Council for Education Policy,
Research and Improvement

Medical Education Needs Analysis

November 2004

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CHARGE

In a letter dated March 29, 2004 to the Council for Education Policy, Research and Improvement (CEPRI), Carolyn K. Roberts, Chair of the Board of Governors, requested that CEPRI "define the parameters of a model to be used to quantify the adequacy of the State's physician workforce; project the extent to which a physician shortage exists and to develop cost/benefit estimates of various alternatives to produce the required number of additional physicians including but not limited to: expanding the capacity of existing medical schools, creating new medical schools, expanding or creating new residency programs and other incentive programs to attract physicians to Florida.".

The letter called upon CEPRI to "define the parameters of the model in collaboration with an advisory committee including representatives of the Council of Florida Medical School Deans, the Graduate Medical Education Committee, and representatives from other interested public universities. Upon completion of the definition of the model's parameters, the model shall be developed in collaboration with The Bureau of Economic and Business Research of the University of Florida, under contract with the Department of Education."

STUDY ACTIVITIES

Under the direction of CEPRI Chairman Dr. Akshay Desai, an advisory committee was convened to complete the tasks outlined in the Board of Governors' charge. The committee met in June, August, and September of 2004. Over the course of three meetings, a matrix of parameters to assess physician workforce needs was developed. Additionally, various alternatives to address the need for additional physicians were discussed. The recommendations contained within this report are a product of the deliberations of this advisory committee. (For a complete list of advisory committee members, please see **APPENDIX A**.)

OVERVIEW

The report is structured in two sections, each responding to the charge outlined by the Board of Governors. In the first section, **Assessing the Adequacy of the Physician Workforce**, information is provided on methods to assess the need for additional physicians, the data concerns that Florida faces in adequately assessing this need, and the parameters that should be considered in the development of a model to assess need. The second section, **Alternatives to Address a Physician Workforce Shortage**, highlights three basic alternatives: expansion of medical school capacity either through expansion within existing schools, regional campuses, or new medical schools; expansion of residency programs; and using incentives to attract additional physicians. Recommendations are provided at the close of each section providing policy direction and guidance.

ASSESSING THE ADEQUACY OF THE PHYSICIAN WORKFORCE

Background

Determining a need for additional physicians has been a difficult task, depending heavily on the approach used to assess need. Two general approaches to assess the need for additional physicians have been employed. The first method assesses past levels of the use of physicians' services, tries to identify the forces that influenced these levels, and then predicts the future need by projecting these forces forward. This approach, exemplified by the work of Cooper et al., holds that the economy is the major factor affecting the demand for physicians, predicting that demand for physicians will grow with population and the Gross Domestic Product per capita.[1] The second approach used to assess adequacy establishes an optimal number of physicians needed to take care of a population in a properly organized health care system. The prediction of demand using this approach is based on a physician-to-population benchmark.[2] Whether or not a shortage exists, using this approach, depends heavily on how and where the benchmark is set.

In its 1999 study, *An Assessment of the Adequacy and Capacity of Florida's Medical Education System*, MGT of America employed an approach to assessing need similar to the first method discussed above, assuming that as the state's per capita income rises, the demand for physician services will increase. To project future demand for physicians, the study argues, a model should take into account the need to replace physicians leaving practice due to retirement or other reasons; the growth in demand attributable to population growth, an aging population and income growth; and the number of new medical graduates entering the workforce each year. Instead of focusing on the overall physicians-to-population ratio for comparison, this analysis focused on an age-weighted population given that Florida has a much greater proportion of older citizens than the average state, and older citizens have a considerably greater incidence of physician visits than the average of the overall population. Their analysis concluded increased demand for health care results from an increased ability of the people to purchase health care services and from the aging of the population.

