

Rural County Health Economic Impact and Workforce Analysis

For Kerr County

Presented by South Central AHEC (Area Health Education Center)
A regional center of South Texas AHEC based at the
University of Texas Health Sciences Center - San Antonio
In collaboration with East Texas AHEC
April 2010



In partnership with the
Texas State Office of Rural Health
Texas Department of Rural Affairs

www.texasruralcountyhealth.org



Table of Contents

	Page
1. Introduction and Executive Summary	2
2. Demand, Supply, and Future Need for Additional Primary Care Practitioners in Kerr County, Texas.....	4
3. Economic Impact of a Rural Primary Care Physician on the Economy of Kerr County, Texas.....	8
4. Cost and Revenue to establish a Solo Rural Primary Care Physician Practice in Texas.....	12
5. Texas Loan Repayment Programs.....	16
6. Texas Physician Workforce Facts.....	20
7. National Health Trends.....	21
8. Health Professional Shortages Areas and Physician Scarcity Areas: A Brief Overview	26
9. Rural Health Clinics and Federally Qualified Health Clinics: A Brief Overview	28
10. National Health Service Corps: A Brief Overview	29

Dear Community Partners,

The South Texas AHEC (Area Health Education Center) provides a wide range of community-based activities designed to improve community and individual health. We conduct programs that 1) focus on community health systems analysis and planning; 2) support health workforce recruitment and retention; and 3) provide health literacy information for a variety of community audiences. This work is carried out respectively through five regional centers that cover the southern half of Texas. South Texas AHEC and its centers are part of a National AHEC Network across 48 of the 50 states, and one of three programs providing statewide coverage in Texas. Over its history, South Texas AHEC has developed an extensive network of community healthcare sector and other economic partners, has worked with a variety of community and state organizations and agencies, and has directly impacted tens of thousands of individuals through its outreach programming.

One such partnership effort is this report, *Healthcare and Economic Development: Community Primary Care Physician Workforce Analysis*, for your county, one of an ongoing series of analyses prepared with collaboration and funding support from the Texas State Office of Rural Health, a division of the Texas Department of Rural Affairs (TDRA). As the state agency dedicated solely to rural Texas, TDRA makes the broad resources of state government more accessible to rural communities. The agency ensures a continuing focus on rural issues, monitors governmental actions, recommends solutions to problems affecting rural Texas, and is a provider of rural-focused state and federal resources. TDRA's goal is to strengthen rural communities so that they remain contributors to the prosperity of the state and to the rich cultural identity that is distinctly Texan.

South Texas AHEC and the rural health office of TDRA have worked collaboratively on a variety of health workforce recruitment and retention efforts. South Texas AHEC works collaboratively with East Texas AHEC and West Texas AHEC as well, and has provided analyses of counties in their service areas to their respective regional staffs.

This project is important for several reasons. The report:

- 1) informs community leaders of local healthcare sector factors.
- 2) promotes an economic impact perspective when considering local healthcare.
- 3) stimulates community action supporting the local healthcare sector
- 4) serves as the basis for additional health workforce planning and development activities

Two important sources of information underscore the relevance of concern for rural health workforce.

According to the 2009 State Physician Workforce Data Book published by the American Association of Medical Colleges' Center for Workforce Studies, Texas is 47th of 50 states in the ratio of primary care physicians, 68.5 per 100,000 population. This report, found at <http://www.aamc.org/workforce/statedatabook/statephysiciandatabooksept09.pdf> also states that Texas does a good job of growing our own and keeping them, however not enough physicians are being trained and not enough are going into primary care.

Supply Trends Among Licensed Health Professions, 1980-2009, prepared by the Texas Department of State Health Services' Health Professions Resource Center, in collaboration with the East Texas AHEC reports that Texas continues to remain far below national averages for most health professionals, including primary care physicians. The publication can be found at <http://www.dshs.state.tx.us/chs/hprc/09trends.pdf>.

South Texas AHEC is committed to the analysis of information that informs local leaders and regional and state policy makers,

For more information contact South Texas AHEC: 210-567-7813 or Texas Department of Rural Affairs: 512-936-6701. www.texasruralcountyhealth.org

and assists in program planning and implementation which will ultimately lead to improved health of the individuals and communities it serves. South Texas AHEC appreciates the interest of TDRA in supporting this reporting effort as it furthers the interests of rural communities.

Adela N. Gonzalez, Ph.D., MPA
Executive Director for the Center for South Texas Programs
And South Texas AHEC
University of Texas Health Sciences Center-San Antonio

Demand, Supply, and Future Need for Additional Primary Care Practitioners in Kerr County, Texas

For the purposes of this report, primary care practitioners include family practitioners, internal medicine physicians, OB-GYN practitioners, and pediatricians, as well as mid-level practitioners providing primary care health services, including nurse practitioners (NP), certified nurse midwives (CNM), and physician assistants (PA). All of these types of physicians and mid-level practitioners should be considered when analyzing the primary care medical needs in Kerr County.

In order to consider the supply, demand, and future need for primary healthcare providers, an understanding of several factors must be considered. Basic population characteristics are the starting point for understanding the medical service area (MSA). The MSA can include a primary, secondary, and sometimes tertiary healthcare facilities, and is not necessarily restricted to a county boundary. Sets of nearby communities often comprise an MSA, whose needs are met by the practitioners in one or more of those communities. Migration for care occurs within the MSA and may also be seen as in-migration for care. An MSA may lose population to other patient care centers periodically for both primary care services in addition to specialty services not available in the MSA. Eventually, migration for care will re-define the geography of the MSA. For the purposes of this report Kerr County is defined as the primary MSA. This study will utilize and make assumptions using Kerr County data.

The latest population estimates by age and gender for a county can be obtained from the U.S. Census Bureau.⁴ According to the U.S. Census Bureau estimates, the total population for Kerr County for 2008 was 48,269. **Table 1** presents the U.S. Census estimated population for Kerr County for 2008 by age group and gender.

Table 1
2008 Estimated Population
for Kerr County, Texas

2008 Population				
Age	Male	Female	Totals	% of Total
< 15	4,374	3,998	8,372	17.3%
15-24	3,238	2,828	6,066	12.6%
25-44	5,128	5,257	10,385	21.5%
45-64	5,170	5,834	11,004	22.8%
65-74	2,303	2,923	5,226	10.8%
75+	<u>3,028</u>	<u>4,188</u>	<u>7,216</u>	<u>14.9%</u>
Total	<u>23,241</u>	<u>25,028</u>	<u>48,269</u>	<u>99.9%</u>

Source: 2008 population estimates, U. S. Census Bureau.

Demand for direct patient care services can be estimated, based upon the essential demographic characteristics of the population, but must take into account several important variables. Age breakdown of the population by male or female sex, since care-seeking behaviors are different, and geographic distribution within the county are all examples of variables to consider. The types of practitioners available to respond to need are also defined by the population. A community with a younger age segment will need a child healthcare provider, while a community with primarily older residents would be better served by a caregiver with interest and expertise in older adult, geriatric care, and perhaps end-of-life care.

Tables 2a and **2b** present the same age groups with their corresponding estimated number of annual office visits by gender.

The National Ambulatory Medical Care Survey updates the office visits by age and gender annually with the latest data for 2006 provided in August 2008³. For instance, for males under age 15, the average number of annual office visits is 2.6 visits per year. For females age 75 and older, the average number of annual office visits is 7.3 visits per year. Utilization rates and office visits per physician might vary slightly with rural primary care practitioners. Research suggests that utilization per person in rural areas might be lower than the national average due to lower patient incomes and lower rates of insurance coverage.⁵ Rural medical service areas have a higher proportion of elderly, making age analysis critical for estimating the number of rural visits. However, in the absence of specific rural data, national coefficients serve as the best available approximations.

Tables 2a and **2b** illustrate the total office visits for Kerr County, Texas. The average annual visit rates were applied to Kerr County data to estimate the number of primary care office visits in the county. For example, 4,374 males under age 15 will generate 11,372 office visits (2.6 x 4,374).

