



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

Spring 2002

TENNESSEE

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The Health Care Workforce in Eight States: Education, Practice and Policy

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

The population of Tennessee remains predominantly rural. About 20 percent of the residents are minority or ethnic (mostly African-American) in nature.

The advent in the mid-1990s of the state's managed care health insurance program for Medicaid and the indigent population—TennCare—has reduced the proportion of the population who are uninsured to significantly below national averages. However, a fifth of Tennessee's residents live in primary care health professional shortage areas (HPSAs). More problematic is the fact that 27 percent of the population—twice the national average—reside in dental care HPSAs. In relation, the number of National Health Service Corps professionals per 10,000 HPSA residents in the state is below the national norm. Although Tennessee's overall supply of physicians, nurses and pharmacists (expressed as a ratio to 100,000 population) mirrors or exceeds nationwide marks, the state's ratio of dentists and dental hygienists is below U.S. figures.

As is often the case elsewhere, problems of accessing the health workforce are more acute in rural and underserved communities. About 80 percent of the state's counties are identified as federal or state designated HPSAs. Tennessee's past efforts to improve provider availability have included loan repayment programs for health professions students and residents. In recent years, such state-funded programs have been terminated for various reasons. However, several other state initiatives to improve recruitment and retention of the health workforce in underserved areas exist. A new statewide effort to establish and implement a statewide recruitment and retention plan based on health provider demand assessments across regions of the state appears promising. In recent years, Tennessee has developed a public profiling system for physicians and nurses. Information for the profiles are collected by the Department of Health and disseminated to the public as required under the Health Care Consumer Right-to-Know Act of 1998.

Availability of reliable statewide information on Tennessee's health care workforce remains a question. Significant strides to better understand and address statewide physician and nurse workforce needs are offset by little attention to researching supply and demand trends and addressing shortages of dentists and other health professions.

Although the state's overall supply of physicians appears adequate, maldistribution remains a problem. Just over half of newly entering students to the state's four medical schools are state residents and less than half of physicians who completed their graduate medical education in Tennessee remain in the state to practice. Moreover, Tennessee has a persistent problem recruiting primary care physicians to rural underserved communities.

Concerns about a nursing shortage in Tennessee have only become apparent in the last few years. The extent to which there is a perceived shortage varies by region of state and type of employing institution. Anecdotal reports suggest that nurse vacancy rates in hospitals are about 15 percent statewide. The Tennessee Center for Nursing, an outgrowth of the Tennessee Healthcare Consortium for Nursing (originally funded by a Robert Wood Johnson Colleagues in Caring grant) is engaged in statewide nursing workforce data collection, analysis and planning and proposes recommendations for nursing education and practice reform.

Efforts to increase participation of dentists in the Medicaid program are challenging in Tennessee as well as most states. Despite recently mandated Medicaid rate increases for dental providers, participation in TennCare remains very low. TennCare's plan to improve access to oral health services includes a proposal to "carve out" such services from managed care in 2002.

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		TN	U.S.
Total Population (2000)		5,689,283	281,421,906
Sex (2000)	% Female	51.3	50.9
	% Male	48.7	49.1
Age (2000)	% less than 18	24.6	25.7
	% 18-64	63.0	61.9
	% 65 or over	12.4	12.4
% Minority/Ethnic (1997-1999)		21.1	29.1
% Metropolitan (2000)*		67.6	79.9

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

Sources: U.S. Census Bureau, AARP.

About a fifth of Tennessee residents are minorities.

Table I-b.

PROFESSION UTILIZATION	TN	U.S.
% Adults who Reported Having Routine Physical Exam Within Past Two Years (1997)	85.8	83.2 (Median)
Average # of Retail Prescription Drugs per Resident (1999)	14.0	9.8
% Adults who Made Dental Visit in Preceding Year by Annual Family Income (1999):		
Less than \$15,000	37	
\$15,000 - \$34,999	58	
\$ 35,000 or more	78	

Tennessee citizens are prescribed a much higher number of retail drugs per resident than the national average.

Table I-c.

ACCESS TO CARE		TN	U.S.
% Non-elderly (under age 65) Without Health Insurance	1999-2000	12	16.0
	1997-1999	14	18.0
% Children Without Health Insurance	1999-2000	7	12.0
	1997-1999	10	14.0
% Not Obtaining Health Care Due to Cost (2000)		9.4	9.9
% Living in Primary Care HPSA (2001)		20.8	19.9
# Practitioners Needed to Remove Primary Care HPSA Designation (2001)		123	--
% Living in Dental HPSA (2001)*		26.9	13.7
# Practitioners Needed to Remove Dental HPSA Designation (2001)		268	--

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.

