



THE HEALTH CARE WORKFORCE IN EIGHT STATES: EDUCATION, PRACTICE AND POLICY

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PROJECT DESCRIPTION

Historically, both federal and state governments have had a role in developing policy to shape the health care workforce. The need for government involvement in this area persists as the private market typically fails to distribute the health workforce to medically underserved and uninsured areas, provide adequate information and analysis on the nature of the workforce, improve the racial and ethnic cultural diversity and cultural competence of the workforce, promote adequate dental health of children, and assess the quality of education and practice.

It is widely agreed that the greatest opportunities for influencing the various environments affecting the health workforce lie within state governments. States are the key actors in shaping these environments, as they are responsible for:

- financing and governing health professions education;
- licensing and regulating health professions practice and private health insurance;
- purchasing services and paying providers under the Medicaid program; and
- designing a variety of subsidy and regulatory programs providing incentives for health professionals to choose certain specialties and practice locations.

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. This initiative to compile in-depth assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues, influences and policies.

Products of this study include individual health workforce assessments for each of the eight states and a single assessment that compares various data and influences across the eight states. In general, each state assessment provides the following:

- 1) A summary of health workforce data, available resources and a description of the extent the state invests in collecting workforce data. [Part of this information has been provided by the Bureau of Health Professions];
- 2) A description of various issues and influences affecting the health workforce, including the state's legislative and regulatory history and its current programs, financing and policies affecting health professions education, service placement and reimbursement, planning and monitoring, and licensure/regulation;
- 3) An assessment of the state's internal capacity and existing strategies for addressing the above workforce issues and influences; and
- 4) An analysis of the policy implications of the state's current workforce data, issues, capacity and strategies.

The development of the project's data assimilation strategy, content and structure was guided by an expert advisory panel. Members of the advisory panel included both experts in state workforce policy (i.e., workforce planners, researchers and educators) and, more broadly, influential state health policymakers (i.e., state legislative staff, health department officials). The advisory panel has helped to ensure the workforce assessments have an appropriate content and effective format for dissemination and use by both state policymakers and workforce experts/officials.

STUDY METHODOLOGY

Study Purpose and Audience

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. Because states increasingly are being looked to by the federal government and others as proving grounds for successful health care reform initiatives, new and dynamic mechanisms for sharing innovative and effective state workforce strategies between states and with the federal government must be implemented in a more frequent and far reaching manner. This initiative to compile comprehensive capacity assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues and influences.

Each state workforce assessment report is not intended to be voluminous; rather, information is presented in a concise, easy-to-read format that is clearly applicable and easily digestible by busy state policymakers as well as by workforce planners, researchers, educators and regulators.

Selection of States

NCSL, with input from HRSA staff, developed a methodology for identifying and selecting 8 states to assess their health workforce capacity. The methodology included, but was not limited to, using the following criteria:

- a. States with limited as well as substantial involvement in one or more of the following areas: statewide health workforce planning, monitoring, policymaking and research;
- b. States with presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- c. States with little involvement in assessing health workforce capacity despite the presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- d. Distribution of states across Department of Health and Human Services regions;
- e. States with Bureau of Health Professions (BHP) - supported centers for health workforce research and distribution studies;
- f. States with primarily urban and primarily rural health workforce requirements; and
- g. States in attendance at BHP workforce planning workshops or states that generally have interest in workforce modeling.

Collection of Data

NCSL used various means of collecting information for this study. Methods exercised included:

- a. Phone and mail interviews with state higher education, professions regulation, and recruitment/retention program officials;
- b. Custom data tabulations by national professional trade associations and others (i.e., Quality Resource Systems, Inc.; Johns Hopkins University School of Public Health) with access to national data bases;
- c. Tabulations of data from the most recent edition of federal and state government databases (e.g., National Health Service Corps field strength);
- d. Site visit interviews with various officials in the ten profile states;
- e. Personal phone conversations with other various state and federal government officials;
- f. Most recently available secondary data sources from printed and online reports, journal articles, etc.; and
- g. Comments and guidance from members of the study's expert advisory panel.

STATE SUMMARY

With the exception of two major metropolitan areas, Missouri remains largely a very rural state with a lower than average minority/ethnic population. Missouri is a good example of a state where having health insurance does not guarantee access to health services. The good news is that the proportion of the state's population without health insurance is substantially below the national average. The bad news is that the percentage of the population residing in health professional shortage areas (HPSAs) is well above U.S. figures. In fact, just four counties in Missouri are not designated as HPSAs.

The proportion of the state's population living in dental HPSAs is twice the national average, and statewide, Missouri has a significantly smaller ratio of dentists and dental hygienists than the U.S. as a whole. Furthermore, just over a fourth of all practicing dentists in the state participate in the Medicaid program. In part, low participation rates can be attributed to Medicaid payment rates that are less than 50 percent of usual and customary charges. Medicaid in Missouri is covered by mandatory managed care enrollment only in urban areas, in part because there are not enough health professionals in largely-HPSA rural areas to staff the managed care plans. Only urban Medicaid providers are required to deliver oral health services. Such services for rural providers remain reimbursable on a fee-for-service basis. Recently, Missouri's governor, in an effort to curb rising Medicaid costs, proposed cutting adult dental care as a covered service.

Recently, the state has taken some steps to address health workforce shortages in dentistry and rural underserved areas. A 2001 law 1) adds dentists to the state's health professional loan program, which will support access to dental services in underserved communities, 2) allows dental hygienists practicing in public health settings to provide certain services to Medicaid-eligible children without the supervision of a dentist (regulations not yet published as of early 2002), and 3) requires the creation of a donated dental services program, through which volunteer licensed dentists will provide comprehensive dental care to needy, disabled, elderly and medically-compromised individuals. The measure also granted a significant Medicaid fee increase to dental providers.