Table 2a
Estimated Total Physician Office Visits by Males for Kerr County, TX

Age	2008 Population	Visit Rate	Male Visits Totals
< 15	4,374	2.6	11,372
15-24	3,238	1.1	3,562
25-44	5,128	1.6	8,205
45-64	5,170	3.0	15,510
65-74	2,303	5.5	12,667
75+	<u>3,028</u>	7.1	<u>21,499</u>
Total	23,241		<u>72,815</u>

Table 2b
Estimated Total Physician Office Visits by Females for Kerr County, TX

Age	2008 Population	Visit Rate	Female Visits Totals
< 15	3,998	2.6	10,395
15-24	2,828	2.4	6,787
25-44	5,257	3.0	15,771
45-64	5,834	3.9	22,753
65-74	2,923	6.0	17,538
75+	<u>4,188</u>	7.3	<u>30,572</u>
Total	25,028		<u>103,816</u>

Females under 15 were estimated to generate 10,395 office visits. The total annual office visits were 72,815 for males and 103,816 for females, for a grand total of 176,631 visits for Kerr County (**Table 2c**).

Table 2c
Estimated Total and Estimated Primary Care Physician Office Visits for Kerr County, TX

	Total Population	Total Office Visits
Kerr County	48,269	<u>176,631</u>
Total Estimated Primary Care Physician Office Visits (58.3%)		<u>102,976</u>

Source: 2008 population estimates, U. S. Census Bureau; 2006 annual physician office visit rates by age group and gender populations, "National Ambulatory Medical Care Survey," National Health Statistics Reports, No. 3, August 6, 2008.

These office visits are for visits to all types of physicians, both primary care practitioners and specialists, who tend to reside in regional population centers. To determine the number of office visits to primary healthcare practitioners, the National Ambulatory Medical Care Survey data indicate that 58.3 percent of the total office visits are to primary care practitioners. The total office visits to primary care practitioners in Kerr County is estimated to be 102,976 visits. The total annual primary care office visits were made to physicians or mid-level practitioners (PAs, NPs, CNMs) actively providing primary care patient care. The remaining 73,655 annual office visits were made to specialists.

Supply determinations of primary healthcare professionals are not as straightforward as one might expect. Texas maintains data for licensed healthcare professionals, including physicians, PAs, NPs, and CNMs. However, the data for each discipline is somewhat different, and additional information is sometimes necessary to better understand supply, capacity, and capability to meet needs. That translates to access and availability of care in the community. Seeking primary source data from key informants at the community level is often necessary. This report results from use of national, state, and locally gathered information to report local supply of primary healthcare professionals. **Table 3** depicts the Physician Supply Characteristics for Kerr County.

Physician data serves as the focus for this discussion. Information important to incorporate when considering supply and future need include such factors as age of provider which limits longevity in practice; percent of time spent in direct patient care when other business pursuits or lifestyle choices may limit patient care services; and locations where patient care is provided, such as when the provider has offices in more than one community. The content of direct patient care practice is also an important influence. The primary healthcare provider may divide significant amounts of time among ambulatory clinic patient care visits, in-patient hospital care, surgery, obstetrics, emergency room, and nursing home patient care.

(See **Table 4** for examples.) All these responsibilities in different patient care settings cumulatively impact the direct patient care volume or burden of work for the individual healthcare professional. Increased patient visits and longer work hours for rural practitioners has been documented by studies.

Table 3
Physician Supply Characteristics
Kerr County

Total Number of Physicians	117
Number of Primary Care Physicians	49
Number Active in Practice	49
Average Age of Physicians	51
Number over Age 60	9

Source: Health Professions Resource Center, Texas Department of State Health Services, analysis of physician licensure database, January, 2010, verified at local level by East Texas AHEC regional operations staff.

Given this physician supply information, concern might develop regarding age of providers, and their potential longevity in practice. The need for the right clinician mix to respond to the characteristics of the population, and providers who include a range of services, possibly including surgery, obstetrics, nursing home care, and wellness and prevention programs will be needed for a well-rounded local healthcare workforce to address any community's needs.

Table 4
Patient Care Support Volume
Kerr County

Births Delivered in County, 2008 *	586
In-Patient Hospital Census, 2008 **	27,538
Emergency Room visits, 2008 **	30,720
Nrsng Home Resident census, 2010 ***	3,588
Surgery Case Count, 2008 **	5,261

Source: * TX Dept State Health Services, Vital Statistics, July, 2009;
** TX HealthCare Information Council, as of Q1 2008;
*** Estimates based on TX Dept of Aging and Disability Services, Feb, 2010

Future need for primary healthcare providers must take into account many different factors, including trends in population growth or loss, characteristics of the population, geographic distribution of providers compared to that of the population, presence of special population groups in or near the community, and facilities such as clinics, hospital, and nursing homes to support healthcare providers. In addition, access to services such as rehabilitative services, pulmonary care services, hospice, and others also impact the quality of care that many new health professionals expect to be able to provide the quality of care they desire in their practice for their patients.

Community planning, development, and investment in the local healthcare system infrastructure are essential considerations for community leaders. Local healthcare system planning should be considered as important as other community infrastructure needs such as quality schools, improved streets, good water and sanitation systems, and fire and police protection.

Sources:

1. Doeksen, G.A., Miller, K.A., Shelton, P.J., and Miller, D.A., "Family Medicine – A Systematic Approach to the Planning and Development of a Community Practice," University of Oklahoma Health Sciences Center, 1990.
2. Miller, K.A., Doeksen, G.A., Miller, D., Campbell, J., and Shelton, P.J., "Internal Medicine - A Systematic Approach to the Planning and Development of a Community Practice - A Step-by-Step Guide," University of Oklahoma Health Sciences Center, 1993.
3. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center of Health Statistics, "National Ambulatory Medical Care Survey, 2006 Summary," No. 3, August 6, 2008.
4. U. S. Census Bureau, census populations and estimated populations, www.census.gov, February 2009.
5. Reschovsky, J.D., and Stati, A., "Physician Incomes in Rural and Urban America," *Issue Brief Center for Studying Health System Change*, 2005, 92:1-4.
6. Weeks, W.B. and Wallace, A.E., "Rural-Urban Differences in Primary Care Physicians' Practice Patterns, Characteristics, and Incomes," *The Journal of Rural Health*, National Rural Health Association, Spring 2008, Vol. 24 Issue 2: 161-170.
7. Information provided by National Center for Rural Health Works, Oklahoma State University, Oklahoma Cooperative Extension Service, 405-744-6083. www.ruralhealthworks.org May 2009.

The Economic Impact of a Rural Primary Care Physician On the Economy of Kerr County, Texas

Many people have little idea of the economic importance of the health care system to the local community. Primary care physicians are a major part of the health care system. In most rural communities primary care physicians are the principal provider of local health care services.¹

Economically, primary care physicians contribute in two very important ways. First, a primary care physician (PCP) operates a medical clinic and pays administrative and medical staff to provide services to patients. Second, a PCP contributes to the local hospital through inpatient admissions and outpatient services. A large portion of the revenues generated by a PCP practice will be returned to the local community. Local expenditures support jobs, create additional wages and salaries (income), and provide tax revenues that are vital to the local economy. As these dollars continue to be spent in the community, the multiplier effect generated by the PCP becomes clear. In addition to the PCP, new employment opportunities for the clinic's medical staff will be created along with corresponding wages, salaries, and benefits.

Based on research by the National Center for Rural Health Works, on average a solo PCP practice at full operating capacity will employ three employees; a registered nurse (RN), a medical technician or Licensed Vocational Nurse (LVN), and a receptionist/billing clerk.¹

Table 1 summarizes the typical personnel costs of a solo PCP, including the estimated income for the PCP (family or general practitioner). Assuming a benefit ratio of 25 percent, the total estimated annual personnel costs of a solo PCP practice is \$316,175.

Table 2 summarizes the employment, personnel costs, and total revenues of a solo PCP practice. These are the direct economic contributions from the clinic portion of the PCP practice. The clinic

generates revenues of \$416,170 and an income of \$316,175 for the 4.0 clinic employees.

