeless)	• License number • Enrolled providers • Claims count tied to rendering provider	• N/A	• Completing Centers for Medicaid & Medicare Services-required deliverable: Access Review Monitoring Plan • Inform coverage and reimbursement policies for Medicaid. • Medicaid provider recruitment/activation plans (ex: Indiana report outlining barriers

Telehealth Adoption

- Are providers interested in participating in telehealth?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• Telehealth certification, license, etc. • Licensee address with out-of-state residence • License number	• Specific question to identify their interest and/or current participation in telehealth	• Telehealth claim code/modifier tied to rendering provider	• N/A	• Inform telehealth legislation and regulations (ex: Indiana telehealth physicians report)

Health System Transformation

- What is my state's current capacity to vaccinate the population?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• License number for professionals authorized to vaccinate (note that some individuals without licenses may be authorized to vaccinate in some states)	• License number • Practice Location • Hours in direct patient care	• N/A	• N/A	• Inform scope of practice policy regarding vaccine administration • Support implementation of vaccination campaigns

- What is our current capacity for delivery of Medication Assisted Treatment (MAT) for individuals with Medicaid?

Regulatory (Licensing)	Supplemental	Medicaid	Other Data Sources	How Information Can Inform Policy and Programs
• License number	• License number • Practice location • Hours in direct patient care • MAT participation	• License number • Enrolled providers • Claims counts for MAT	• Substance Abuse and Mental Health Services Buprenorphine waivered provider list	• Determine gaps in MAT availability for individuals with Medicaid coverage • Recruit Medicaid providers in targeted communities to obtain DATA 2000 waiver

KEY CONSIDERATION #1

Identify and engage key stakeholders—including agencies across the state, health professional boards, and the industry—to garner buy-in and establish policy priorities

Governors have a unique ability to convene stakeholders across sectors to identify health workforce needs and build or improve existing data systems that can support identification of health workforce gaps. Engaging representatives with different perspectives can aid in identifying existing data sources, determining and/or building support for data collection strategies, and supporting alignment in priority areas for health workforce

policy. Outside of government, some states partner with universities to assist in data collection and analysis. Industry, association, and consumer groups also may play a significant role as they may have specific insight or policy expertise from their own members or stakeholders.

EXAMPLES OF HEALTH WORKFORCE STAKEHOLDERS

Executive Branch	Legislative Branch	Employers/Providers	Community Partners
Governor's Office	Health Committees	Health System Payers	Universities
Health/ Primary Care Office/Rural Health	Labor/Regulatory Committees	Professional & Provider Associations	Area Health Education Centers
Labor		Clinics (Rural Health Clinics, Federally Qualified Health Centers)	Health Associations
Education		Community Mental Health Centers	Chamber of Commerce
Connections		Long-Term Care	Correctional institutions/ detention facilities
Professional Boards			Other nongovernmental organizations
Cross-sector Committees/Councils/Stakeholder Groups/Tribes and Tribal-Serving Health Facilities			

States can engage stakeholders in a variety of ways, including formal bodies authorized in statue, time-limited informal workgroups convened by the Governor's office, or ad hoc meetings to discuss emerging issues. Several states have workforce task forces or boards that help guide policy making. Indiana, Virginia, and Washington offer three examples of how states can engage stakeholders.

ORGANIZING THE CONVERSATION: STATE EXAMPLES

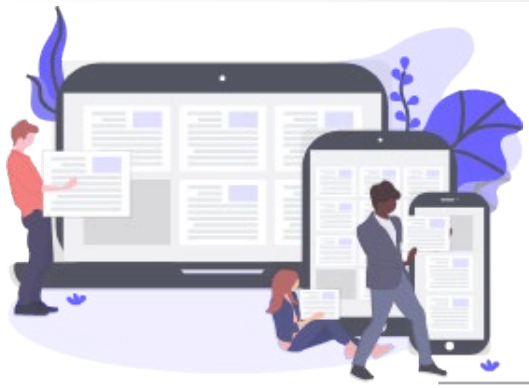
Indiana

Governor's Health Workforce Council

Established by press release

15 member governor-appointed body (state agencies, employers, legislators, academia, ect.); chaired by workforce development)

Purpose: coordinating health workforce-related policies, programs, and initiatives within Indiana



Virginia

Department of Health Professions' Healthcare Workforce Data Center

Established in statute; sits within licensing agency

Profession Reports are the mainstay of the HWDC's data products. Data are collected through surveys at license renewal. They provide a statewide look at the workforce on a profession-by-profession basis.