The State of Texas has completed various comprehensive needs assessments for professionals, including physicians. This assessment was last done for physicians in 2002. The Texas Higher Education Coordinating Board (THECB) builds a framework for analysis through two questions: (1) Is there an increasing need/demand for services? and (2) Is there increasing demand from people who want to be physicians? To answer these two questions, THECB employs a methodology similar to the second approach discussed earlier. Comparing current and a projected physician-to-population ratios to national averages, the top ten most populous states, and industry benchmarks (e.g., the American Medical Association), THECB is able to respond to the first question. Additionally, THECB examines the source of the physician pool – are they trained in-state, out-of-state, or internationally? The regional distribution of physicians and the reasons for the practice location of physicians are also considered to assess need. To assess the demand from people who want to be physicians, THECB examines the relationship between the number of baccalaureate degrees produced (i.e., the potential pool of medical students) and the availability of slots at Texas medical schools, as determined by the admissions rates.[3]

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[1] Blumenthal, David. 2004. "New Steam from an Old Cauldron—The Physician-Supply Debate." *The New England Journal of Medicine* 350(17):1783-1784.

[2] Ibid, p. 1784.

[3] Texas Higher Education Coordinating Board. 2002. *Projecting the Need for Medical Education in Texas.*

Quality and Availability of Data

In Florida, attempts to assess the adequacy of the physician workforce have been hindered by the lack of available, reliable data. Under current law (Chapters 456, 458, 459, 460, and 461, F.S.) medical licensure applicants are required to submit specified information as a prerequisite to licensure. Additionally, Section 456.039, F.S., created the Practitioner Profile, under which each licensed medical physician, osteopathic physician, chiropractic physician, and podiatric physician is required to submit specific data to the Department of Health that is then compiled and made available to the public. Data included in this Practitioner Profile are information on graduate medical education; hospitals at which the physician has privileges; the address at which the physician will primarily conduct his or her practice; specialty certification; year the physician began practice; faculty appointments; a description of any criminal offense committed; a description of any final disciplinary action taken within the most recent 10 years; and professional liability closed claims reported to the Office of Insurance Regulation.

Though the information collected seems vast, there are considerable concerns with the data quality, and there is other information of use to adequately assess the physician supply in Florida that is not collected (see **Parameters of a Model** section below). Most importantly, much of the data is based on self-reported responses to questionnaires. Most of the information is not standardized for analysis nor verified for accuracy. The burden of verification for the Practitioner Profile information is placed on a physician, who has thirty days to correct any factual inaccuracies. Given that the data contained in the Practitioner Profile is collected at the point of initial licensure, much of the information that is subject to change at any time (e.g., practice locations) is not likely to be accurate unless a physician initiated an update to his/her information.

With no verified, centralized repository for statewide health workforce data currently available, the Council of Florida Medical School Deans, the Graduate Medical Education Committee, and the Community Hospital Education Council have endorsed the creation of a state-level entity that could serve as the official state repository for health professions workforce supply and demand data. The repository would serve as the official statewide source of valid, objective and reliable data used to make policy decisions on such issues as: capacity; the mix of specialists; the geographic distribution of physicians; and the role of medical education in the production, retention, practice specialty area and practice location of physicians. In lieu of relying on physicians to initiate any update or verification of their data, surveys of physicians (or a random sample of physicians) would be administered between the point of initial licensure and licensure renewal for data verification purposes. The Florida House of Representatives estimated that the start-up costs for the database would be $935,822 if all 35 health professions licensed by the Department of Health were included in the database. If the database only included the five health professions contained within the Practitioner Profile, a cost of approximately $200,000 per year was estimated.

Parameters of a Model

Because of concerns over the quality and availability of data, the advisory committee and staff determined that the development of a model to accurately assess the adequacy of the physician workforce in the state was not possible at this time. However, the advisory committee developed a framework for such a model once the necessary data became available. The committee identified a

series of supply and demand factors that should be taken into account to accurately assess the adequacy of the physician workforce. The supply factors are: demographics, physician practice status, specialty, place of education and training, quality of care and safety of practice, service delivery concerns, generational changes, and public perception. Factors identified reflecting demand are population growth, economic indicators, and issues of the "pipeline" into medical education.