Tennessee has twice the proportion of residents living in dental HPSAs as the U.S. as a whole.

Table I-d.

PROFESSIONS SUPPLY				
Profession	# Active Practitioners	# Active Practitioners per 100,000 Population		
		TN	U.S.	
Physicians (1998)	10,485	193	198	
Physician Assistants (1999)	363	6.6	10.4	
Nurses	RNs (2000)	49,626	872	782
	LPNs (1998)	19,280	354.9	249.3
	CNMs (2000)	78	1.4	2.1
	NPs (1998)	1,347	24.8	26.3
	CRNAs (1997)	844	15.7	8.6
Pharmacists (1998)	4,080	75.1	65.9	
Dentists (1998)	2,240	41.2	48.4	
Dental Hygienists (1998)	2,540	46.8	52.1	
% Physicians Practicing Primary Care		31.0 (30.0 U.S.)		
% Registered Nurses Employed in Nursing		88.7 (81.7 U.S.)		
% of MDs Who Are International Medical Graduates (IMGs)		13.0 (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.

Tennessee as a higher percentage of registered nurses employed in nursing than the national average.

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
36	28	72	0.30 (0.49 U.S.)
<i>Field Strength by Profession</i>			
Physicians	13		
Nurses	13		
Physician Assistants	0		
Dentists/Hygienists	10		

HPSA= Health Professional Shortage Area

Source: BHPr-NHSC.

Tennessee's ratio of NHSC professionals per 10,000 HPSA population is much lower than the national average.

Table I-f.

MANAGED CARE				
Penetration Rate of Commercial and Medicaid HMOs (as % of total population), 2000			TN	U.S.
			32.1	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	Yes	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 Tennessee residents receives 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	N/A	N/A	
	NPs	*	N/A	N/A	N/A	
	Dentists	*	N/A	N/A	N/A	
	# of Enrolled Pharmacies					N/A
	% Change in Physician Fees (All Services), 1993-1998					Medicaid fees are fully capitated.
	Recent State-Mandated Payment Increases					Yes (Dental providers, unspecified)
	Medicare	# Active Practitioners Enrolled (2000)				
% Practitioners who Accept Fee as Full Payment (2001)					88.7	

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.

Most Medicaid fees in Tennessee are fully capitated as part of the state’s TennCare program.

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>)	4	Public Schools	2
		Private Schools	2
		Osteopathic Schools	0
# of Medical Students (<i>Allopathic and Osteopathic</i>)	1997-1998	1,723	
	1999-2000	1,713	
# Medical Students per 100,000 Population ¹	1999-2000	30.1	
% Newly Entering Students (<i>Allopathic</i>) who are State Residents, 1999-2000		54.8	
Requirement for Students in Some/All Medical Schools to Complete a <i>Primary Care Clerkship</i>	By the State	No	
	By Majority of Schools	Yes	
# of Medical School Graduates (<i>Allopathic and Osteopathic</i>)	1998	429	
	2000	416	
# Medical School Graduates per 100,000 Population ¹	2000	7.3	
% Graduates (<i>Allopathic</i>) who are Underrepresented Minorities, 1994-1998		20.09 (10.5 U.S.)	
% 1987-1993 Medical School Graduates (<i>Allopathic</i>) Entering Generalist Specialties		27.9 (26.7 U.S.)	
State Appropriations to Medical Schools (<i>Allopathic and Osteopathic</i>), 1999-2000	Total	\$84.9 million	
	Per Student	\$ 49,538	

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.

Tennessee's medical schools graduate twice the proportion of underrepresented minorities as the national average.

Table II-b.

GRADUATE MEDICAL EDUCATION (GME)		
# of Residency Programs (<i>Allopathic and Osteopathic</i>), 1999-2000 ¹		161
# of Physician Residents (<i>Allopathic and Osteopathic</i>), 1999-2000 ¹		1,856
# Residents Per 100,000 Population, 1999-2000		32.6
% Allopathic Residents from In-State Medical School, 1999-2000		26.4
% Residents who are International ² Medical Graduates, 1999-2000		17.7 (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		\$ 46.3 million
	Payments as % of Total Medicaid Hospital Expenditures	7.5 (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	Yes
<i>Medicare</i> Payments for Graduate Medical Education, 1998 ³		\$ 109.28 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.”