In 2002, a rapidly declining fiscal climate in the state has made further significant efforts to address workforce shortages unlikely. Missouri faces a \$612 million budget deficit in fiscal year 2003 in addition to a \$340 million shortfall in the previous budget period. Major across-the-board cuts in state agency spending are expected.

Otherwise, Missouri has several health professions loan repayment and primary care grant programs that in general have a good track record of retaining a significant proportion of service-obligated primary care physicians and nurses in medically underserved communities in the state. However, the state has placed little attention to the need to better understand the health workforce supply issue and to collect additional information. Thus, there appears to be gaps in awareness and understanding of the problems.

Despite the fact that Missouri's ratio of physicians is lower than the national average, major attention to address this problem appears nonexistent. Less than half of newly entering medical students to the state's 4 allopathic medical schools (the state has two additional osteopathic schools) are state residents. Just 40 percent of all physicians completing their graduate medical education in Missouri now practice in the state.

Existing data suggests that Missouri faces less of a shortage of nurses than many states. However, expected demand for nurses is a major component of the state's workforce. Registered nurses as an occupation have the third highest number of projected openings in the coming years, according to state estimates. However, graduations of baccalaureate-trained nurses have been flat or in decline in recent years, and data suggest that there are only a small percent of nurses licensed but not working as nurses in the state. The market for nurse practitioners appears to be saturated with reports that recent graduates are still looking for work.

I. WORKFORCE SUPPLY AND DEMAND

Arguably, it is most important initially to understand the marketplace for a state's health care workforce. How many health professionals are in practice statewide and in medically underserved communities? What are the demographics of the population served? How is health care organized and paid for in the state? This section attempts to answer some of these questions by presenting state-level data collected from various sources.

Table I-a.

POPULATION		MO	U.S.
Total Population (2000)		5,595,211	281,421,906
Sex (2000)	% Female	51.4	50.9
	% Male	48.6	49.1
Age (2000)	% less than 18	25.5	25.7
	% 18-64	61	61.9
	% 65 or over	13.5	12.4
% Minority/Ethnic (1997-1999)		14.7	29.1
% Metropolitan (2000)*		67.8	79.9

* As defined by the U.S. Office of Management and Budget

Sources: U.S. Census Bureau, AARP.

Only 15% of Missouri's population are minorities—about half the national average.

Table I-b.

PROFESSION UTILIZATION	MO	U.S.
% Adults who Reported Having Routine Physical Exam Within Past Two Years (1997)	83.2	83.2 (Median)
Average # of Retail Prescription Drugs per Resident (1999)	10.8	9.8
% Adults who Made Dental Visit in Preceding Year by Annual Family Income (1999):		
Less than \$15,000	42	
\$15,000 - \$34,999	56	
\$ 35,000 or more	70	

Sources: CDC, AARP, GAO.

Fewer than half of Missouri adults with annual family incomes less than \$15,000 made a dental visit in 1999.

Table I-c.

ACCESS TO CARE		MO	U.S.
% Non-elderly (under age 65) Without Health Insurance	1999-2000	10	16.0
	1997-1999	12	18.0
% Children Without Health Insurance	1999-2000	6	12.0
	1997-1999	9	14.0
% Not Obtaining Health Care Due to Cost (2000)		9.5	9.9
% Living in Primary Care HPSA (2001)		33.5	19.9
# Practitioners Needed to Remove Primary Care HPSA Designation (2001)		368	--
% Living in Dental HPSA (2001)*		26.3	13.7
# Practitioners Needed to Remove Dental HPSA Designation (2001)		304	--

HPSA = Health Professional Shortage Area

* It is commonly believed that there are additional areas in the state that may be eligible to receive HPSA designation.

Sources: KFF, AARP, BPHC-DSD.

Missouri's proportion of children and non-elderly who are uninsured is less than the U.S. average. In contrast, the state has a higher proportion of persons living in dental and primary care HPSAs than the U.S. as a whole.

Table I-d.

PROFESSIONS SUPPLY				
Profession	# Active Practitioners	# Active Practitioners per 100,000 Population		
		MO	U.S.	
Physicians (1998)	10,343	190.2	198	
Physician Assistants (1999)	216	4.0	10.4	
Nurses	RNs (2000)	53,730	960	782
	LPNs (1998)	14,980	275.5	249.3
	CNMs (2000)	56	1.0	2.1
	NPs (1998)	1,602	29.5	26.3
	CRNAs (1997)	655	12.1	8.6
Pharmacists (1998)	4,040	74.3	65.9	
Dentists (1998)	2,274	41.8	48.4	
Dental Hygienists (1998)	2,000	36.8	52.1	
% Physicians Practicing Primary Care		25.0 (30.0 U.S.)		
% Registered Nurses Employed in Nursing		86.1 (81.7 U.S.)		
% of MDs Who Are International Medical Graduates (IMGs)		20.0 (24.0 U.S.)		

RN= Registered Nurse, LPN= Licensed Practical Nurse, CNM= Certified Nurse Midwife, NP= Nurse Practitioner
 CRNA= Certified Registered Nurse Anesthetist

Source: HRSA-BHPr.

Missouri has more pharmacists and nurses per 100,000 population than the U.S. as a whole.

Table I-e.

NATIONAL HEALTH SERVICE CORPS (NHSC) FIELD STRENGTH			
Total Field Strength (FY 2001) * Includes mental/behavioral health officials	% in Urban Areas	% in Rural Areas	# Per 10,000 Population Living in HPSAs
73	44	56	0.39 (0.49 U.S.)
<i>Field Strength by Profession</i>			
Physicians	42		
Nurses	14		
Physician Assistants	2		
Dentists/Hygienists	7		

HPSA= Health Professional Shortage Area

Source: BHPr-NHSC.