Demographics

Any projection of the physician workforce supply in Florida must take into account various demographic features of the overall physician population. Though, as reported in the American Medical Association's (AMA) *Physician Masterfile*, Florida ranks near the top nationally (4th) in terms of the number of physicians, a closer examination by demographic factors indicates certain potential shortages exist.

Florida has the oldest physician workforce in the nation. Twenty-six percent of Florida's doctors are over the age of 65, compared to 18 percent of U.S. physicians. Only 10 percent of Florida's physicians are under the age of 35, compared to 17 percent nationally. Additionally, though Florida has a very ethnically diverse population, minorities are underrepresented in the physician workforce. Though the percentage of Hispanic doctors closely follows the percentage of the state's Hispanic population (16 percent compared to 18 percent), African-Americans are significantly underrepresented among the physician workforce in Florida, representing only 3 percent of Florida's doctors. Also, the distribution of physicians by gender is a factor that needs to be considered. Females constitute a greater percentage of medical school graduates than in the past. The growth of women in the medical profession has some consequences for the overall supply of physicians in Florida given the different workload experiences between genders. For example, a study on the role of gender on the physician workforce in Canada showed that women practice at a lesser rate than men at younger ages (30 to 50). However, after age 50 women practice at a higher rate than male physicians. This changing dynamic further illustrates the need to look beyond absolute numbers of physicians and identify the indicators that impact the actual number of actively practicing physicians.

The proposed Florida Health Care Practitioner Workforce Database (referred to as the **Physician Workforce Database**) includes various data elements that would assist in providing a clearer picture of the overall physician workforce in Florida. Namely, the database calls for the collection of demographic data from licensed physicians within the state, Florida medical school graduates, and completers of Florida graduate medical education programs. Currently, licensure data from the Board of Medicine and the Board of Osteopathic Medicine and the practitioner profile data collected by the Department of Health provide basic demographic indicators for licensed physicians. However, due to the non-standardized nature of this self-reported data, concerns over data quality exist.

Physician Practice Status

Any assessment of the adequacy of the state's physician pool requires a focus on physicians actively involved in patient care. Since the adequacy of the physician population is determined by the health care needs of Florida's residents, limiting any projection of need to only those physicians likely to be involved directly with patients is warranted. Currently data from the AMA *Physician Masterfile* indicate that 75 percent of Florida's physicians are involved in direct patient care. This designation

is determined based on self-reported information provided by allopathic physicians to an open-ended questionnaire. Based on AMA analysis, physicians who are involved in administrative activities, medical education, medical research, and other non-patient medical activities are excluded from the "direct patient care" category. This identification, though, does not quantify the scope of practice or hours of practice.

Just as data on demographic factors may provide a clearer indication of Florida's physician workforce needs, information on the level by which Florida's doctors actively practice provides a more accurate picture of the physician workforce in the state. Currently, data on the status of a physician's license—whether it is active or inactive—is available. The vast majority of physicians in state hold active licenses. However, holding an active license does not necessarily mean that a physician is actively practicing. Given Florida's high number of retirees and high percentage of physicians over the age of 65 (26 percent of all Florida physicians), it is highly probable that many of those physicians who hold active licenses are in fact retired, or not involved in patient care on a full-time basis.

Data elements contained within the Physician Workforce Database would provide a more complete indication of a physician's practice status. The database would require information on the percentage of time physicians are involved in patient care, the expected changes in the amount of patient care or services within the licensure renewal period (i.e., two years), and an indication of the approximate date of expected retirement.

Specialty

Florida's relatively high ranking nationally in terms of the number of physicians (4^{th}) and ratio of physicians per 100,000 population (16^{th}) masks shortages that may exist by medical specialty. Limited data from the AMA *Masterfile* indicates that approximately 35 percent of allopathic physicians in Florida practice primary care (family/general practice, general internal medicine, general pediatrics, and OB/GYN). That percentage is somewhat below the national average of 40 percent.