Neither the state of Tennessee, nor a majority of its primary care residency programs, requires physician residents to be offered a rural rotation.

Table II-c.

FAMILY MEDICINE RESIDENCY TRAINING			
# of Residency Programs, 2001	10	# Residencies Located in Inner City	3
		# Residencies Offering Rural Fellowships or Training Tracks	3
# of Family Medicine Residents, 1999-2000			53
# Family Medicine Residents per 100,000 Population ¹			0.93
% Graduates (<i>from state's Allopathic and Osteopathic medical schools</i>) who were First Year Residents in Family Medicine, 1995-2000			14.3 (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			44.7 (48.1 U.S.)
State Appropriations for Family Medicine Training, ² 1996-1997	Total		\$ 6.5 million
	Per Residency Slot		\$ 108,333

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".

Tennessee has less than one family medicine resident per 100,000 population.

Table II-d.

NURSING EDUCATION				
# of Nursing Schools	33	Public Schools		20
		Private Schools		13
# of Nursing Students ¹ 1998-2000	5,440	# Associate Degree, 1998-1999		1,931
		# Baccalaureate Degree	1998-1999	2,615
			1999-2000	2,354
		# Masters Degree	1998-1999	844
			1999-2000	789
		# Doctoral Degree	1998-1999	50
			1999-2000	96
# Per 100,000 population ²			95.6	
# of Nursing School Graduates ¹ 1999-2000	2,139	# Associate Degree, 1999		823
		# Baccalaureate Degree	1999	889
			2000	866
		# Masters Degree	1999	416
			2000	392
		# Doctoral Degree	1999	11
			2000	8
# Per 100,000 population ²			37.6	
State Appropriations to Nursing Schools (<i>Baccalaureate, Masters and Doctoral</i>), 1998-1999		Per Student: \$ 8,036 (1 school 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.

Tennessee's nursing school enrollment and graduations declined from 1999 to 2000.

Table II-e.

PHARMACY EDUCATION			
# of Pharmacy Schools	1	Public Schools	1
		Private Schools	0
# of Pharmacy Students, 2000-2001	381	# Baccalaureate Degree	0
		# Doctoral Degree (<i>PharmD</i>)	381
	# Per 100,000 population*	6.7	
# of Pharmacy Graduates, 2000	97	# Baccalaureate Degree	0
		# Doctoral Degree (<i>PharmD</i>)	97
	# Per 100,000 population*	1.7	

* 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		1
# of Physician Assistant Program Students, 2000-2001		61
# Physician Assistant Program Students per 100,000 Population ¹		1.1
# of Physician Assistant Program Graduates, 2001		32
# Physician Assistant Program Graduates per 100,000 Population ¹		0.56
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	2	Public Schools	1
		Private Schools	1
# of Dental Students, 2000-2001	529		
# Dental Students per 100,000 Population*	9.3		
# of Dental Graduates, 2000	119		
# Dental Graduates per 100,000 Population*	2.1		
State Appropriations to Dental Schools, 1998-1999	Per Student: \$ 18,147		
	As % of Total Revenue: 32.7 (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	5	Public Schools	5
		Private Schools	0
# of Dental Hygiene Program Students, 1997-1998	230		
# Dental Hygiene Program Students per 100,000 Population*	4.0		
# of Dental Hygiene Program Graduates, 1998	117		
# Dental Hygiene Program Graduates per 100,000 Population*	2.1		

* 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 TENNESSEE BETWEEN 1975 AND 1995.

Table III-a.

TENNESSEE		
Number of physicians who were trained in TN and who are now practicing in TN as a percentage of all physicians practicing in TN.		34.37
Number of physicians who were trained in TN and are practicing in TN, by practice location (metro code ¹), as a percentage of all physicians practicing in TN.	#00	36.74
	#01	42.86
	#02	31.35
	#03	40.60
	#04	50.00
	#05	35.91
	#06	41.09
	#07	42.96
	#08	50.00
#09	50.00	
Number of physicians who were trained in TN and who are now practicing in TN as a percentage of all physicians who were trained in TN.		37.75
Number of physicians who were trained in TN and are practicing in TN, by practice location (metro code ¹), as a percentage of all physicians trained in TN.	#00	21.94
	#01	9.52
	#02	55.62
	#03	25.25
	#04	49.15
	#05	28.89
	#06	41.41
	#07	46.21
	#08	59.38
#09	45.16	

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 TENNESSEE BETWEEN 1978 AND 1998.