Missouri has less NHSC professionals per 10,000 population living in HPSAs than the U.S. as a whole.

Table I-f.

MANAGED CARE				
Penetration Rate of Commercial and Medicaid HMOs (as % of total population), 2000			MO	U.S.
			32.9	28.1
Profession	MCOs required by state to include profession on their provider panel*	Profession allowed by state to serve as primary care provider in MCOs	Profession allowed by state to coordinate primary care as part of a standing referral	Profession allowed by state to engage in collective bargaining with MCOs
Physicians	No	No	No	No
Nurses	No	No	No	No
Pharmacies	No	No	No	No
Dentists	No	No	No	No
State requires certain individuals enrolled in MCOs to have direct access to certain specialty (OB/GYN, etc.) providers.				Yes
State requires certain individuals enrolled in MCOs to receive a standing referral to a specialist (OB/GYN, etc.).				Yes

MCOs = Managed Care Organizations HMOs = Health Maintenance Organizations OB/GYN = Obstetrician/Gynecologist
 * This requirement does not preclude MCOs from including additional professions on their provider panels.

Sources: HPTS, AARP.

One-third of Missouri residents receive their health care from an HMO.

Table I-g.

REIMBURSEMENT OF SERVICES					
	Profession	% Active Practitioners Enrolled	% Enrolled Receiving Annual Payments Greater Than \$10,000 ¹	Increase of 10% or More in Overall Payment Rates 1995-2000	Bonus or Special Payment Rate for Practice in Rural or Medically Underserved Area
Medicaid	Physicians	*	N/A	Yes	No
	NPs	*	N/A	Yes	No
	Dentists	27.4	N/A	Yes	No
	# of Enrolled Pharmacies				1,331
	% Change in Physician Fees (All Services), 1993-1998				1.00
	Recent State-Mandated Payment Increases				Yes (for dentists)
	Medicare	# Active Practitioners Enrolled (2000)			
% Practitioners who Accept Fee as Full Payment (2001)				90.0	

¹ Generally seen as an indicator of significant participation in the Medicaid program.

² Denominator number from HRSA State Health Workforce Profile, December 2000.

* Numerator data for physicians and nurse practitioners from state Medicaid agencies were unusable: many professionals were apparently double-counted, perhaps due to varying participation in different health plans.

N/A = Data was not available

Sources: State Medicaid programs, Norton and Zuckerman "Trends", HPTS, AARP.

Physicians, nurse practitioners and dentists all received payment rate increases of more than 10% from 1995-2000.

II. HEALTH PROFESSIONS EDUCATION

State efforts to help ensure an adequate supply of health professionals can be understood in part by examining data on the state's health professions education programs—counts of recent students and graduates, amounts of state resources invested in education, and other factors. State officials can gauge how well these providers reflect the state's population by also examining how many students and graduates are state residents or minorities. Knowing to what extent states are also investing in primary care education and how many medical school graduates remain in-state to complete residencies in family medicine is also important.

Table II-a.

UNDERGRADUATE MEDICAL EDUCATION			
# of Medical Schools (<i>Allopathic and Osteopathic</i>)	6	Public Schools	2
		Private Schools	4
		Osteopathic Schools	2
# of Medical Students (<i>Allopathic and Osteopathic</i>)	1997-1998	3,201	
	1999-2000	3,291	
# Medical Students per 100,000 Population ¹	1999-2000	58.8	
% Newly Entering Students (<i>Allopathic</i>) who are State Residents, 1999-2000		47.8	
Requirement for Students in Some/All Medical Schools to Complete a <i>Primary Care Clerkship</i>	By the State	No	
	By Majority of Schools	No	
# of Medical School Graduates (<i>Allopathic and Osteopathic</i>)	1998	772	
	2000	764	
# Medical School Graduates per 100,000 Population ¹	2000	13.7	
% Graduates (<i>Allopathic</i>) who are Underrepresented Minorities, 1994-1998		4.13 (10.5 U.S.)	
% 1987-1993 Medical School Graduates (<i>Allopathic</i>) Entering Generalist Specialties		25.6 (26.7 U.S.)	
State Appropriations to Medical Schools (<i>Allopathic and Osteopathic</i>), 1999-2000	Total	\$ 19.5 million	
	Per Student	\$ 5,935	

¹ Denominator number is state population from 2000 U.S. Census.

Sources: AAMC, AAMC Institutional Goals Ranking Report, AACOM, Barzansky et al. "Educational Programs", State higher education coordinating boards.

Only 4% of medical school graduates in Missouri between 1994 and 1998 were underrepresented minorities.

Table II-b.

GRADUATE MEDICAL EDUCATION (GME)		
# of Residency Programs (<i>Allopathic and Osteopathic</i>), 1999-2000 ¹		217
# of Physician Residents (<i>Allopathic and Osteopathic</i>), 1999-2000 ¹		2,420
# Residents Per 100,000 Population, 1999-2000		43
% Allopathic Residents from In-State Medical School, 1999-2000		26.6
% Residents who are International ² Medical Graduates, 1999-2000		25.3 (26.4 U.S.)
Requirement to Offer Some or All Residents a <i>Rural Rotation</i>	By the State	No
	By Most Primary Care Residencies	No
State Appropriations for Graduate Medical Education, 1996-1997 ^{4,5}	Total	Data not available
	Per Resident	Data not available
<i>Medicaid</i> Payments for Graduate Medical Education, 1998 ³		\$ 26.7 million
	Payments as % of Total Medicaid Hospital Expenditures	7.3 (7.4 U.S.)
	Payments Made Directly to Teaching Programs Under Capitated Managed Care	Yes
	Payments Linked to State Workforce Goals/ Goals of Improved Accountability	No
<i>Medicare</i> Payments for Graduate Medical Education, 1998 ³		\$ 75.32 million

¹ Includes estimated number of osteopathic residencies/residents not accredited by the Accreditation Council for Graduate Medical Education.