Purpose: to provide advice and expertise derived from survey and licensure data analysis and reporting, monitor relevant federal data, and collaborate and consult with other state agencies and the Health Workforce Technical Assistance Center

Washington

Health Workforce Council

Established by governor, memorialized in statute

Council representatives are from a range of health care stakeholders. Council has a funded health workforce policy analyst

Purpose: providing updates to policymakers, tracking progress, and bringing together key stakeholders

KEY CONSIDERATION #2

Maximize efficiencies to collect health workforce data using existing sources and processes to inform analysis and policy development

There are several ways in which states collect health workforce data. Collecting and analyzing both basic licensure and supplemental data offers states the opportunity to gather standardized information on entire segments of the workforce and is a health workforce data collection best practice. When health care professionals are licensed, licensing boards collect data about each licensee. Many states give regulatory bodies the authority to collect information during the state regulatory process. Each state and licensing board has unique requirements governing information collected and the frequency of renewal (often every two to three years), but they typically collect only basic demographics and proof that providers are adhering to licensure requirements such as completion of continuing education. Some states collect supplemental data on a mandatory or voluntary basis during license renewal. Voluntary data collection has mixed results. If data are collected as part of license renewal and embedded seamlessly into the renewal process, the strategy can be highly successful. Lower participation is typical for voluntary data collection initiatives implemented outside of regulatory processes (e.g. post completion of required process). Sometimes licensed providers demonstrate concern about the privacy of their reported information. States can address this concern through aggregate reporting to ensure anonymity.

New Hampshire's 12 Year Journey to Health Workforce Data Collection

Over the course of 12 years, the state of New Hampshire passed several pieces of legislation leading to mandatory data collection starting with the establishment of the state office of rural health and followed by a charge to establish the Health Professions Data Center to collect health care workforce data. Neither law granted authority to collect data by surveying during the license renewal process because the oversight committee determined that it was not the intention of the legislature to mandate licensing board involvement. The Commission pursued separate legislation that would grant statutory authority to collect data; however, the licensing boards still had the option to participate and it was not a condition of licensure. Finally in 2019, new legislation passed requiring all named health professions licensing boards to participate and made it a condition of licensure to complete the health workforce survey with an option to opt out.

Telehealth, Interstate Licensure, and Supplemental Data:

Individuals may hold active licenses in multiple states. State license alone is not enough to determine whether or to what extent a professional practices in a given state. As telehealth and interstate licensure become more common, supplemental information becomes more critical to accurately assess the number of licensed professionals providing health care services within a state, either in person or remotely.

Supplemental information, like specialty, Medicaid participation, and practice location, is critical to state health workforce data analyses, yet such information is often not included in the basic licensure process. States can use supplemental information to help address pressing and evolving policy questions, but absent requirements, states may struggle to collect robust data. For example, in some states the entity responsible for preparing the

required workforce data for HPSA applications is not authorized to access licensure or supplemental data. In these instances, workforce data are collected manually through internet searches and provider phone surveys, email outreach, or regular mail. These strategies are time and labor intensive and do not necessarily enable states to easily aggregate and analyze comprehensive information. Collection and use of licensure data along with supplemental surveys are the most efficient means of obtaining data to support state HPSA applications.

Beyond licensure and supplemental data, some states aggregate health workforce information from sources such as Medicaid, including provider enrollment and participation. Together these data can be used to inform Medicaid provider relations and network adequacy initiatives. The following table presents a side-by-side comparison of common health workforce data sources.