Table III-b.

TENNESSEE		
Number of physicians who received their most recent GME training in TN and who are now practicing in TN as a percentage of all physicians practicing in TN.		42.90
Number of physicians who received their most recent GME training in TN and are practicing in TN, by practice location (metro code ¹), as a percentage of all physicians practicing in TN.	#00	55.24
	#01	56.67
	#02	39.81
	#03	35.69
	#04	46.02
	#05	35.64
	#06	34.57
	#07	38.38
	#08	61.54
#09	51.72	
Number of physicians who received their most recent GME training in TN and who are now practicing in TN as a percentage of all physicians who were trained in TN.		49.30
Number of physicians who received their most recent GME training in TN and are practicing in TN, by practice location (metro code ¹), as a percentage of all physicians trained in TN.	#00	44.35
	#01	13.93
	#02	64.21
	#03	22.05
	#04	41.27
	#05	24.10
	#06	39.91
	#07	30.81
	#08	77.42
#09	41.67	

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.

Codes # 00-03 indicate metropolitan counties:

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- 01: Fringe counties of metro areas of 1 million or more
- 02: Counties with metro areas of 250,000 - 1 million
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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
- 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 approved medical college and passing score on medical licensing examination.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full License (through statute), though exceptions can be made for second opinions, academic consultations, and risk evaluations.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	Yes.

Sources: State licensing board, HPTS.

Table IV-b.

PHYSICIAN ASSISTANTS	
LICENSURE REQUIREMENTS	Graduation from accredited PA program and National Commission on Certification of Physician Assistants (NCCPA) examination.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p><i>PRESCRIPTIVE AUTHORITY</i> Yes. PAs may prescribe non-controlled and Schedules II-V medications. PA must register with the Drug Enforcement Agency (DEA).</p> <p><i>PHYSICIAN SUPERVISION</i> Active and continuous overview, but physician not required to be physically present at all times.</p>

Source: State licensing board.

Table IV-c.

NURSES	
LICENSURE REQUIREMENTS	<p>Registered Nurses (RNs) <i>By examination:</i> Completion of course of study in approved school of nursing, passed acceptable examination. <i>By endorsement:</i> Graduation from approved school of nursing and the National Council Licensure Examination (NCLEX), and be in good standing as a registered nurse in other jurisdiction.</p> <p>Advanced Practice Nurses (APNs) -The Council of Certified Professional Midwifery certifies CNMs separately. Applicants must have completed appropriate education and successfully completed required examinations -Certification as a nurse anesthetist is granted through the American Association of Nurse Anesthetists (AANA) Council on Certification. CRNA's must hold a current state license as a registered nurse, graduate from an approved education program, successfully complete the certification examination -The Board of Nursing certifies NPs. They must hold a current license as registered nurse, have graduated from master's or doctoral program in nursing, preparation in practitioner skills, current national certification.</p> <p>Licensed Practical Nurses (LPNs) Successfully completed approved program and passed appropriate exams.</p>
LICENSURE REQUIREMENTS: <i>FOREIGN-TRAINED NURSES</i>	Complete state board test pool examination; provide evidence of acceptable course of study; have a sufficient comprehension of the English language.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	None.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p><i>PRESCRIPTIVE AUTHORITY</i> NP, CNS, CNM, CRNA can prescribe schedule II-V if they meet qualifications.</p> <p><i>PHYSICIAN SUPERVISION</i> Advanced practice nurses can practice under protocol developed with supervising physician.</p>
RECENT STATE REQUIREMENTS TO IMPROVE WORKING CONDITIONS IN CERTAIN INSTITUTIONS	None.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	No.

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

Table IV-d.

DENTISTS	
LICENSURE REQUIREMENTS	Graduation from school of dentistry and successful completion of certifying examinations.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full License.

Source: State licensing board.

Table IV-e.

PHARMACISTS	
LICENSURE REQUIREMENTS	North American Pharmacist Licensure Examination (NAPLEX); 1,500 hours of internship; graduation from an approved school of pharmacy.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	Pharmacists can provide immunizations.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	Yes , available upon request.