² Does not include residents from Canada.

³ Explicit payments for both direct and indirect GME cost.

⁴ Funds largely are for graduate education.

⁵ Dollar amounts refer largely to funding for family medicine training programs. However, these funds that flow directly to teaching hospitals are not necessarily earmarked by the state for graduate medical education.

Sources: AMA, AMA [State-level Data](#), AACOM, State higher education coordinating boards, Henderson "Funding", Oliver et al. "State Variations."

One-quarter of allopathic residents in Missouri are from in-state medical schools.

Table II-c.

FAMILY MEDICINE RESIDENCY TRAINING			
# of Residency Programs, 2001	7	# Residencies Located in Inner City	5
		# Residencies Offering Rural Fellowships or Training Tracks	0
# of Family Medicine Residents, 1999-2000			64
# Family Medicine Residents per 100,000 Population, 1999-2000 ¹			1.1
% Graduates (<i>from state's Allopathic and Osteopathic medical schools</i>) who were First Year Residents in Family Medicine, 1995-2000			14.1 (14.8 U.S.)
% Graduates (<i>from state's Allopathic medical schools</i>) Choosing a Family Medicine Residency Program Who Entered an In-State Family Medicine Residency, 1995-2000			39.5 (48.1 U.S.)
State Appropriations for Family Medicine Training, ² 1995-1996		Total	\$ 1.2 million
		Per Residency Slot	\$ 7,500

¹ Denominator number is state population from 2000 U.S. Census.

² Dollar amounts refer largely to funding family medicine training programs. However, these funds that flow directly to teaching hospitals are not necessarily earmarked by the state for graduate medical education.

Sources: AAFP, AAFP [State Legislation](#), Kahn et al., Pugno et al. and Schmittling et al. "Entry of U.S. Medical School Graduates".

Less than 40% of graduates choosing a family medicine program entered an in-state family medicine residency.

Table II-d.

NURSING EDUCATION				
# of Nursing Schools	50	Public Schools		26
		Private Schools		24
# of Nursing Students ¹ 1998-2000	6,629	# Associate Degree, 1998-1999		1739
		# Baccalaureate Degree	1998-1999	3797
			1999-2000	3116
		# Masters Degree	1998-1999	996
			1999-2000	1092
		# Doctoral Degree	1998-1999	97
			1999-2000	110
# Per 100,000 population ²			118.5	
# of Nursing School Graduates ¹ 1999-2000	2,422	# Associate Degree, 1999		854
		# Baccalaureate Degree	1999	1271
			2000	1074
		# Masters Degree	1999	285
			2000	275
		# Doctoral Degree	1999	12
			2000	11
# Per 100,000 population ²			43.3	
State Appropriations to Nursing Schools (<i>Baccalaureate, Masters and Doctoral</i>), 1998-1999		Per Student: \$4,886 (3 schools reporting)		

¹ Annual figure for Associate, Baccalaureate, Masters and Doctoral students/graduates for most recent years available.

² Denominator number is the state population from the 2000 U.S. Census.

Sources: NLN, AACN, State higher education coordinating boards.

The number of nursing school graduates in Missouri declined from 1999 to 2000.

Table II-e.

PHARMACY EDUCATION			
# of Pharmacy Schools	2	Public Schools	1
		Private Schools	1
# of Pharmacy Students, 2000-2001	1,167	# Baccalaureate Degree	665
		# Doctoral Degree (<i>PharmD</i>)	502
	# Per 100,000 population*	20.9	
# of Pharmacy Graduates, 2000	193	# Baccalaureate Degree	134
		# Doctoral Degree (<i>PharmD</i>)	59
	# Per 100,000 population*	3.45	

* Denominator number is state population from 2000 U.S. Census.

Source: AACP.

Table II-f.

PHYSICIAN ASSISTANT EDUCATION		
# of Physician Assistant Training Programs, 2000-2001		2
# of Physician Assistant Program Students, 2000-2001		80
# Physician Assistant Program Students per 100,000 Population ¹		1.4
# of Physician Assistant Program Graduates, 2001		29 (1 program)
# Physician Assistant Program Graduates per 100,000 Population ¹		0.52
State Appropriations for Physician Assistant Training Programs, 2000-2001 ²	Total	0
	Per Student	0
	As % of Total Program Revenue	0

¹ Denominator number is state population from 2000 U.S. Census.

² In general, state appropriations are not directly earmarked for these programs, but rather to their sponsoring institutions.

Sources: APAP, APAP Annual Report.

Table II-g.

DENTAL EDUCATION			
# of Dental Schools	1	Public Schools	1
		Private Schools	0
# of Dental Students, 2000-2001	320		
# Dental Students per 100,000 Population*	5.7		
# of Dental Graduates, 2000	69		
# Dental Graduates per 100,000 Population*	1.2		
State Appropriations to Dental Schools, 1998-1999	Per Student: \$ 31,726		
	As % of Total Revenue: 40.7 (31.6 U.S.)		

* Denominator number is state population from 2000 U.S. Census.

Source: ADA.

Table II-h.

DENTAL HYGIENE EDUCATION			
# of Dental Hygiene Training Programs	4	Public Schools	4
		Private Schools	0
# of Dental Hygiene Program Students, 1997-1998	141		
# Dental Hygiene Program Students per 100,000 Population*	2.5		
# of Dental Hygiene Program Graduates, 1998	66		
# Dental Hygiene Program Graduates per 100,000 Population*	1.2		

* Denominator number is state population from 2000 U.S. Census.