Table 1
Rural Solo PCP Practice in Texas -
Typical Personnel Costs

Type of Occupation	Avg. Annual Costs
Family or General Practitioner	\$137,810
Registered Nurse (RN)	\$59,720
Medical Technician (or LPN)	\$32,530
Receptionist/Billing Clerk	<u>\$22,880</u>
Wages, Salaries, Proprietor Income	\$252,940
Benefits @ 25%	<u>\$63,235</u>
Estimated Personnel Costs	<u>\$316,175</u>

Table 2
Rural Solo PCP Practice in Texas -
Est. Employment, Personnel Costs, & Revenues

Category	Totals
Employment	4
Personnel Costs	\$316,175
Revenues	\$416,170

For the hospital portion of the PCP practice, **Table 3** summarizes the annual direct economic contributions. The American Medical Association, Center for Health Policy Research indicated that on average, one PCP generated 134.4 inpatient discharges. Based on confirmed local data to allow for inflation and regional variances, each inpatient discharge generated average revenues of \$3,907, resulting in total annual inpatient revenues from one PCP of \$525,101. Outpatient net revenues as a percent of inpatient net revenues were determined to be 64.7 percent, resulting in estimated outpatient revenues of \$339,740. This brings the total annual revenues from one PCP practicing at the hospital to \$864,841. Revenues to the hospital from the PCP activity will also support employment and generate payroll. Based on an average hospital salary of \$39,978, the total revenues are estimated to generate 12.5 hospital jobs, with wages, salaries, and benefits (income) of \$499,878. These are the direct economic contributions of a PCP in a rural Texas community with a local hospital (**Table 4a**).

Table 4a
Direct Impact of a Rural PCP
from Clinic and Hospital Activities

Revenue	
Clinic	\$416,170
Hospital	<u>\$864,841</u>
Total	\$1,281,011
Income¹	
Clinic	\$316,175
Hospital	<u>\$499,878</u>
Total	\$816,053
Employment	
Clinic	4.0
Hospital	<u>12.5</u>
Total	16.5

¹ Income includes wages, salaries and benefits, and proprietor income, when applicable.

Table 3
Inpatient Discharges, Revenues, Employment and
Wage and Salaries and Benefits
Generated by a Rural Physician at Local Hospital

No. of Inpatient Discharges	<u>134.4</u>
Inpatient Revenues	\$525,101
Outpatient Revenues	<u>\$339,740</u>
TOTAL Revenues	<u>\$864,841</u>
Employment	<u>12.5</u>
Wages, Salaries and Benefits	<u>\$499,878</u>

Secondary and total impacts are presented in **Table 4b**. Data in the table present the direct, secondary, and total impacts of the PCP clinic and the business that the typical PCP brings to the local hospital.⁶

Table 4b
PCP Impact from Clinic & Hospital Activities
on Revenues, Income¹ and Employment

	Revenue	Mult.	Secondary Impact	Total Impact
Clinic	\$416,170	1.31	\$129,013	\$545,183
Hospital	<u>\$864,841</u>	1.40	<u>\$345,936</u>	<u>\$1,210,777</u>
Total	\$1,281,011		\$474,949	\$1,755,960
	Income¹	Mult.	Secondary Impact	Total Impact
Clinic	\$316,175	1.60	\$189,705	\$505,880
Hospital	<u>\$499,878</u>	1.60	<u>\$299,927</u>	<u>\$799,805</u>
Total	\$816,053		\$489,632	\$1,302,685
	Employees	Mult.	Secondary Impact	Total Impact
Clinic	4.0	1.60	2.0	6.0
Hospital	<u>12.5</u>	1.60	<u>8.0</u>	<u>20.5</u>
Total	16.5		10.0	26.5

¹ Income includes wages, salaries and benefits, and proprietor income, when applicable.

The revenue impact from the clinic was \$545,183, based on the direct clinic revenues of \$416,170 multiplied times the output multiplier of 1.31. The secondary impact totals \$129,013. The secondary revenue impact from the hospital is \$345,936 and the total revenue impact is \$1.2 million. The total revenue impact from a PCP on Kerr County is estimated to be \$1.7 million; of this total, revenues of \$474,949 are the secondary revenues generated in the other businesses and industries as a result of the direct revenues generated by the PCP practice of \$1.3 million.

Income is defined as wages, salaries, benefits, and proprietor income. The income generated directly through the clinic activities totals

\$316,175 and the income generated directly through the hospital activities totals \$499,878. After applying the multipliers, the secondary income impacts and total income impacts are derived. The secondary income impact generated from clinic activities is estimated at \$189,705, with a total income impact from clinic activities of \$505,880. The secondary income impact generated from hospital activities is estimated at \$299,927, with a total income impact from hospital activities of \$799,805. The total income impact from a PCP on Kerr County is estimated to be \$1,302,685; of this total, secondary income of \$489,632 is generated in other businesses and industries as a result of the income directly generated by the PCP practice (\$816,053).

The PCP practice has four direct employees from clinic activities and generates 12.5 jobs from hospital activities. The clinic sector has an employment multiplier of 1.60 and results in secondary employment impact of two employees and total employment impact of six employees from clinic activities. The hospital has an employment multiplier of 1.60 and results in secondary employment impact of 8.0 employees and total employment impact of 20.5 employees from hospital activities. The total employment impact from a PCP in Kerr County is 26.5 employees; the secondary employment impact is 10.0 employees, all resulting from the total direct employment of 16.5 employees.

In summary, the economic contribution of a rural PCP is extremely important to the economy of Kerr County. One solo rural PCP generates approximately \$1.7 million in revenue, \$1.3 million in income (wages, salaries, benefits and proprietor income) and creates 26.5 jobs in the Kerr County economy. This assessment underestimates the total value of a rural PCP, as their impact on other sectors such as pharmacy and nursing homes is not included. Thus, a PCP's *economic* contributions are as important to a community as their *medical* contributions. As our nation faces a growing physician shortage, it is absolutely critical that rural leadership across the United States understand that rural communities are at risk of losing much more than the opportunity to receive local medical care.

Sources

1. National Center for Rural Health Works. "The Economic Impact of a Rural Primary Care Physician and the Potential Health Dollars Lost to Out-migrating Health Services," www.ruralhealthworks.org, January 2008.
2. American Medical Association, Center for Health Policy Research, "Socioeconomic Characteristics of Medical Practice, 1994 Edition." 1993 Spring Survey.
3. U.S. Department of Labor, Bureau of Labor Statistics 2008 Wage and Salary Estimates by Area and Occupation and Health Care Employment 1970-2008. www.bls.gov. April 2009.
4. U. S. Census Bureau, census populations and estimated populations. <www.census.gov>. April 2009.
5. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center of Health Statistics, "National Ambulatory Medical Care Survey, 2006 Summary," No. 3, August 6, 2008.
6. IMPLAN multipliers. Minnesota IMPLAN Group, Inc. <www.implan.com>. April 2009.

Costs and Revenues to Establish a Solo Rural Primary Care Physician Practice in Texas

Upon graduation, physicians are faced with a set of challenges regarding their future direction.¹ The options include becoming a staff physician at a hospital, partnering with an existing physician, or starting and operating their own practice. The decision process can be difficult if adequate preparation is not made. While these new graduates are equipped with the best medical training, many are searching for additional “real world” information to enable a successful transition to employment.

There are a lot of decisions that must be made if the physician chooses to open his/her own practice. Decisions relative to location, building (purchase, construct or lease), equipment, staffing requirements, etc. are all part of the process. Some of these decisions will require considerable time, such as securing funding for purchasing or constructing a new building. The American Academy of Family Physicians provides the following example of a timetable for starting a practice.² Additional time might be required for architectural services, permit requirements, and financing if a physician chooses new construction as opposed to leasing.³

One year before opening a practice

1. Establish personal and professional goals.
2. Select a geographic location.
3. Evaluate possibilities for recruitment assistance from hospitals.

Six months before opening a practice

1. Decide on office location and start lease negotiations.
2. Select professional advisors.
3. Decide on mode of practice.
4. Begin obtaining required licenses.
5. Seek sources of funding.
6. Determine advertising outlets.

7. Approach third-party payers to become a participating physician.

Three to six months before opening a practice

1. Apply for hospital staff privileges.
2. Begin to recruit office staff.
3. Begin to establish professional contacts.
4. Purchase/lease office furniture/equipment.
5. Select bank/professional liability insurer.
6. Develop fee schedule; establish billing system.
7. Select a computer system.

One to three months before opening a practice

1. Finalize office staff.
2. Create an official policy manual.
3. Finalize required licenses and permits.
4. Advertise in the local area.
5. Purchase needed office/clinical supplies.
6. Establish scheduling/patient recall systems.
7. Establish coverage-sharing arrangements.
8. Continue to establish professional contacts.