Source: State licensing board.

Table IV-f.

DENTAL HYGIENISTS	
LICENSURE REQUIREMENTS	Graduation from school of dental hygiene and successful completion of certifying examinations.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p><i>PRESCRIPTIVE AUTHORITY</i> No. Authority to administer nitrous oxide has been granted by the legislature, but no rules have been set by the licensing board.</p> <p><i>DENTIST SUPERVISION</i> General Supervision. Hygienists can earn an income while the dentist is out of the office within the boundaries of the practice act.</p>

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 Tennessee'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	No							
SUPPORT FOR HEALTH PROFESSIONS EDUCATION (stipends, preceptorships) IN UNDERSERVED AREAS	Yes	2*						
RECRUITMENT / PLACEMENT PROGRAMS FOR HEALTH PROFESSIONALS	Yes	3	X	X		X		
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	4*						
PAYMENT BONUSES / OTHER INCENTIVES BY MEDICAID OR OTHER INSURANCE CARRIERS	No							
MEDICAID REIMBURSEMENT OF TELEMEDICINE	Yes	5	X	X		X		
SUPPORT FOR DEVELOPMENT OF TELEMEDICINE NETWORKS AND INFRASTRUCTURE	Yes	2	X	X		X		

* Data on health professions affected was not available.

Source: State health officials.

Tennessee uses many initiatives to recruit physicians, nurses, and dentists to rural and underserved areas in the state.

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	0	0	N/A *						
SCHOLARSHIP	0	0	N/A *						

* 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.)

N/A* Data is not applicable

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)	Yes	X	X				X
	Yes	X	X				X
PRODUCTION OF RECENT STUDIES OR REPORTS THAT DOCUMENT / EVALUATE THE SUPPLY, DISTRIBUTION, EDUCATION OR REGULATION OF HEALTH PROFESSIONS	Yes		X	X			
RECENT REGULATORY ACTIONS INTENDED TO REQUIRE OR ENCOURAGE COORDINATION OF POLICIES AND DATA COLLECTION AMONG HEALTH PROFESSIONS GROUPS OR LICENSING BOARDS	Yes		X				

* 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.

Tennessee has recently taken action to encourage coordination among health professions groups and licensing boards on policy making and data collection for nurses.

VI. EXEMPLARY WORKFORCE LEGISLATION, PROGRAMS AND STUDIES

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

Legislation and Programs

The Underserved Areas Program

University of Tennessee College of Medicine

This program aims to place additional generalist physicians in medically underserved communities across the state. In return for establishing a general practice in an underserved area for at least four years, participants are provided with four years of special education assistance and financial support. The communities seeking physicians fund the program.

Tennessee Recruitment and Retention Plan

Proposal for Implementation of a Statewide Program

This report discusses issues in recruiting and retaining health professionals across the state and provides statewide strategies for workforce planning.

Tennessee Center for Nursing (TCN)

This non-profit corporation for nursing workforce studies is an outgrowth of the Tennessee Healthcare Consortium for Nursing. Its multiple funding streams include licensure fees from the Tennessee Board of Nursing. TCN provides the board of nursing with researched based-data on current nursing issues.

Studies

Tennessee Health Professions Demand Assessment

Office of Rural Health and Community Partnerships, East Tennessee State University, July 2001

The demand assessment project is an initial step in the establishment and implementation of a statewide recruitment and retention plan. The project plans to track the number of health professionals being recruited and the amount of time and resources being used for recruitment activities.

Projection of the Supply and Demand for Nurses in Tennessee: 2000 Through 2020 and Analyses of Current Nurse Staffing in Tennessee

Tennessee Center for Nursing, July 2001

This report looks at the supply and demand of registered nurses in the state. The report notes that while in the short term the supply exceeds the demand, in the long term the demand for nurses will exceed the supply by a large margin. Their report calls for further studies to address the supply issues in the state.

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

- **Tennessee Department of Health**
- **Tennessee Department of Finance and Administration (TennCare)**
- **Tennessee Hospital Association**
- **Tennessee Healthcare Consortium for Nursing/Tennessee Center for Nursing/Tennessee Nurses Association/Tennessee Board of Nursing**
- **Tennessee Dental Association**
- **University of Tennessee Health Science Center**
- **East Tennessee State University**

Evidence of Collaboration: Moderate (largely associated with physician and nurse workforce data and policy development)

Tennessee is a predominantly rural state. About 20 percent of its residents are minority or ethnic (mostly African-American) in origin.