Sources: ADHA, AMA [Health Professions](#).

III. PHYSICIAN PRACTICE LOCATION

The following tables examine in-state physician practice location from two different vantage points: (1) of all physicians who were trained (went to medical school or received their most recent GME training) in the state between 1975 and 1995, and (2) of all physicians who are now practicing in the state, regardless of where they were trained. Compiled from the American Medical Association's 1999 Physician Masterfile by Quality Resource Systems, Inc., the data importantly illustrates to what extent physician graduates practice in many of the state's small towns, using the rural-urban continuum developed by the U.S. Department of Agriculture.

PRACTICE LOCATION (URBAN/ RURAL) OF PHYSICIANS WHO RECEIVED THEIR ALLOPATHIC MEDICAL SCHOOL TRAINING IN MISSOURI BETWEEN 1975 AND 1995.

Table III-a.

MISSOURI		
Number of physicians who were trained in MO and who are now practicing in MO as a percentage of all physicians practicing in MO.		33.89
Number of physicians who were trained in MO and are practicing in MO, by practice location (metro code ¹), as a percentage of all physicians practicing in MO.	#00	33.99
	#01	43.70
	#02	31.61
	#03	32.01
	#04	46.46
	#05	30.20
	#06	32.88
	#07	37.06
	#08	25.00
#09	26.83	
Number of physicians who were trained in MO and who are now practicing in MO as a percentage of all physicians who were trained in MO.		28.92
Number of physicians who were trained in MO and are practicing in MO, by practice location (metro code ¹), as a percentage of all physicians trained in MO.	#00	33.45
	#01	31.55
	#02	9.42
	#03	30.99
	#04	25.27
	#05	22.51
	#06	36.00
	#07	45.67
	#08	33.33
#09	40.74	

¹ 1995 Rural/Urban Continuum Codes for Metro and Nonmetro Counties. Margaret A. Butler and Calvin L. Beale. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture.

Codes # 00-03 indicate metropolitan counties:

00: Central counties of metro areas of 1 million or more

01: Fringe counties of metro areas of 1 million or more

02: Counties with metro areas of 250,000 - 1 million

03: Counties in metro areas of less than 250,000

NA: Not Applicable; no counties in the state are in the R/U Continuum Code

Codes # 04-09 indicate non-metropolitan counties:

04: Urban population of 20,000 or more, adjacent to metro area

05: Urban population of 20,000 or more, not adjacent to metro area

06: Urban population of 2,500-19,999, adjacent to metro area

07: Urban population of 2,500-19,999, not adjacent to metro area

08: Completely rural (no place w population > 2,500), adjacent to metro area

09: Completely rural (no place w population > 2,500), not adjacent to metro area

PRACTICE LOCATION (URBAN/ RURAL) OF PHYSICIANS WHO RECEIVED THEIR MOST RECENT GME TRAINING IN MISSOURI BETWEEN 1978 AND 1998.

Table III-b.

MISSOURI		
Number of physicians who received their most recent GME training in MO and who are now practicing in MO as a percentage of all physicians practicing in MO.		48.39
Number of physicians who received their most recent GME training in MO and are practicing in MO, by practice location (metro code ¹), as a percentage of all physicians practicing in MO.	#00	53.66
	#01	51.70
	#02	24.38
	#03	45.08
	#04	49.00
	#05	20.48
	#06	42.11
	#07	28.75
	#08	25.00
#09	44.74	
Number of physicians who received their most recent GME training in MO and who are now practicing in MO as a percentage of all physicians who were trained in MO.		40.96
Number of physicians who received their most recent GME training in MO and are practicing in MO, by practice location (metro code ¹), as a percentage of all physicians trained in MO.	#00	52.07
	#01	44.44
	#02	7.84
	#03	39.31
	#04	25.39
	#05	17.13
	#06	42.86
	#07	35.34
	#08	18.75
#09	56.67	

¹ 1995 Rural/Urban Continuum Codes for Metro and Nonmetro Counties. Margaret A. Butler and Calvin L. Beale. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture.

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08: Completely rural (no place w population > 2,500), adjacent to metro area

09: Completely rural (no place w population > 2,500), not adjacent to metro area

NA: Not Applicable; no counties in the state are in the R/U Continuum Code.

IV. LICENSURE AND REGULATION OF PRACTICE

States are responsible for regulating the practice of health professions by licensing each provider, determining the scope of practice of each provider type and developing practice guidelines for each profession. The tables below illustrate the licensure requirements for each of the health professions covered in this study as well as additional information on recent expansions in scope of practice or other novel regulatory measures taken by the state.

Table IV-a.

PHYSICIANS	
LICENSURE REQUIREMENTS	Graduation from an approved medical school; Passed an examination prepared and graded by the Federation of State Medical Boards, the National Board of Medical Examiners, or the United States Medical licensing Examination program.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full license unless consulting with a licensed physician in the state.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	No.

Sources: State licensing board, HPTS.

Table IV-b.

PHYSICIAN ASSISTANTS	
LICENSURE REQUIREMENTS	Graduation from accredited PA program and current National Commission on Certification of Physician Assistants (NCCPA) certification.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p><i>PRESCRIPTIVE AUTHORITY</i> Yes. Dispensing limited to 72 hours non-controlled substances with supervising physician.</p> <p><i>PHYSICIAN SUPERVISION</i> PA must practice in same facility as supervising physician (certain facilities and clinics exempted). Physician must be immediately available for consultation, assistance and intervention.</p>

Source: State licensing board.

Table IV-c.