COMPARISON OF COMMON STATE HEALTH WORKFORCE DATA ELEMENTS BY SOURCE *

Questions	Regulatory	Supplemental	Medicaid
What kind of data are available from the source?	Basic demographics and training information	Personal and professional characteristics not collected at licensure	Provider enrollment or reimbursement information
How are the data collected?	Through initial licensure application or renewal	Generally using survey tools, which may be administered in conjunction with license renewal or on an ad hoc basis	As part of provider enrollment and through claims submission process
What type of information is in the data source?	Name Date-of-birth Initial license date License expiration dates Educational characteristics State license number	Demographic data (gender, race, ethnicity) Location of educational program Certifications Employment status/specialty/roles Practice location/setting Hours in patient care Medicaid participation State license number (if data are collected in conjunction with license renewal)	Provider type/specialty National Provider Identifier (NPI) State license number Claims count at rendering provider level Billing address Practice/rendering address
What are the benefits of using this data source?	Readily available in most states. No additional cost to collect.	Enables determination of workforce employed/practicing in the state and supports workforce evaluations, needs assessments, and federal shortage designations.	Generally available through data sharing agreements across state agencies, minimal cost to obtain, can be linked to license data using state license number.
What are the limitations of this data source?	Limited data. No information about employment/practice characteristics.	Requires resources to develop and implement survey	Providers may bill under group NPI numbers. Street address may be billing address as opposed to actual location where clinical service was provided.

* Actual data elements collected vary by state

States can engage stakeholders in a variety of ways including formal bodies authorized in statue, time-limited informal workgroups convened by the governor's office, or ad hoc meetings to discuss emerging issues. Several states have workforce taskforces or boards that help guide policy making. Indiana, Virginia, and Washington offer three examples of how states can engage stakeholders.

EXAMPLES OF HEALTH WORKFORCE DEMAND DATA SOURCES

Type of Data	Data Source Examples	Data Source Examples
Job postings use keywords and search functions to quantify the number of openings, describe the geographic variety of openings, and report on time from posting to fulfillment	Burning Glass, LinkedIn, Indeed	Some sectors use one posting to fill multiple positions (example: nursing assistants), which poses threats to accurate analysis.
Benchmark Ratios, such as population per provider ratios and standardized workforce information are frequently used as proxy for demand metrics	HPSAs are largely based on population to provider ratios. Specific methods and calculations can be found on the HRSA Bureau of Health Workforce website or in the Federal Register. State average population to provider ratio may also serve as a benchmark to determine whether certain geographies are above or below the state average. Averages can also be calculated for different geographies (example: urban versus rural)	HPSA population-to-provider ratios take into account primary care physicians, dentists, and mental health professionals, including psychiatrists and other mental health professionals. Large populations/aggregations in metropolitan areas may skew data for state average calculations.
Drive Time uses time reported for an individual to drive to receive services.	Medicaid network adequacy reviews	Individuals may elect to travel further (i.e. bypassing closer sources of care) to reach their preferred care source, skewing results.
Patient panel capacity involves examining whether a provider has a full or open panel and may indicate whether there is sufficient, excess, or inadequate access for specific provider types. Also provides an opportunity to consider payer mix; a provider may have a "full" Medicaid panel but accept Medicare, private insurance, or self-pay.	Limited data. No information about employment/practice characteristics.	Provider-level surveying outside of license renewal may be resource intensive.
Employer/Stakeholder Reporting gathers input from employers on hiring practices/demand for services. This can be explored from the profession or sector/service perspective. Sector-specific convenings/reports are required as part of funding a state receives from the federal Department of Labor and can be leveraged to gather sector level demand information from employers.	Documented, routine reporting by a targeted group of employers* Convening forum/facilitated discussion (especially useful for smaller health care sectors, private practitioners, standalone clinics, etc.)	Findings may only apply to a specific geographic region or population subset.

* Employer Reported Workforce Demand Example: The Washington State Sentinel Network utilizes networks of large health systems "sentinels" to track and report employment/labor market analyses back to the state. For more information visit: http://wa.sentinelnetwork.org or http://wa.sentinelnetwork.org/wp-content/uploads/sites/2/2019/05/SN-Questions-Summary.pdf

KEY CONSIDERATION #3

Consider streamlining regulatory structure, statutory authority, and data management to facilitate data collection

Regulatory Structure: A state's model for occupational regulation is an important part of workforce data collection, especially with regard to professional license renewals. State regulatory governing models vary from a decentralized structure where licensing boards are fully autonomous to a centralized structure where licensing boards serve in an advisory role to a central agency, commission, or council. More centralized governance can create efficiencies for decision-making and enhance the extent to which states can easily collect uniform, supplemental data about licensed health professionals. Understanding the regulatory structure for targeted health occupations is critical to determining who needs to be part of health workforce data collection discussions. It is important to note that regulatory structure also may vary by profession within a state. In cases where more autonomous boards are not

aligned regarding use of licensure and supplemental data to inform policy, states may have an opportunity to work with a subset of boards to make progress and demonstrate the value of such data collection.