Beginning the mid-1990s, the state's managed care health insurance program for Medicaid and the indigent population—TennCare—has reduced the proportion of the population who are uninsured to significantly below national averages. However, a fifth of Tennessee's residents live in primary care health professional shortage areas (HPSAs). More problematic is the fact that 27 percent of the population—twice the national average—reside in dental care HPSAs. In relation, the number of National Health Service Corps professionals per 10,000 HPSA residents in the state is below the national norm. Although Tennessee's overall supply of physicians, nurses and pharmacists (expressed as a ratio to 100,000 population) mirrors or exceeds nationwide marks, the state's ratio of dentists and dental hygienists is below U.S. figures.

As elsewhere, problems of accessing the health workforce are often more acute in rural and underserved communities. About 80 percent of the state's counties are identified as federal or state designated HPSAs. Tennessee's past efforts to improve provider availability have included loan repayment programs for health professions students and residents. In recent years, such state-funded programs have been terminated for various reasons. However, several other state initiatives to improve recruitment and retention of the health workforce in underserved areas exist. State officials rank state support for health professions education in underserved areas and state support for development of telemedicine networks in rural communities as being the most effective.

In addition, a new statewide effort to establish and implement a statewide recruitment and retention plan based on health provider demand assessments across regions of the state appears promising. The initiative is a collaborative effort involving the Department of Health, the state hospital and rural health associations, and the state's four medical schools. The assessment model is based on a similar model used in Minnesota. The project plans to track the number of physicians, physician assistants and family nurse practitioners being recruited and the amount of time and resources being used for such activity. The plan has important implications as well for statewide health workforce planning. The Department of Health recently updated the state's health access plan.

In recent years, Tennessee has developed a public profiling system for physicians and nurses. Information for the profiles are collected by the Department of Health and disseminated to the public as required under the Health Care Consumer Right-to-Know Act of 1998. In early 2002, the state also made it easier for health professionals to renew their licenses by establishing an online Internet service.

Availability of reliable statewide information on Tennessee's health care workforce is lacking. Significant strides to better understand and address statewide physician and nurse workforce needs are offset by little attention to researching supply and demand trends and addressing shortages of dentists and other health professions. In addition to establishing its own health workforce committee that has put in place short-term recruitment strategies for members, the state hospital association is seeking greater attention to long-term public policy solutions to data development and workforce recruitment problems. The association conducted a survey in 2001 to determine the status of enrollment and completion rates of all nursing, pharmacy and radiologic technology training programs in the state, and plans to launch in 2002 its own center for healthcare workforce development to serve as a clearinghouse for data collection, future projections and planning and a resource to local hospitals for workforce recruitment.

Any new public policy initiatives in the near term are expected to occur in a changing fiscal and political environment. Tennessee, like many states, is grappling with a significant budget deficit and some significant structural problems with government operations. In early 2002, TennCare, in order to keep solvent, sought federal approval under its waiver to tighten eligibility requirements and drop beneficiaries. The Medicaid managed care program historically has also had difficulty sustaining adequate provider participation. Across state government, there are proposals calling both for reductions in spending and an increase in the state sales tax. Tennessee does not have an income tax. In addition, a new governor is to be elected in fall 2002.

Physicians

Although the state's overall supply of physicians appears adequate, maldistribution remains a problem. Just over half of newly entering students to the state's four medical schools are state residents and less than half of physicians who completed their graduate medical education in Tennessee remain in the state to practice. Moreover, Tennessee has a persistent problem recruiting primary care physicians to rural underserved communities.

With the state's costly implementation of TennCare in 1994, a major early casualty of the fiscal pressures was Medicaid support for graduate medical education (GME). Effective January 1995, the state abruptly terminated TennCare funding for GME. Looking to advise his administration on how TennCare could be improved, in 1995 Tennessee's new governor created the Governor's TennCare Roundtable. The Roundtable made a number of recommendations in an interim 1995 report that included the restoration of GME funding by TennCare. A small working group was then formed to examine the issue of GME funding and to work with a consultant and state officials in drafting specific recommendations. During this period, TennCare officials made known the Bureau's intention of allocating \$48 million to restore support for GME during FY 1996.