NURSES	
LICENSURE REQUIREMENTS	<p>Registered Nurses (RNs) The applicant must have completed a state-approved program for the preparation of professional nurses. Have passed a written examination to practice professional nursing.</p> <p>Advanced Practice Nurses (APNs) A nurse must be licensed as a registered professional nurse in the State of Missouri and must be granted a 'Document of Recognition' from the Missouri State Board of Nursing.</p> <p>Licensed Practical Nurses (LPNs) The applicant must have completed a state-approved program for the preparation of practical nurses. Have passed a written examination to practice practical nursing.</p>
LICENSURE REQUIREMENTS: <i>FOREIGN-TRAINED NURSES</i>	Evidence of completion and graduation from an accredited program of nursing; A course-by-course evaluation report received directly from a foreign credentials evaluation service approved by the board; Test of English as a Foreign Language (TOEFL) certificate; Attainment of a passing score on licensing examination; Commission on Graduates of Foreign Nursing Schools (CGFNS) Certificate.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full License.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p>PRESCRIPTIVE AUTHORITY APN, CNM, CNP, CNS, CRNA can prescribe non-controlled substances through collaborative agreement with a physician.</p> <p>PHYSICIAN SUPERVISION APNs can independently perform nursing acts within their scope of practice.</p>
RECENT STATE REQUIREMENTS TO IMPROVE WORKING CONDITIONS IN CERTAIN INSTITUTIONS	None
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	Yes , available on web.

Sources: State licensing board, AANA, ACNM, Pearson "Annual Legislative Update", HPTS.

Table IV-d.

DENTISTS	
LICENSURE REQUIREMENTS	Graduation from accredited dental college; Passing scores on national and state certification exams.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full License.

Source: State licensing board.

Table IV-e.

PHARMACISTS	
LICENSURE REQUIREMENTS	Graduation from an accredited high school or its equivalent, one year practical experience under the supervision of a licensed pharmacist within a licensed pharmacy, or other location approved by the board, and graduation from a school or college of pharmacy whose requirements for graduation are satisfactory to and approved by the board of pharmacy.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	Pharmacists can provide immunizations.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	No.

Source: State licensing board.

Table IV-f.

DENTAL HYGIENISTS	
LICENSURE REQUIREMENTS	Graduation from accredited dental hygiene school; Passing scores on national and state certification exams.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<i>PRESCRIPTIVE AUTHORITY</i> No. <i>DENTIST SUPERVISION</i> Dental Hygienists are allowed to practice without supervision in public health settings. Hygienists who have been in practice at least three years may provide fluoride treatments, teeth cleanings, and sealants to children who are eligible for medical assistance.

Source: State licensing board, ADHA.

Glossary of Acronyms

CNM: Certified nurse midwife.

CRNA: Certified registered nurse anesthetist.

NP: Nurse practitioner.

V. IMPROVING THE PRACTICE ENVIRONMENT

States have the challenge of not only helping to create an adequate supply of health professionals in the state, but also ensuring that those health professionals are distributed evenly throughout the state. Various programs and incentives are used by states to encourage providers to practice in rural and other underserved areas. The tables in this section describe Missouri's programs as well as the perceived effectiveness of these programs.

RECRUITMENT/ RETENTION INITIATIVES

Table V-a.

INITIATIVE	In Use	Perceived or Known Impact (1= high, 5= low)	Health Professions Affected					
			Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
FOCUSED ADMISSIONS / RECRUITMENT OF STUDENTS FROM RURAL OR UNDERSERVED AREAS	Yes	4	X	X		X		
SUPPORT FOR HEALTH PROFESSIONS EDUCATION (stipends, preceptorships) IN UNDERSERVED AREAS	Yes	2	X	X				
RECRUITMENT / PLACEMENT PROGRAMS FOR HEALTH PROFESSIONALS	No							
PRACTICE DEVELOPMENT SUBSIDIES (i.e., start-up grants)	Yes	4	X	X		X		
MALPRACTICE PREMIUM SUBSIDIES	No							
TAX CREDITS FOR RURAL / UNDERSERVED AREA PRACTICE	No							
PROVIDING SUBSTITUTE PHYSICIANS (<i>locum tenens</i> support)	No							
MALPRACTICE IMMUNITY FOR PROVIDING VOLUNTARY OR FREE CARE	Yes	1	X	X				
PAYMENT BONUSES / OTHER INCENTIVES BY MEDICAID OR OTHER INSURANCE CARRIERS	No							
MEDICAID REIMBURSEMENT OF TELEMEDICINE	No							

Source: State health officials.

The state of Missouri provides no funding to place pharmacists, dental hygienists, or physician assistants in rural or underserved areas.

LOAN REPAYMENT/ SCHOLARSHIP PROGRAMS *

Table V-b.

Program Type	Number of Programs	Number of Annual Participants	Average Retention Rate	Eligible Health Professions					
				Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
LOAN REPAYMENT	1	28	54%		X				
SCHOLARSHIP	2	112	64%	X	X		X		

* Includes only state-funded programs which require a service obligation in an underserved area. (NHSC state loan repayment programs are included since the state provides funding.)

Source: State health officials.

WORKFORCE PLANNING ACTIVITIES*

Table V-c.

ACTIVITY	In Use	Health Professions Affected					
		Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
COLLECTION / ANALYSIS OF PROFESSIONS SUPPLY DATA: FROM <i>PRIMARY</i> SOURCES (e.g., licensure renewal process; other survey research) FROM <i>SECONDARY</i> SOURCES (e.g., state-based professional trade associations)	Yes	X	X		X	X	
	No						
PRODUCTION OF RECENT STUDIES OR REPORTS THAT DOCUMENT / EVALUATE THE SUPPLY, DISTRIBUTION, EDUCATION OR REGULATION OF HEALTH PROFESSIONS	No						
RECENT REGULATORY ACTIONS INTENDED TO REQUIRE OR ENCOURAGE COORDINATION OF POLICIES AND DATA COLLECTION AMONG HEALTH PROFESSIONS GROUPS OR LICENSING BOARDS	No						

* One state health official supplied these responses. Therefore, data may be limited and may not accurately reflect all current workforce-planning activities in the state.