Once a new physician has carefully outlined personal and professional goals, the next challenge is to determine the location of the practice. The physician should make this decision based on personal reasons and (most importantly) opportunities for professional success. In particular, a community’s potential for supporting a new family physician must be evaluated. The previous section estimated the number of primary care physicians the medical service area can support. The costs and revenues associated with opening and operating a rural primary care physician practice are illustrated here.⁴

Table 1 shows the total annual practice revenues of \$416,170. **Table 2** shows the annual costs including personnel with benefits of \$260,318.

Table 1
Total Annual Revenue for a Solo Rural Primary Care Physician Practice

Initial Office Visits	766	
Avg Collected/Visit	<u>\$93</u>	
Total Collected		\$71,238
Routine Office Visits	4,338	
Avg Collected/Visit	<u>\$70</u>	
Total Collected		\$303,660
Hospital/Nursing Home Visits	536	
Avg Collected/Visit	<u>\$77</u>	
Total Collected		<u>\$41,272</u>
TOTAL Revenues		<u>\$416,170</u>

Table 2
Total Annual Costs for a Solo Rural Primary Care Physician Practice

Building Costs (if purchased)		34,889
Equipment		\$8,516
Labor	\$115,130	
Benefits (25%)	<u>\$28,783</u>	
Total Labor Cost		\$143,913
Operating Costs		<u>\$73,000</u>
TOTAL Annual Costs		<u>\$260,318</u>

Table 3 shows the total income for the primary care physician to be \$155,852. The revenues and costs are based on average revenues and costs developed through a survey of primary care practitioners in rural Oklahoma. Revenues and costs were adjusted for Texas based on inflationary factors and regional differences.

Table 3
Total Annual Revenues, Costs, and Income for a Solo Rural Primary Care Physician Practice

TOTAL Annual Revenues	\$416,170
TOTAL Annual Costs	<u>\$260,318</u>
Income*	<u>\$155,852</u>

* If revenues increased by 10 %, income could increase to \$197,469.

These revenues, costs, and income of a solo rural primary care physician are based on operating at full capacity. However, it typically will take three to five years before a primary care practice is operating at full capacity. **Tables 4** and **5** show the practice income based on three-year and five-year scenarios, respectively. In **Table 4**, based on the three-year scenario, the practice will basically have no income until the middle of the third year practice.

Table 4
Assume 3 Yrs. to Achieve Full Capacity - Annual Revenues, Costs, & Income for a Solo Rural Primary Care Physician Practice

Revenues	\$138,718	\$208,085	\$416,170
Costs	<u>\$188,061</u>	<u>\$208,051</u>	<u>\$260,318</u>
Income	(<u>\$49,343</u>)	<u>\$34</u>	<u>\$155,852</u>

In **Table 5**, the practice will take even longer to cover the losses in the first three to four years, before having any viable income. This indicates that the practice must borrow not only enough to cover capital and operating cost outlays, but may need to borrow enough to cover income shortages for several years.

Table 5
Assume 5 Yrs. to Achieve Full Capacity-
Annual Revenues, Costs, & Income for a
Solo Rural Primary Care Physician Practice

Revenues	\$83,228	\$138,718	\$416,170
Costs	<u>\$188,061</u>	<u>\$202,826</u>	<u>\$260,318</u>
Income	<u>(\$104,833)</u>	<u>(\$64,108)</u>	<u>\$155,852</u>

Communities who desire to recruit a primary care physician have often taken a very proactive role to assist with this initial cash flow problem. Many communities assist new physicians by providing cash incentives to assist with covering the initial losses. Typically, the community will require a contractual arrangement that the physician remain in the community for a certain number of years in order to receive their assistance. The assistance can be provided by the local hospital, by other local health care providers, by local businesses or industries, by local civic groups, through local fundraisers, through grants or loans, through local Chambers of Commerce support, etc. Local community support groups can be formed to determine the best possible options for their specific community needs. A new physician can lower expenses by joining a physician practice or group and these local health care practitioners will often supplement the new physician temporarily until the practice is established and generating adequate revenues.

With the current shortage of primary care physicians in rural areas and with the impending ever-increasing shortage of primary care physicians for the future, rural communities are wise to be proactive and creative in their recruitment and retention of primary care physicians. Since primary care practitioner shortages have reduced access to care for the rural areas which lead to poorer health outcomes, medical schools and state and federal agencies and programs are rising to the challenge by initiating incentive programs aimed at reducing these shortages.

Medical schools increasingly are placing students in rural rotations in an effort to introduce them to the rural practice experience. Several determinants have been identified that assist in predicting the successful placement of a graduate family practitioner in a rural area. These include: being selected for a rural preceptorship, growing up in a rural area, and attending college in a rural area. Programs are in place to increase the number of family practitioners in rural areas through grow-your-own initiatives where the brightest students with potential for medical school are fostered by rural communities throughout their studies. Then in return for the financial support and assistance, the resulting medical graduates repay the community through their service.⁵ Along with these, Rabinowitz et al. identified a strong correlation between the background and early career plans that medical students had upon entering medical school and future rural primary care practice and retention.⁶ Interviews with primary care practitioners and health care administrators were conducted in six rural areas in California which culminated in an issue brief produced by the California Policy Research Center.⁷ Their findings outlined some location considerations that primary care practitioners made. The interviewees considered:

1. financial solvency of clinics and group practices they might join,
2. competency of administrators and boards of directors,
3. presence of other primary care practitioners,
4. proximity to hospitals, and
5. relationships already established with specialists at regional referral centers.

Along with these location considerations, the interviewees found government programs such as Primary Care Health Professional Shortage Area designations, the National Health Service Corps (NHSC) and NHSC/State Loan Repayment programs, Federally Qualified Health Center (FQHC), and Rural Health Clinic designations were needed to assist with recruitment in rural areas because of insufficient financial resources available from private firms.

In summary, increasing demand for rural primary care physicians in the United States is a critical issue. Medical schools and their accreditation partners are placing emphasis on solutions to the shortage through increasing family practice graduates. State and

federal government programs are striving to assist. And, rural communities are instituting other initiatives in an effort to preserve rural health care services for their residents.

Sources




1. National Center for Rural Health Works. "Starting a Practice: Critical Economic Decisions Associated with Locating and Operating a Rural Primary Care Practice," March 2009.
2. Henry, J., Bare, J., et al., "On Your Own: Starting a Medical Practice from the Ground Up," Second Ed., American Academy of Family Physicians, 2005.
3. *Before the First Patient*. Kansas City, Mo: AAFP; 1997:10. Originally adapted from Kalogredis, VJ. Burke MR. In: Rust G, Ferris ME, eds. Augmented by Clayton L. Scroggins Associates. Inc. and Donald L. DeMuth Professional Management Consultants.
4. National Center for Rural Health Works. "The Economic Impact of a Rural Primary Care Physician and the Potential Health Dollars Lost to Out-migrating Health Services," www.ruralhealthworks.org, January 2008.
5. "Rural Communities and "Growing Your Own," Colorado Rural Health Council, June 2003.
6. Rabinowitz, H.K, J.J. Diamond, et al., "Critical Factors for Designing Programs to Increase the Supply and Retention of Rural Primary Care Physicians," *Journal of the American Medical Association*, Vol. 286, No, 9, 2001.