At the same time, the output of primary care practitioners from the state's medical schools was lagging. Early problems with TennCare centered on the lack of primary care providers in many rural areas of the state. While TennCare was supporting GME, the funding was not distributed in a way that addressed the needs of the program. It was the process of restoring GME support by TennCare that the need to change the way GME funds were distributed became apparent.

The plan developed by the TennCare Graduate Medical Education Working Group to restore GME funding was ultimately accepted by the state. Under the agreement to restore funding in FY 1996, GME dollars followed residents to training sites and provided financial incentives to the state's medical schools that encourage primary care training as well as the placement of those trainees in underserved areas. GME funds are allocated directly to the state's four medical schools and therefore encourage education in non-hospital, community based settings. The plan was phased in over a five-year period.

Recent revelations suggest that the GME program is not having its desired outcomes statewide. In early 2002, the state hospital association and others proposed using \$2 million, originally set aside under the GME program for primary care resident loans, to instead recruit primary care graduates to underserved rural communities. At least one state official believes also that TennCare GME funds should be redirected in part to pay for the education of dentists and other professions in short supply in the state.

Nursing

Concerns about a nursing shortage in Tennessee have only become apparent in the last few years. The extent to which there is a perceived shortage varies by region of state and type of employing institution. Anecdotal reports suggest that nurse vacancy rates in hospitals are about 15 percent statewide. Despite that fact that the overall supply of nurses has risen, total enrollment in the state's more than 30 nursing schools is in decline. Although applicant pools for many schools remain high, there are growing concerns about the applicant's level of basic preparedness. In addition, faculty shortages are becoming more apparent.

The predominant source for this important new information is the Tennessee Center for Nursing, an outgrowth of the Tennessee Healthcare Consortium for Nursing (originally funded by a Robert Wood Johnson Colleagues in Caring grant). The Center is engaged in statewide nursing workforce data collection, analysis and planning, and proposes recommendations for nursing education and practice reform. With the state's current fiscal climate, the Center supports the work of current state-funded programs rather than recommending new initiatives. The Center is modeled on a similar center in North Carolina and is funded largely by nurse license renewal fees.

Workplace issues for nursing are not a major item for policymakers. Mandatory overtime for nurses appears to be less of a problem in hospitals and more in nursing homes. Although ideas for nurse staffing patterns in hospitals have been proposed, no legislative attention to the issue is expected. State loan repayment programs have not been funded for several years.

There is growing interest by the state board of nursing in seeking approval to participate in the interstate licensure compact for nurses being proposed by the National Council of State Boards of Nursing. In 2002, advanced practice nurses are seeking title protection and professional recognition through state legislation.

Dentists

Efforts to increase participation of dentists in the Medicaid program are challenging in Tennessee as well as most states. Despite recently mandated Medicaid rate increases for dental providers, participation in TennCare remains very low. TennCare's plan to improve access to oral health services includes plans to "carve out" such services from managed care in July 2002. Before TennCare began in the early 1990s, about 1,000 dentists participated in Medicaid, but since that time, the number of dentists in the program has dropped to about 200. The dentist community in Tennessee is largely supportive of this plan which many feel, with the promise of a significant raise in payment rates, will

increase dentist participation in Medicaid, particularly newly practicing dentists. Dental officials have also stated that Medicaid beneficiaries in rural areas will benefit the most from this change.

In 2002, TennCare plans also to strengthen an already significant public dental health program for low-income children. Dental service capacity in local health departments statewide is increasing, and the delivery of school-based screening and sealant services through the use of mobile vans and other resources is being expanded. Dental hygienists practicing in such public health settings are allowed to practice with the direct on-site supervision of a dentist. In 2002, there is also proposed legislation that would expand the duties of hygienists to allow hygienists to perform certain restorations and impressions. Such legislation appears to be supported by the state dental association.

Despite a recent study by the University of Tennessee dental school showing the state has a need for additional dentists, proposals put forth in early 2002 would actually reduce the class size of the state's one public dental school in Memphis from 80 to 60 slots. At one time, the school's class size was nearly 160 students. Proposed state spending reductions would especially target higher education. Dental school officials speculate the financial impact of such a reduction would not be significant as the school would continue to provide slots for about 20 students from neighboring Arkansas. However, concerns over the school's inability to train enough pediatric dentists to meet demand persist. In another effort to expand the state supply of dentists, proposed legislation in early 2002 would loosen longstanding restrictions on reciprocity for licensure by the state dental board.

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