Missouri collects and analyzes statewide supply data for physicians, nurses, dentists, and dental hygienists.

VI. EXEMPLARY WORKFORCE LEGISLATION, PROGRAMS AND STUDIES

The following abstracts describe several of Missouri's recent endeavors to understand and describe the status of the state's current health care workforce.

Legislation and Programs

S-393 (2001)

This act expands provisions regarding dental services:

- Allows physicians to administer fluoride treatments to a child's teeth during such immunizations.
- Adds dental students to the Medical School Loan Repayment Program and changes the name to Health Professional Student Loan Repayment Program.
- Removes the reference to summer camps, allowing gratuitous services to be provided anywhere for no more than fourteen days.
- A five member Advisory Commission for Dental Hygienists is established to make recommendations to the Missouri Dental Board.
- Creates an exception to supervision requirements by allowing a dental hygienist practicing in a public health setting to provide fluoride treatments, teeth cleaning, and sealants to children who are eligible for Medicaid. These procedures may be done without the supervision of a dentist. Medicaid shall reimburse all dentists, dental hygienists and pediatricians who provide the above services at 75% of the usual and customary cost, which will be determined by the Division of Medical Services.

Health Professions Scholarships

Missouri Hospital Association, 2001

The Educational and Research Trust of the Missouri Hospital Association (MHA) established a \$1million scholarship program for students in nursing and allied health in 2001. Work repayment on a yearly basis is required in a MHA-member hospital.

Studies

Missouri Coalition for Oral Health Access

Felix, Burdine and Associates, December 2000

The report provides a summary of background research and efforts to define the oral health problem and improve access to services for the underserved across the state. In addition, it offers a work plan for the Missouri Coalition for Oral Health Access. The plan outlines the coalition's strategy for educating dental professionals about integrating Medicaid patients into their practices, expanding the ability of community health centers to provide preventive services, and implementing recruitment efforts to bring more dentists to the state.

Workforce Status in Missouri Hospitals: an Overview

Missouri Hospital Association, August 2001

The report outlines the demographics of the nursing population, the demand for hospital practical and professional nurses, and the educational opportunities for nursing in the state. The report suggests that workforce shortages may lead to the closure of some departments, floors, and services, and will affect the care that hospitals are able to provide. It calls for hospitals, legislators, regulators and communities to address the problem.

Health Systems Development Unit Activities Report 2001

Center for Health Improvement, Missouri Department of Health and Senior Services

This report examines the availability and accessibility of health care services across the state and evaluates several initiatives designed to improve health outcomes across the state. According to the report, overall access to primary health care services in Missouri has improved in the past ten years. While there have been increases in the number of health professionals practicing in the state, there have also been increases in the number of Health Professional Shortage Areas (HPSAs). The coalition also notes that the number of dentists in the state has not increased and that roughly half of them are currently 50 years old or older, and that HPSAs for dentists have increased dramatically as well.

The state has several initiatives underway to address issues relating to access. They include the State Loan Repayment Program, the Primary Care Resources Initiative for Missouri (PRIMO), placement programs for foreign medical graduates, and the Healthy Communities Incentive Program. The report provides information about participation and placement rates for each of the programs.

HRSA State Health Workforce Profile

Bureau of Health Professions, December 2000

The State Health Workforce Profiles provide current data on the supply, demand, distribution, education and use of health care professionals in each state. Each state profile has an overview of the health status of state residents and health services within the state. In addition the profiles have breakdowns of health care employment by place of work and profession.

<http://bhpr.hrsa.gov/healthworkforce/profiles/default.htm>

VII. POLICY ANALYSIS

Organizations with Significant Involvement in Health Workforce Analysis/Development

- **Missouri Department of Health and Senior Services: Center for Health Improvement**
- **Missouri Dental Association**
- **University of Missouri-Columbia: Area Health Education Centers
School of Nursing**
- **Missouri Hospital Association**

Evidence of Collaboration: Minimal (largely associated with workforce data collection and analysis and provider recruitment to rural underserved areas)

With the exception of two major metropolitan areas, Missouri is largely a very rural state with a lower than average minority/ethnic population.

Missouri is an example of a state where having health insurance does not guarantee access to health services. The good news is that the proportion of the state's population without health insurance is substantially below the national average. The bad news is that the percentage of the population residing in health professional shortage areas (HPSAs) is well above U.S. figures. In fact, just four counties in Missouri are not designated as HPSAs.

The proportion of the state's population living in dental HPSAs is twice the national average, and statewide, Missouri has a significantly smaller ratio of dentists and dental hygienists than the U.S. as a whole. Furthermore, just over a fourth of all practicing dentists in the state participate in the Medicaid program. Low participation rates can be attributed to Medicaid payment rates that are less than 50 percent of usual and customary charges. Medicaid in Missouri has mandatory managed care enrollment only in urban areas, in part because there are not enough health professionals in largely-HPSA rural areas to staff the managed care plans. Only urban Medicaid providers are required to deliver oral health services. Such services for rural providers remain reimbursable on a fee-for-service basis. Recently, Missouri's governor, in an effort to curb rising Medicaid costs, proposed cutting adult dental care as a covered service.

Although state officials boast of having an effective relationship with the National Health Service Corps (NHSC) in terms of receiving field large numbers of placements, the ratio of NHSC professionals (primarily physicians) per 10,000 HPSA population in Missouri is below the national average. Missouri has also a smaller ratio of physicians statewide than the U.S. as a whole. However, reports show that the state has a larger ratio of nurses and pharmacists than national figures.