Texas Loan Repayment Programs

	National Health Service Corps (NHSC)	Conrad 30 J-1 Visa Waiver Program	Physician Education Loan Repayment Program (PELRP)	Dental Education Loan Repayment Program (DELRP)	Children's Medicaid Loan Repayment Program (CMLRP)
Program Description	The National Health Service Corps Loan Repayment Program (NHSC LRP) provides tax free student loan repayment assistance to primary care medical, dental and mental health clinicians in exchange for service at an approved site in a Health Professional Shortage Area (HPSA).	The J-1 visa waiver program makes recommendations for the waiver of a J-1 physician's two year return home requirement in exchange for three years of service in a designated shortage area.	The Physician Education Loan Repayment Program (PELRP) provides loan repayment funds to physicians who agree to practice in a Health Professional Shortage Area (HPSA), and provide health care services to recipients enrolled in Medicaid, and the TX Children's Health Insurance Program (CHIP).	The Dental Education Loan Repayment Program (DELRP) provides loan repayment funds to general and pediatric dentists who agree to practice in a Dental Health Professional Shortage Area (HPSA).	The Children's Medicaid Loan Repayment Program (CMLRP) provides student loan repayment assistance to physicians and dentists who provide services to children on Medicaid
Eligibility Requirements	<p>US Citizen</p> <p>Appropriate degree, license or certification, and work experience as applicable for discipline (see Application Bulletin)</p> <p>Accept Medicaid, Medicare, & SCHIP as full payment</p> <p>Not deny service based on ability to pay</p> <p>Work full-time at an eligible site</p> <p>No concurrent service obligation</p> <p>Have not ever defaulted on a federal obligation</p>	<p>Currently or formerly on J-1 visa</p> <p>Successful completion of Residency or Fellowship program</p> <p>Current unrestricted license, or have made application for license</p> <p>For additional eligibility requirements: http://www.dshs.state.tx.us/chp/Policy_Manual_updated_October_2009.pdf</p>	<p>Have full physician license with no restrictions from the Texas Medical Board</p> <p>Must provide care to Medicaid & CHIP enrollees</p> <p>No concurrent service obligation</p> <p>Have eligible outstanding student loans.</p> <p>Must be Board Eligible in years 1 – 3 and Board Certified in a primary care specialty by year 4</p> <p>Must provide four consecutive years of services in a HPSA in Texas</p>	<p>Current unrestricted license</p> <p>Work in an eligible site</p> <p>Practice in an approved specialty</p> <p>Accept Medicaid as full payment</p> <p>Have eligible outstanding student loans.</p> <p>Not deny service based on ability to pay</p> <p>No concurrent service obligation</p> <p>Must provide one year of service services in a HPSA in Texas</p>	<p>Have a license from the appropriate licensing board</p> <p>Subspecialists must have board certification or <u>be eligible to sit for the applicable subspecialty board.</u></p> <p>Have a Medicaid number before applying</p> <p>Have eligible outstanding student loans</p> <p>No concurrent service obligation</p> <p>Must agree to provide services for 4 consecutive years and meet the appropriate target number of Medicaid visits</p>

	National Health Service Corps (NHSC)	Conrad 30 J-1 Visa Waiver Program	Physician Education Loan Repayment Program (PELRP)	Dental Education Loan Repayment Program (DELRP)	Children's Medicaid Loan Repayment Program (CMLRP)
Eligible Sites	Must practice in an NHSC approved site located in a Designated Health Professional Shortage Area (HPSA)	Must practice in a designated health provider shortage area All FQHCs and FQHC look a likes qualify Site that meet the Flex 10 option requirements	Designated HPSA or MHPSA in Texas	Designated DHPSA in TX Federally Funded Community Health Center	Site location is not an eligibility criterion. However, it is used as a scoring variable. Scoring criteria are available on the DSHS web at: http://www.dshs.state.tx.us/chpr/CMLRP.shtm
Application Cycles and Deadline	Applications are currently being accepted in cycles. Contact NHSC for current application deadlines	Applications are accepted beginning the first week of September each year and close once all 30 slots have been filled	Applications are currently accepted year-round. The 2010 deadline in April 2010.	Applications are currently accepted year-round. The 2010 deadline in April 2010.	Application accepted year-round. The 2010 deadline is July 1, 2010
Service Obligation	2 year minimum. May extend for 1-year periods after initial 2 years completed	3 year minimum	4 consecutive years. May extend annually after 4 year commitment is completed	One year for state funds and two years for matching fed SLRP funds. May extend annually	4 consecutive years
Approved Specialties	Allopathic or Osteopathic Physician Family Medicine General Pediatrics General Internal Medicine Obstetrics/Gynecology Nurse Practitioner Certified Nurse-Midwife Physician Assistant General Practice Dentist Registered Clinical Dental Hygienist	All primary care and sub specialist physicians, including Psychiatry	Specialty is a ranking criteria, not an eligibility criteria Priority Specialties: Family Practice Osteopathic Family Practice Obstetrics/Gynecology General Internal Medicine General Pediatrics Psychiatry Geriatrics For specialties other than	General Dentistry Pediatric Dentistry	Allopathic or Osteopathic Physician: Any medical specialty or sub-specialty that provides services to Medicaid children. Dentists: General and Pediatric

	National Health Service Corps (NHSC)	Conrad 30 J-1 Visa Waiver Program	Physician Education Loan Repayment Program (PELRP)	Dental Education Loan Repayment Program (DELRP)	Children's Medicaid Loan Repayment Program (CMLRP)
	Mental or Behavioral Health Professional Psychiatrist (MD or DO) Clinical or Counseling Psychologist Clinical Social Worker Psychiatric Nurse Specialist Marriage & Family Therapist Licensed Professional Counselor		primary care, the Texas Department of State Health Service (DSHS) must determine there is a critical need for the applicant's specialty in the HPSA where the practice is located		
Maximum Annual Repayment Amount	\$25,000 each year for first 2 years (Total \$50,000) Year 3 \$35,000 Year 4 \$35,000 Year 5 \$25,000 Year 6 \$20,000 Year 7 & beyond \$15,000	N/A	For those with debt above \$165,000 Year 1 \$25,000 Year 2 \$35,000 Year 3 \$45,000 Year 4 \$55,000 Annual amounts pro-rated for debt below \$165,000	\$10,000 annually for up to 5 years.	Up to a total of \$140,000 Year 1 \$20 K or \$40 K Year 2 \$15 K or \$30 K Year 3 \$20 K or \$40 K Year 4 \$15 K or 30 K Annual payment amounts dependent on the number of verified Medicaid visits
Eligible Loans	Loans for higher education Not in default Not being repaid through another program	N/A	Loans for higher education; Not in default. Not have an existing service obligation; Not have an existing service obligation; Must not be from an insurance policy or pension plan Not made during residency	Loans for higher education Not in default Not have an existing service obligation; Not consolidated Must not be from an insurance policy or pension plan	Loans for higher education Not in default Not have an existing service obligation; Not consolidated Must not be from an insurance policy or pension plan
Breach of Contract	<u>Must Repay:</u> All funds received for contract period not completed plus interest	Reinstatement of two year home residency requirement	Will not receive funds, and will be removed from the program. Will not be eligible to apply for	Will not receive funds, and will be removed from the program.	Will not receive funds, and will be removed from the program

	National Health Service Corps (NHSC)	Conrad 30 J-1 Visa Waiver Program	Physician Education Loan Repayment Program (PELRP)	Dental Education Loan Repayment Program (DELRP)	Children’s Medicaid Loan Repayment Program (CMLRP)
	Penalty equal to the number of months of obligated service that were not completed, multiplied by \$7,500 The amount eligible to be recovered will not be less than \$31,000 <i>Breach of a federal contract will affect eligibility of provider to receive federal assistance in the future</i>		any other loan repayment programs in Texas	Will not be eligible to apply for any other loan repayment programs in Texas	Will not be eligible to apply for any other loan repayment programs in Texas
For Additional Information and How to Apply	 TX Primary Care Office PO Box 149347, Mail Code 1937 Austin, TX 78714-9347 (512) 458-7518 TexasPCO@dshs.state.tx.us http://www.dshs.state.tx.us/chpr/default.shtm	 TX Primary Care Office PO Box 149347, Mail Code 1937 Austin, TX 78714-9347 (512) 458-7518 TexasPCO@dshs.state.tx.us http://www.dshs.state.tx.us/chpr/default.shtm	 TX Primary Care Office PO Box 149347, Mail Code 1937 Austin, TX 78714-9347 (512) 458-7518 TexasPCO@dshs.state.tx.us http://www.dshs.state.tx.us/chpr/default.shtm	 TX Primary Care Office PO Box 149347, Mail Code 1937 Austin, TX 78714-9347 (512) 458-7518 TexasPCO@dshs.state.tx.us http://www.dshs.state.tx.us/chpr/default.shtm	 TX Primary Care Office PO Box 149347, Mail Code 1937 Austin, TX 78714-9347 (512) 458-7518 TexasPCO@dshs.state.tx.us http://www.dshs.state.tx.us/chpr/default.shtm
Additional Programs	Nursing Education Loan Repayment Program (NELP)	http://bhpr.hrsa.gov/nursing/loanrepay.htm HRSA Call Center:877-464-4772 or callcenter@hrsa.gov		Faculty Loan Repayment Program (FLRP)	http://bhpr.hrsa.gov/dsa/flrp HRSA Call Center: 877-464-4772 or callcenter@hrsa.gov

Texas Physician Workforce Data

The following information is derived from *2009 State Physician Workforce Data Book*, Center for Workforce Studies, Association of American Medical Colleges, November 2009.