GOVERNING MODELS FOR OCCUPATIONAL REGULATION VARY ACROSS STATES

Governing Model	State Examples
No Central Agency	Arizona, Minnesota, Nevada, New Mexico, Oklahoma
Autonomous boards with a central agency for routine administrative functions	Indiana, Ohio
Autonomous boards with a central agency with authority for functions such as budgetary, personnel, and certain disciplinary activities	New Hampshire, New York
Central agency has complete regulatory authority. Boards are advisory only.	Connecticut, Michigan, Utah
Board actions subject to review by a central agency	Rhode Island
Other- Some autonomous boards and some licensed under a centralized agency	Maine

Statutory Authority: Several states have statutory authority to collect supplemental data at time of license renewal for health professionals. While not a requirement for successful data collection, legislation can help ensure continuity of efforts when staffing changes occur and interests change. Of note, sometimes legislative language may limit the type of information or method of collection in such a way that precludes its use for successful health workforce analysis.

EXAMPLES OF STATES WITH LEGISLATIVE AUTHORITY TO COLLECT HEALTH WORKFORCE DATA BY PROFESSION

States	Arizona	Indiana	Minnesota	New Hampshire	New Mexico
Applicable Profession	• Medicare and Surgery Nursing • Osteopathic Physicians and Surgeons • Psychologists • Board of Physical Therapy • Behavioral Health Professionals	• Medical Licensing Board • State Board of Nursing • State Board of Dentistry • Behavioral Health and Human Services Licensing Board • State Psychology Board • Indiana Board of Pharmacy	• Board of Medical Practice • Board of Nursing • Board of Physical Therapy • Board of Psychologists • Board of Social Work • Board of Marriage and Family Therapy • Board of Dentistry • Board of Pharmacy	• Board of Medicine • Board of Dental Examiners • Board of Pharmacy • Board of Allied Health Professionals • Board of Psychologists • Board of Mental Health Practice • Board of Alcohol and Drug Use Professionals	• Medical Board • Board of Osteopathic Medical Examiners • Board of Dental Health Care • Board of Nursing • Board of Pharmacy • Other Boards as Designated

Data Management

There are two primary strategies that states employ to collect and analyze health workforce data. Every state has a primary care office (PCO) which has the responsibility of coordinating and executing systems-level work related to improving access to primary care. [vii] Sometimes the PCO maintains the function of aggregating and reporting health workforce data to state officials at HRSA for HPSA and MUA/P designations. Some states have developed partnerships with universities to support the collection and/or analysis of health workforce data. Indiana, North Carolina, and New York have strong university partnerships that manage and facilitate data analysis and reporting.

States use a variety of technology platforms for collecting and analyzing data, including home grown and off the shelf products. An important consideration when building or procuring software is the flexibility to make changes in data format, questions asked, and analytic capabilities. The less flexibility in a system, the harder and more expensive it may be for a state to collect the information they need.