Missouri has several health professions loan repayment and primary care grant programs that in general have a good track record of retaining a significant proportion of service-obligated primary care physicians and nurses in medically underserved communities in the state. However, the state has placed little attention to the need to better understand the health workforce supply issue and to collect additional information. Thus, there appear to be gaps in awareness and understanding of the health workforce. However, various efforts are underway to address these gaps, including the following:

- The Center for Health Improvement in the Department of Health and Senior Services routinely surveys physicians, dentists and nurses to gain more insight as their location of practice and demographics.
- The Board of Nursing Examiners regularly receives updates on the number of licensed nurses through the relicensure process.

- The state hospital association has examined nursing workforce supply and demand, and, in concert with the state's Colleagues-in-Caring nursing projects, has initiated a health workforce data collection and analysis collaborative at both a state and regional level with member hospitals and other groups.
- The Department of Economic Development routinely issues occupational projections for Missouri.
- Missouri Coalition for Oral Health Access produced a 2000 report summarizing available research and efforts to define the state's oral health problem.

Recently, the Legislature has taken some steps to address health workforce shortages in dentistry and rural underserved areas. A 2001 law 1) adds dentists to the state's health professional loan program, which will support access to dental services in underserved communities, 2) allows dental hygienists practicing in public health settings to provide certain services to Medicaid-eligible children without the supervision of a dentist (regulations not yet published as of early 2002), and 3) requires the creation of a donated dental services program, through which volunteer licensed dentists will provide comprehensive dental care to needy, disabled, elderly and medically-compromised individuals. The measure also granted a significant Medicaid fee increase to dental providers.

As follow up to efforts by the state hospital association, another 2001 law approved the development of an analysis of the state's allied health workforce. The source of funding for this initiative is not clear. In 2001, the state hospital association also established a \$1 million scholarship/work repayment program for students in nursing and allied health.

In 2002, a rapidly declining fiscal climate in the state has made further significant efforts unlikely. Missouri faces a \$612 million budget deficit in fiscal year 2003 in addition to a \$340 million shortfall in the previous budget period. Major across-the-board cuts in state agency spending are expected. Such constraints are exacerbated by the so-called Hancock amendment to the Missouri constitution in the early 1990s which caps the state budget at 103 percent of the previous year's budget, with any cost overruns refunded to the state citizenry. Items on the 2002 legislative agenda for consideration include measures that would limit mandatory overtime for nurses and examine the development of nurse staffing plans in hospitals.

Physicians

Despite the fact that Missouri's ratio of physicians is lower than the national average, major attention to address this problem appears nonexistent. Less than half of newly entering medical students to the state's four allopathic medical schools (the state has also two osteopathic schools) are state residents. Just 40 percent of all physicians completing their graduate medical education in Missouri now practice in the state.

The mission of the statewide Area Health Education Centers (AHECs) program aims to improve the recruitment and retention of physicians (primarily) to rural and underserved areas of the state. Over 350 physicians and other primary care practitioners are needed to remove the state's primary care HPSAs. Currently, the AHEC program hopes to assist in Missouri's new (federally-funded) workforce development initiative to assist unemployed workers to be retrained and to work whenever possible in underserved areas.

Nursing

Data suggests that Missouri faces less of a shortage of nurses than many states. However, expected demand for nurses is a major factor in the state's projected health workforce. Registered nurses as an occupation have the third highest number of all projected jobs openings in the state, according to state estimates. However, graduations of baccalaureate-trained nurses have been flat or in decline in recent years, and data suggest that there are only a small percent of nurses licensed but not working as nurses in the state. The board of nursing

and state hospital association support expansion of nurse training capacity in the state's nursing schools. Lack of training capacity remains a problem in many of the schools. Missouri's nurses association is one of five state nursing associations nationwide that recently cut their affiliation with the American Nurses Association (ANA) in order to advocate for government-mandated nurse-to-patient ratios in acute care hospitals and elsewhere. The ANA opposes government mandated ratios.

The market for nurse practitioners appears to be saturated with reports that recent graduates are still looking for work. Also, a number of rural health clinics—traditional locations for nurse practitioner employment—are closing across the state. Advanced practice nurses in Missouri enjoy the opportunity to practice independently from a physician.

Dentists

Data indicate that the dental workforce has the most significant shortage of any health profession in the state. About two-thirds of all practicing dentists are reported to be over age 55 years. The state suffers from having an inadequate number of pediatric dentists in practice and training. The shortage of dentists appears to be the most acute in rural areas.

The state's current number of dental school graduates is not enough to offset such shortages. In response, the state's one dental school plans to increase enrollment of first-year students from 80 to 100, effective fall 2002. Of that number, the school hopes to admit 70 Missouri resident applicants by fall 2004, while maintaining its relationship with Kansas to buy slots. Insufficient training capacity is compounded by the fact that Missouri has no pre-dental educational programs. In increasing class size, the dental school will need to increase faculty size as well as compensation. Additional state funds to do so do not appear to be readily available. The dental school is also interested in placing more students in publicly funded clinics for training than private dentist offices. In addition, many of the state's community health centers are interested in establishing or expanding their dental practices. There are also calls to increase the number of dental hygiene programs and/or class size in the state and to include hygienists in current state loan repayment and primary care grant programs.

Pharmacists

To date, there appears to be no statewide attention to pharmacy workforce issues. Although no data is readily available that would point to a current shortage of pharmacists, some state officials point to a looming shortage. Several hospitals report difficulty filling pharmacy positions. The current statewide hospital vacancy rate is about 7 percent.

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