Texas has:

- 42,649 active patient care physicians, or 175.3 per 100,000 population, ranking 46th among U.S. states
- 16,655 active primary care physicians, or 68.5 per 100,000 population, ranking 47th
- 13,433 active female physicians, 27.5% of total physicians, ranking 27th
- 19.8% of physicians who are under age 40, and 22.8% of physicians 60 or older with a rank of 29th

Texas ranks:

- 26th among states for the number of students enrolled in medical and osteopathic school
- 23rd in graduate medical education with the number of residents and fellows on duty in accredited programs per 100,000 population
- 30th for the number of primary care residents and fellows on duty
- 27th for the number of international medical graduates on duty in residency and fellowships
- 2nd for the number of graduates state's medical schools who are retained in-state for practice
- 7th for number of completers of state's residencies who are active physicians in-state

Table 1
Number of Family Physicians by State and Total U.S. for 2006 and 2020 Projected Need* and Projected Percent Increase

State	2006	2020	Projected Increase	State	2006	2020	Projected Increase
AL	2,248	2,912	29.5%	MT	300	413	37.7%
AK	208	302	45.2%	NE	525	666	26.9%
AZ	1,773	3,114	75.6%	NV	895	1,599	78.7%
AR	1,322	1,781	34.7%	NH	412	593	43.9%
CA	10,560	15,181	43.8%	NJ	2,680	3,551	32.5%
CO	1,421	1,989	40.0%	NM	611	851	39.3%
CT	1,118	1,447	29.4%	NY	5,856	7,345	25.4%
DE	290	416	43.4%	NC	3,206	4,777	49.0%
DC	330	346	4.8%	ND	195	242	24.1%
FL	7,035	11,497	63.4%	OH	4,031	5,031	24.8%
GA	2,919	4,302	47.4%	OK	1,463	1,896	29.6%
HI	393	530	34.9%	OR	1,105	1,595	44.3%
ID	408	615	50.7%	PA	5,253	6,652	26.6%
IL	3,723	4,747	27.5%	RI	335	438	30.7%
IN	2,077	2,691	29.6%	SC	1,867	2,639	41.3%
IA	913	1,142	25.1%	SD	236	303	28.4%
KS	825	1,064	29.0%	TN	2,650	3,692	39.3%
KY	1,844	2,409	30.6%	TX	6,661	10,091	51.5%
LA	2,249	2,879	28.0%	UT	682	1,017	49.1%
ME	438	589	34.5%	VT	201	277	37.8%
MD	1,794	2,529	41.0%	VA	2,287	3,302	44.4%
MA	1,974	2,565	29.9%	WA	1,872	2,758	47.3%
MI	3,226	4,165	29.1%	WV	893	1,098	23.0%
MN	1,542	2,153	39.6%	WI	1,696	2,268	33.7%
MS	1,631	2,102	28.9%	WY	159	211	32.7%
MO	2,099	2,764	31.7%	U.S.	100,431	139,531	38.9%

SOURCE: American Academy of Family Physicians, Family Physician Workforce Reform, 2006 (www.aaffp.org [February 2009]).

*Projected by Needs-Based Model, based on U.S. Census Bureau projections and adjusted for socioeconomic index and premature mortality rate, to achieve a ratio of 41.6 family physicians per 100,000 U.S. population.

Table 1 is from a study conducted by the 2006 Congress of Delegates of the American Academy of Family Physicians and presents the projected number of family physicians by state to meet the required ratio of 41.6 per 100,000. To achieve this target, 3,725 family physicians will need to be produced annually by the Accreditation Council for Graduate Medical Education (ACGME)-accredited family medicine residency programs and 714 produced annually by American Osteopathic Association (AOA)-accredited family medicine residency programs. **Table 4** shows the number of family physicians for 2006 for each state and the nation, projections of the number of family physicians that will be needed in 2020, and projected percent increase. For example, Texas had 6,661 family physicians in 2006 and is projected to need 10,091 family physicians in 2020, which is an increase of 51.5 percent. Nationally, the number of family physicians needs to increase from 100,431 to 139,531, which is a 38.9 percent increase.

**Table 2
Number of Active Physicians and Physician-to-Population Ratios by Selected Specialty, Selected Years**

Type of Practice	1970		1975		1980		1985		1995		2000	
	#	Ratio	#	Ratio	#	Ratio	#	Ratio	#	Ratio	#	Ratio
MDs ^{1,2}												
Gen'l/Family Practice	57,948	27.9	54,557	24.9	60,049	26.0	67,051	27.7	75,976	28.4	86,315	30.9
Internal Medicine	39,924	19.2	47,761	21.8	58,462	25.3	70,691	29.2	88,240	33.0	101,353	36.3
Pediatrics	<u>17,950</u>	<u>8.6</u>	<u>21,746</u>	<u>9.9</u>	<u>27,582</u>	<u>11.9</u>	<u>32,999</u>	<u>13.6</u>	<u>43,594</u>	<u>16.3</u>	<u>51,066</u>	<u>18.3</u>
Total Primary Care	115,822	55.7	124,064	56.6	146,093	63.2	170,741	70.5	207,810	77.7	238,734	85.5
Total All Other MDs	<u>195,381</u>	<u>93.9</u>	<u>242,361</u>	<u>110.5</u>	<u>289,452</u>	<u>125.1</u>	<u>340,349</u>	<u>140.7</u>	<u>438,212</u>	<u>164.1</u>	<u>498,770</u>	<u>178.3</u>
Total Est. Active MDs ³	<u>311,203</u>	<u>149.6</u>	<u>366,425</u>	<u>167.1</u>	<u>435,545</u>	<u>188.3</u>	<u>511,090</u>	<u>211.2</u>	<u>646,022</u>	<u>241.8</u>	<u>737,504</u>	<u>263.8</u>
DOs ⁴	NA ⁵	NA ⁵	13,977	6.4	17,620	7.6	22,483	9.3	35,720	13.4	44,731	16.0

SOURCE: MD information from: American Medical Association, Physician Characteristics and Distribution in the U.S. 2002-2003 Edition, Chicago, 2002. Also prior annual issues (formerly titled Physician Distribution and Medical Licensure in the U.S.) U.S. Bureau of the Census, Current Population Reports, Series P-25 Nos. 941, 943, 1023, 1036, 1049, 1075, and 1093; Statistical Abstract of the United States: 2001, Washington, DC; DO information from: American Osteopathic Association, 1992 Yearbook and Directory of Osteopathic Physicians; American Association of Colleges of Osteopathic Medicine, 2000 Annual Statistical Report, Rockville, MD, 2001, also prior annual reports; U.S. Bureau of the Census, Statistical Abstract of the United States, 2001 Edition, also prior annual editions.

¹ Includes physicians in Federal Service; also includes physicians in U.S. possessions. Ratios are based on total population plus civilian population in the U.S. possessions.

² MD counts for 1991 are reported as of January 1, 1992 by the American Medical Association. All other data are as of December 31. In order to maintain consistency, all MD counts in this table are reported as of December 31.

³ Excludes inactive physicians and physicians with unknown addresses.

⁴ Data by area of specialty were not available for the Doctors of Osteopathy.

⁵ NA data are not available.

In 2003 data were published by the American Medical Association that estimated the number of active physicians and the physician-to-population ratios by selected specialty. **Table 2** presents the total number of active Medical Doctors (MDs), with the primary care physician sub-specialties available, including general and family practice physicians, internal medicine and pediatrics. **Table 2** also shows the number of active Doctors of Osteopathy (DOs) and the physician-to-population ratios for all DOs, with no data available for the sub-specialties. In 1970 the trend for both MDs and DOs in general indicates fewer physicians over time to cover the increased population numbers. There were 115,822 active MD primary care physicians, with a ratio of one physician for every 55.7 persons. The ratio for all other active MD physicians in 1970 was one physician for every 93.9 persons. The ratio of active MD primary care physicians has increased steadily from one physician per every 55.7 persons in 1970 to one physician per every 85.5 persons in 2000. This indicates that the number of primary care physicians is decreasing; each primary care physician is covering a larger portion of the population. This same trend is true for the active MD non-primary care physicians (all other physicians). Overall, the ratio of active MD physicians has continually increased from 1970 to 2000, indicating the total number of physicians is not increasing at the same rate as the population. DOs have traditionally provided primary care and are experiencing the same physician-to-population trends as the active MDs.