STATE EXAMPLES OF LEVERAGING DATA TO ADDRESS HEALTH WORKFORCE CHALLENGES

Understanding State Health Workforce Supply

TOPIC: Using licensure data to explore state participation in interstate compacts/reciprocity agreements	**DATA & METHODOLOGY:** Licensee address data from the Indiana Professional Licensing Agency and similar data from Kentucky Board of Nursing were analyzed to evaluate the impacts of entering into an interstate compact for registered nurses.	**FINDINGS/OUTCOMES:** Increased portability and capacity of providers were benefits of the Nurse Licensure compact. Challenges included loss of revenue, ability to track providers, and reporting of the workforce. This work informed legislation passed in Indiana to join the nurse licensure compact.
TOPIC: Using licensure/supplemental survey data to identify workforce shortages and qualify for federal programs **STATE:** Indiana	**DATA & METHODOLOGY:** Supplemental survey questions at the time of license renewal on practice location, whether the provider accepts Medicaid, languages spoken, etc.	**FINDINGS/OUTCOMES:** The state was able to better identify which geographic areas were experiencing provider shortages. As a result of the data collection, Indiana increased the number of HPSAs, resulting in additional federal resources for training and recruiting new providers.
TOPIC: Identifying and strengthening career pathways using licensure data **STATE:** Indiana	**DATA & METHODOLOGY:** Analyzed individual-level licensure and supplemental survey data for Certified Nurse Aides (CNAs), Licensed Practical Nurses (LPNs), and Registered Nurses (RNs) using social security numbers to assess the career pathways of CNAs.	**FINDINGS/OUTCOMES:** CNA certifications served as a pathway to both LPNs and RNs, and CNA pathways contributed to racial diversity in the nursing field. As a direct outcome from this work, Indiana community college approved a bridge program, which awards five credits toward nursing education for individuals who have CNA certification.
TOPIC: De-duplicating providers with multiple behavioral health licenses to better understand supply **STATE:** Indiana	**DATA & METHODOLOGY:** In the behavioral health field, individuals commonly hold multiple similar licenses (example: clinical social work and clinical counselor). The state used regulatory data to identify individuals with multiple licenses through linking name and date of birth. They used supplemental survey data to assign multiple license holders to their self-reported "primary" license.	**FINDINGS/OUTCOMES:** Of the 12,731 active providers with valid licenses, 791 individuals had two license types, 95 had three license types, and six had four license types. By de-duplicating and identifying the license under which providers actively practiced, the state will no longer double-count certain types of professionals and will be better able to estimate workforce shortages and needs.

Health Workforce Pipeline: Assessment and Alignment

TOPIC: Examining Minnesota's mental health workforce pipeline **STATE:** Minnesota	**DATA & METHODOLOGY:** The state linked higher education data from the State Longitudinal Education Data System with licensure data and wage records to see which degree holders went on to become licensed in mental health and the fields in which they were employed.	**FINDINGS/OUTCOMES:** Licensed mental health providers earn only marginally higher wages to wages of comparably educated, non-licensed mental health workers. In no other comparable health care field can unlicensed workers practice or compete for jobs with licensed providers.
TOPIC: Informing creation of new health workforce training programs **STATE:** North Carolina	**DATA & METHODOLOGY:** North Carolina used regulatory and supplemental data to quantify and describe the chiropractic workforce in North Carolina over time.	**FINDINGS/OUTCOMES:** Although the chiropractic workforce has been steadily increasing over time, supplemental data demonstrated that the workforce is aging. As a direct outcome of this research, the North Carolina General Assembly approved $100,000 in the state budget to explore the feasibility of opening a chiropractic school (which would be the nation's first public chiropractic school).
TOPIC: Tracking primary care physician retention in rural areas **STATE:** North Carolina	**DATA & METHODOLOGY:** North Carolina used regulatory and supplemental data to determine how often the physicians that completed medical school in North Carolina practice in rural areas of the state by specialty.	**FINDINGS/OUTCOMES:** Only one percent of North Carolina's medical school graduates (6 of 431 total graduates) practice as primary care physicians in a rural area in North Carolina five years after graduation. This information may be used to inform the development of in-state retention strategies, such as loan repayment and scholarship programs.
TOPIC: Informing GME planning **STATE:** Florida	**DATA & METHODOLOGY:** Florida uses information collected from physicians during license renewal to create an annual physician workforce report and inform discussions of the state Physician Workforce Advisory Council. In their latest report, the Council's recommendations include informing creation and/or expansion of new GME programs, including the Statewide Medicaid Residency program initiative.	**FINDINGS/OUTCOMES:** States could use this type of information to inform state-level GME planning and resource allocation.
TOPIC: Evaluating a state loan repayment program to ensure maximum return on investment **STATE:** Indiana	**DATA & METHODOLOGY:** Using licensure and survey data from the Indiana Professional Licensing Agency, and datasets provided by the division of Mental Health and Addiction at the Family Services Administration, researchers identified career outcomes of people who participated in the Mental Health and Addiction Loan Repayment Assistance Program (LRAP).	**FINDINGS/OUTCOMES:** The data showed high post-obligation retention rates among LRAP participants and was an overall success in recruiting new behavioral health professionals. The findings informed the design of a subsequent state loan repayment program.