National Health Trends

The health care sector is an extremely fast-growing sector in the United States, and based on the current demographics, there is every reason to expect this trend to continue. Data in **Table 1** provide selected expenditure and employment data for the United States.

Several highlights from the national data are:

- In 1970, health care services as a share of the national gross domestic product (GDP) were 7.2 percent and increased to 16.2 percent in 2008;
- Per capita health expenditures increased from \$356 in 1970 to \$7,421 in 2008;
- Employment in the health sector increased over 324.0 percent from 1970 to 2008; and
- Annual increases in employment from 2003 to 2008 ranged from 2.0 percent to 2.7 percent.

For the future, the U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, predicts that health care expenditures will account for 18.4 percent of GDP by 2014 and increase to 19.5 percent of GDP in 2017. Per capita health care expenditures are projected to increase to \$11,043 in 2014 and to \$13,101 in 2017. Total health expenditures are projected to increase to almost \$4.3 trillion in 2017.

Table 1
United States Health Expenditures and Employment Data
1970-2008; Projected for 2008, 2011, 2014 and 2017

Year	Total Health Expenditures (\$Billions)	Per Capita Health Expenditures (\$)	Health as % of GDP (%)	Health Sector Employment (000)	Avg. Increase in Employment (%)
1970	\$74.9	\$356	7.2%	3,052 ^a	
1980	253.4	1,100	9.1%	5,278 ^a	7
1990	714.1	2,814	12.3%	7,814 ^a	4
2000	1,353.2	4,789	13.8%	10,858 ^a	3
2001	1,469.4	5,149	14.5%	11,188 ^a	3
2002	1,602.3	5,560	15.3%	11,536 ^a	3
2003	1,734.9	5,967	15.8%	11,817 ^b	N
2004	1,854.8	6,319	15.9%	12,055 ^b	2
2005	1,980.6	6,687	15.9%	12,314 ^b	2
2006	2,112.7	7,062	16.0%	12,602 ^b	2
2008	2,241.2	7,421	16.2%	12,946 ^b	2
Projections					
2008	2,394.3	7,868	16.6%		
2011	2,905.1	9,322	17.4%		
2014	3,523.6	11,043	18.4%		
2017	4,277.1	13,101	19.5%		

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [January 2009]); U. S. Department of Commerce, Bureau of Economic Analysis (www.bea.gov [January 2009]); U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services, National Health Expenditures 1970-2008 and National Health Expenditure Projections 2008-2017 (www.cms.hhs.gov [January 2009]).

N/A - Not Available.

^a Based on Standard Industrial Classification (SIC) codes for health sector employment.

^b Based on North American Industry Classification System (NAICS) for health sector employment.

Figure 1 illustrates 2008 health expenditures by percent of gross domestic product and by type of health service. The largest health service type was hospital care, representing 31.0 percent of the total. The next largest type of health services was physician services with 21.0 percent of the total.

The number of primary care physicians practicing in the rural United States has been on the decline since the 1900s, when approximately 90 percent of all practicing physicians were general practitioners and 41.0 percent of the physicians lived in communities of less than 2,500 residents. By 1940, the density ratio between population and general practitioners fell to 89 per 100,000, and the decline continued to about 30 per 100,000 by 1970.

There was a slight increase, however, to the declining numbers after 1970 to reach about 50 per 100,000 of general practice physicians in nonmetropolitan areas even though the national physician-to-population ratio nearly doubled during the same years. A more recent study in 2005 estimates the ratio to be 31.2 family physicians per 100,000 people in the U.S. Focus on the future provision of health care in rural areas has sparked primary care physician recruitment and retention programs aimed at alleviating the shortage. With targeted interest in the number of family practitioners, medical schools have increased the number of graduates in this area. In 2000, the number of family practice graduates was estimated to be 4,015, and from 1993 to 2000, increased by 54.0 percent.

As the population in rural areas continues to be disproportionately older and the population densities in rural areas continue to decline, few incentives remain in place to attract and retain physicians.

Figure 1
National Health Expenditures as a Percent of
Gross Domestic Product
and by Health Service Type, 2008

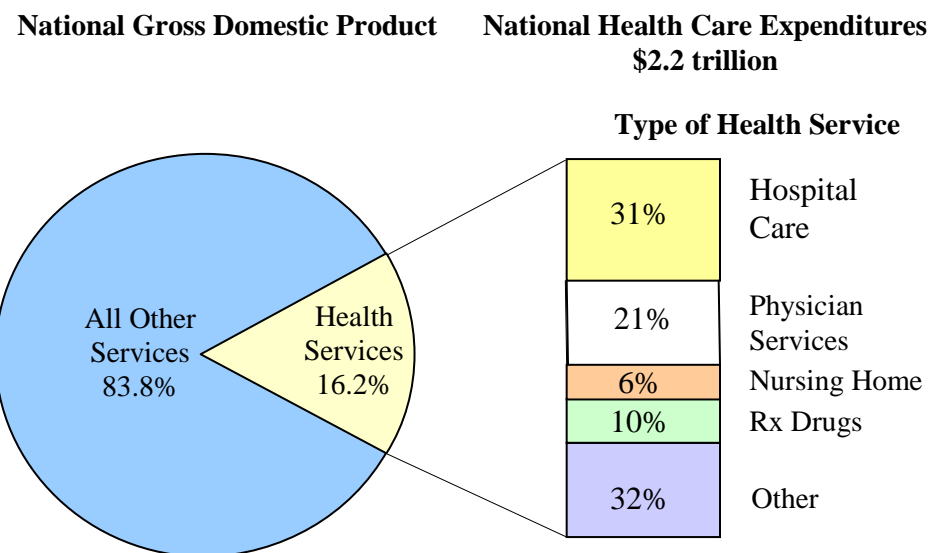


Table 2 presents data from selected years showing the proportion of urban versus rural population in the United States from 1900 to 2000. Rural population was 60.4 percent of the total in 1900, then decreased to 40.4 percent in 1950 and declined to 21.0 percent in 2000.

In summary, the national health expenditure data indicate that health care expenditures are continuing to increase every year and the U. S. Department of Labor, Bureau of Labor Statistics indicates that health care employment is continually increasing. The U. S. Census Bureau shows the continual decline of the rural population, while both the American Medical Association and the American Osteopathic Association are showing fewer primary care physicians each year to provide adequate health care coverage per person. The Congress of Delegates of the American Academy of Family Physicians⁷ projects an extreme shortage of family physicians in 2020, based on the target rate of 41.6 per 100,000 population. Nationally, the need will increase by almost 40.0 percent by 2020.

Table 2

Percent of Urban vs. Rural Population in the U. S.		
Year	Urban	Rural
1900	39.6%	60.4%
1940	56.5%	43.5%
1950	59.6%	40.4%
1960	63.1%	36.9%
1970	73.6%	26.4%
1980	73.7%	26.3%
1990	75.2%	24.8%
2000	79.0%	21.0%

SOURCE: U. S. Census Bureau, 2000 Census, (www.census.gov [February 2009]).

Health Professional Shortages Areas and Physician Scarcity Areas: A Brief Overview

This document presents basic information on the bonus payments available for **Health Professional Shortage Areas (HPSA)** and **Physician Scarcity Areas (PSA)**. These are designations by the federal government indicating a lack of health professionals to care for the area’s population. It provides those in the health care sector (physicians, health care providers, hospital administrators, state agencies, and offices/staff) a better understanding of the services, individuals, and geographic areas that are eligible for these incentive payments. This information can be used to ensure that maximum bonus payments are received or to assist organizations, hospitals, and individuals in planning the expansion of medical services

Health Professional Shortage Areas (HPSAs) are designated by the Health Resources Services Administration (HRSA) as having shortages of primary medical care, dental, or mental health providers and may be urban or rural areas, population groups, or medical or other public facilities

What are HPSA/PSA and who is Eligible to Receive the Bonuses?

Two distinct types of quarterly incentive bonuses are currently available to eligible health care providers in certain areas for specific Medicare services rendered in those areas. Known as **Health Professional Shortage Area (HPSA)** and **Physician Scarcity Area (PSA)** bonus payments, these two incentive programs were created by Congress out of concern that low Medicare payment rates could cause access problems for Medicare beneficiaries. They provide 10% and 5% bonuses, respectively, as a way to recruit and retain both primary care and specialist physicians who provide services to Medicare beneficiaries in certain qualified areas. The bonuses also

encourage providers to see patients whose primary form of insurance is Medicare. **Table 1** reflects the list of health care professionals eligible to receive the HPSA shortage designation bonus, while **Table 2** provides a list of primary and specialty care physicians eligible for the PSA bonus (along with physicians for whom the PSA bonus is not available). **Table 3** is an overview of the designations.

Table 1 Health Care Professionals Eligible for HPSA Bonus Payment *

Primary Care Physicians	Specialty Care Physicians	Not Eligible
General Practice Family Practice Internal Medicine OBGYN	All physicians other than primary care	Chiropractors Optometrists Podiatrists Dentists

SOURCE: Social Security Act, Title 18, Section 1861(r), Bureau of Health Professions. *While the physicians listed in **Table 1** are the dominant recipients of HPSA payments, other health care professions may be eligible according to the letter of the law and state licensure requirements. These include licensed Chiropractors, Optometrists, Podiatrists, and Dentists. Interested parties should check with their CMS provider.

Table 2. Physicians Eligible for PSA Bonus Payment (Includes Dos and MDs)

Primary Care Physicians	Specialty Care Physicians	Not Eligible
General Practice Family Practice Internal Medicine OBGYN	All physicians other than primary care	Chiropractors Optometrists Podiatrists Dentists

SOURCE: Medicare Prescription Drug, Improvement and Modernization Act of 2003, Section 413a.

Table 3. Overview of HPSA/PSA Designations

Program	HPSA	PSA
Types of Providers (Size of Incentive Bonus)	<ul style="list-style-type: none"> · Geographic-based <ul style="list-style-type: none"> · Primary Care (10%) · Mental Health (10%) · Dental Care (0%) · Demographic-based <ul style="list-style-type: none"> · No incentive bonus · Institution-based <ul style="list-style-type: none"> · No incentive bonus 	<ul style="list-style-type: none"> · Geographic Based <ul style="list-style-type: none"> · Primary Care (5%) · Specialty Care (5%)

SOURCE: Whitacre, B.E., Doeksen, G. A., Peton, A., and Brown, M., "Health Professional Shortage Areas (HPSAs) and Physician Scarcity Areas (PSAs) Bonus Payments for Health Care Professionals", Oklahoma Rural Health Works, February 2008.

Additional information on both HPSAs and PSAs is available from the Center for Medicare and Medicaid Services (CMS). The CMS website is www.cms.hhs.gov. The following resources address this issue in more detail:

- Centers for Medicare and Medicaid Services (CMS). (2006). HPSA / PSA (Physician Bonuses) Overview. Retrieved November 1, 2006 from the CMS website: <http://www.cms.hhs.gov/hpsapsaphysicianbonuses..>
- The Centers for Medicare and Medicaid Services (CMS). (2005). Publication 100-04 / Medicare Claims Processing Manual, Chapter 12, Section 90. Retrieved November 15, 2006 from the CMS website: <http://www.cms.hhs.gov/Manuals/IOM/list.asp>.
- Centers for Medicare and Medicaid Services (CMS). (2004). Physician Education for the Revisions to the Health Professional Shortage Areas (HPSA) Bonus Payment

Process and Implementation of the Physician Scarcity Area (PSA) Bonus Payments. Retrieved November 7, 2006, from CMS website:

<http://www.cms.hhs.gov/MLNMattersArticles/downloads/S E0449.pdf>.

- Centers for Medicare and Medicaid Services (CMS). (2005). MMA – Implementation of the Physician Scarcity Area (PSA) Bonus and Revision to the Health Professional Shortage Area (HPSA) Payment to a Critical Access Hospital (CAH). Retrieved November 9, 2006, from CMS website: <http://www.cms.hhs.gov/MLNMattersArticles/downloads/M M3790.pdf>.

Rural Health Clinics and Federally Qualified Health Clinics: A Brief Overview

The **Rural Health Clinics (RHCs)** program is intended to increase primary care services for Medicaid and Medicare patients in rural communities. RHCs can be public, private, or non-profit. The main advantage of RHC status is enhanced reimbursement rates for providing Medicaid and Medicare services in rural areas. RHCs must be located in rural, underserved areas and must use midlevel practitioners. A Rural Health Clinic is a clinic certified to receive special Medicare and Medicaid reimbursement. The purpose of the RHC program is improving access to primary care in underserved rural areas. RHCs are required to use a team approach of physicians and midlevel practitioners such as nurse practitioners, physician assistants, and certified nurse midwives to provide services. The clinic must be staffed at least 50% of the time with a midlevel practitioner.

RHCs receive special Medicare and Medicaid reimbursement. Medicare visits are reimbursed based on allowable costs and Medicaid visits are reimbursed under the cost-based method or an alternative Prospective Payment System (PPS). Ordinarily, this will result in an increase in reimbursement. RHCs may see improved patient flow through the utilization of NPs, PAs and CNMs, as well as more efficient clinic operations and reimbursement.

A Federally Qualified Health Center (FQHC) is a type of provider defined by the Medicare and Medicaid statutes. FQHCs include all organizations receiving grants under Section 330 of the Public Health Service Act, certain tribal organizations, and FQHC Look-Alikes. FQHC's are also referred to as Community Health Centers (CHCs). An FQHC Look-Alike is an organization that meets all of the eligibility requirements of an organization that receives a PHS Section 330 grant, but does not receive grant funding. Section 330 of

the Public Health Service Act defines federal grant funding opportunities for organizations to provide care to underserved populations. Types of organizations that may receive 330 grants include: Community Health Centers, Migrant Health Centers, Health Care for the Homeless Programs, and Public Housing Primary Care Programs.

There are location requirements for FQHCs. Each FQHC that receives PHS 330 grant funding must meet the requirements of that grant. Community Health Centers must serve a Medically Underserved Area (MUA) or Medically Underserved Population (MUP). To determine if your area qualifies, you can search the MUA/MUP database. If an area does not have the MUA/MUP designation they can apply for it and can put in an application for a PHS Section 330 grant while the designation is being processed. For additional information regarding the MUA/MUP designation, contact the Shortage Designation Branch: sdb@hrsa.gov or 1-888-275-4772. Migrant Health Centers, Health Care for the Homeless, and Public Housing Primary Care Programs do not need to meet the MUA/MUP restriction. FQHCs may be located in rural and urban areas. FQHCs must provide primary care services for all age groups. FQHCs must provide preventive health services on site or by arrangement with another provider. Other requirements that must be provided directly by an FQHC or by arrangement with another provider include dental services, mental health and substance abuse services, transportation services necessary for adequate patient care, and hospital and specialty care.

SOURCE: Rural Assistance Center, Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services (www.raconline.org).

National Health Service Corps: A Brief Overview

National Health Service Corps (NHSC) is committed to improving the health of the Nation's underserved, one community at a time. NHSC brings together communities in need with caring health professionals and supports their efforts to build better systems of care. Some 50 million people reside in communities without access to primary health care due to financial, geographic, cultural, language, and other barriers. These people are medically underserved and can be found across the nation. Today, millions of underserved people receive the health care they need because of the NHSC.

Clinicians in NHSC practice where they are needed most. The communities NHSC serves are as widespread and varied as the landscape of our nation. NHSC can be found in inner cities, farm towns, mountain villages, and migrant communities. NHSC recruits health professionals committed to serving underserved populations, wherever they are.

NHSC provides medically underserved communities with the assistance needed to recruit and retain caring, culturally-competent health professionals. NHSC offers:

- Health professional recruitment and retention assistance, including site development and preparation.
- Assistance with facilitating focused community dialogue to mobilize local resources.
- Linkage to academic institutions and training programs.

- Technical assistance in the area of practice management to serve a diverse population.
- Networking opportunities to identify resources to improve the health of the community.
- Linkage to innovative health care services.

NHSC provides students and clinicians with the support and assistance they need to fulfill their career goal of helping communities in need.

NHSC offers:

- Meaningful student and resident opportunities to work on interdisciplinary health care teams, or community projects, in underserved areas.
- Competitive scholarship and loan repayment programs for students and clinicians committed to serving the neediest communities (more information below).
- Job placement assistance in underserved communities.
- Support for students and clinicians who commit to improving the health of the Nation's underserved.

SOURCE: The National Health Service Corps, Department of Health and Human Services, Health Resources and Services Administration (HRSA) (<http://nhsc.bhpr.hrsa.gov>) [May 2009]