Public Health Emergencies: Health Workforce Preparedness and Evaluation

TOPIC: Leveraging a reserve workforce during a public health emergency **STATE:** Indiana	**DATA & METHODOLOGY:** Indiana developed a strategy to identify and recruit qualified health professionals to serve in response to COVID-19. A Health Care Reserve Workforce recruitment survey was administered to all Indiana State licensed health care professionals using contact information maintained in regulatory data. Respondents indicated their availability and service preferences. This information was used to match respondents to Indiana health facilities reporting COVID-19 related health workforce needs.	**FINDINGS/OUTCOMES:** Robust supplemental information maintained on health professionals expedited ability and confidence in matching personnel with facilities.
TOPIC: Assessing health provider supply during the pandemic **STATE:** North Carolina	**DATA & METHODOLOGY:** Sheps Health Workforce NC analyzed data for active licensed registered nurses in practice and respiratory therapists who have active or pending licenses as well as respiratory assistants in North Carolina to develop provider to patient ratios and provider to ICU bed ratios.	**FINDINGS/OUTCOMES:** Provides the state with information about their provider supply by county for primary practice location, which can inform where there may be maldistribution depending on distribution of COVID-19 cases.
TOPIC: Understanding provider experiences during COVID-19 **STATE:** Minnesota	**DATA & METHODOLOGY:** Minnesota fielded a COVID-19-related provider survey at the time of providers' license renewal for licensed nurses, physicians, respiratory therapists, physician assistants, and mental health providers who renewed their license between May 4 and September 2, 2020.	**FINDINGS/OUTCOMES:** The survey was designed to help better understand the impact of the pandemic and related policies, and the pressing concerns facing providers and their patients. "Findings may be used to assess ongoing response efforts, community engagement strategies, planning efforts, and to forecast changing trends in the delivery of health care post COVID."
TOPIC: Examining COVID-19 deaths among health care personnel **STATE:** No state examples identified	**DATA & METHODOLOGY:** States report COVID-19 case and death data to the CDC. Some states report the health care personnel (HCP) status (whether the individual is a HCP). This allows for tracking and reporting of COVID-19 incidence among HCP.	**FINDINGS/OUTCOMES:** As of August 2020, there were 148,834 positive cases among HCPs and 669 HCP deaths according to the CDC data.

Telehealth Adoption

TOPIC: Identifying and quantifying telehealth providers **STATE:** Indiana	**DATA & METHODOLOGY:** A supplemental survey question asks providers to self-identify as to whether they were services via telehealth to Indiana residents.	**FINDINGS/OUTCOMES:** The state started to reimburse services for providers serving individuals with Medicaid to expand access to telehealth.

Provider Participation in Medicaid

TOPIC: Quantifying Medicaid provider capacity to determine enrolled vs. active medical, dental and mental health providers **STATE:** Indiana	**DATA & METHODOLOGY:** The state used Medicaid enrollment, claims data, and supplemental surveys to distinguish between providers who enrolled in Medicaid and those who actively served the Medicaid population.	**FINDINGS/OUTCOMES:** Of the 5,007 primary care physicians actively practicing in Indiana, 4,484 are enrolled Indiana Medicaid providers. There were 523 primary care physicians not enrolled as Indiana Medicaid providers; however, of those 201 self-reported accepting Medicaid. This information is used to conduct directed outreach to providers who may be interested in enrolling in Medicaid.
TOPIC: Identifying reasons why providers choose not to participate in Medicaid **STATE:** Indiana	**DATA & METHODOLOGY:** License renewal supplemental survey included an open-ended question which asks about barriers to Medicaid participation.	**FINDINGS/OUTCOMES:** For physicians, the biggest barrier to Medicaid participation was lack of capacity for additional patients. Dentists' primary barrier to accepting Medicaid was that reimbursement rates were too low. This information is used in the state's recruitment and retention efforts, as well as to help in identifying shortage areas for Medicaid providers.

CONCLUSION

The health care workforce is essential to manage the health and wellbeing of a given population, especially during a pandemic. Health workforce data are a critical asset to track supply and demand and to inform state policy. Strategies for obtaining these data vary but collecting data in conjunction with regulatory processes is an efficient strategy to maximize availability of standardized information. Authority, infrastructure, and analytic capacity play a central role in a state's ability to effectively leverage data. With the necessary tools in place, states can use data to determine how to invest in recruitment, retention, diversification, program development, and other strategies to address priorities and reduce gaps in access to care.

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