Currently, no central data source exists in Florida for all medical specialties. Both the allopathic and osteopathic medical licensing boards require applicants of initial licensure to indicate whether or not they are certified by a specialty board. However, there are limitations to the data currently collected. First, under current licensure application requirements, those who are not certified by a specialty board are not required to identify a specialty area, though they may practice in a particular specialty. Second, specialty information, if identified, is provided through an open-ended format, leading to wide variation in the way the data is reported and interpreted. Additionally, if specialty information is identified, current licensure applications do not require information on whether specialty board re-certification is required, and by what date that re-certification must take place.

The Physician Workforce Database would provide an objective statewide source of data on medical practice by specialty. The database would provide an indication of a medical licensure applicant's principle area(s) of practice; date of initial board certification; and the date of most recent re-certification. This would provide a more complete picture of the field in which a physician is delivering services.

Knowing how, where, and in what field physicians are providing services will allow state policymakers to more accurately gauge areas of critical shortage. Results from a Florida State University College of Medicine statewide survey of rural physicians showed that the delivery of services is changing dramatically, due to practice environment conditions (e.g., high cost of malpractice insurance). The overall number of physicians leaving practice is not changing, however, for some specialties the number of physicians practicing is changing dramatically. For example among all OB/GYNs found delivering services the previous year, 50 percent had stopped providing services in that field the next year.

The database would provide additional information on specialty areas pursued by Florida's medical school graduates. Data on the types of residency programs graduates plan to enter would be more easily accessible, providing state policymakers with a better indication of what kind of doctors the state is producing.

Place of Education and Training

One approach to dealing with a physician workforce need is to attract more trained physicians practicing in other areas to Florida. The state currently imports the vast majority (approximately 80 percent) of all its physicians from other states and countries.

Available data on a licensed physician's medical school, its location, and the location of graduate medical education training are self-reported responses by physicians to an open-ended questionnaire. The information is not provided in a standardized fashion by medical licensure applicants, resulting in wide variation in the manner by which Department of Health data entry operators enter and interpret these data. This leaves government analysts and policymakers with an unclear and incomplete picture as to where Florida physicians were educated and trained. The Physician Workforce Database calls for the use of standard codes to prevent misidentification of the medical school attended. Additionally license applicants would be required to indicate the state and country of residency training and the location of previous employment, if applicable.

Quality of Care and Safety of Practice

A consequence of Florida's high dependence of "imported" physicians is a concern over the quality of care and safety of practice of the state's physician population. International Medical Graduates (IMGs) account for 35 percent of Florida's physician workforce, with a greater dependence on IMGs in certain areas of the state (e.g., 43 percent in South Florida). As with specialty and demographics, Florida's relatively high ranking on the overall number of physicians per population masks the quality of training of the physicians.

Continuing the process of attracting IMGs to meet the demand for additional physicians in Florida faces two primary challenges. First, medical education and training is inconsistently regulated in foreign countries. Licensure requirements serve as an assurance that all practicing physicians have the proper education and training, regardless of country of origin. In fact, many additional requirements are placed on IMGs in order to maintain quality control of the medical profession. For example, though an International Medical Graduate may have completed a residency training program abroad, an IMG must undertake U.S. medical residency training in an Accreditation Council for Graduate Medical Education (ACGME) approved program. Also, International Medical

Graduates must pass an English language competency test and a Clinical Skills Assessment (CSA) examination. Some feel that these are artificial barriers in the way of licensure and call for a relaxation of licensure requirements to provide for more physicians. In Florida, licensure requirements are already less stringent than other states in terms of training requirements; for example, only one year of residency training is required for U.S. medical graduates and two years for IMGs (458.311, F.S.) rather than the traditional three years. To guard against potential concerns over quality of care, any relaxation of licensing requirements in Florida is strongly discouraged.

In addition to the stringent licensing requirements that International Medical Graduates face, there are visa restrictions that hinder the ability of IMGs to settle in the U.S. and practice. An IMG who is not a legal permanent resident of the U.S. is required to have a visa to train in a U.S. medical residency program. IMGs generally use J-1 exchange visitor visas which require a return to the IMG's home country following residency training for a period of two years before being able to return to the U.S. to practice. Some IMGs have used H-1B visas which provide broader opportunities for practice in the United States. However, H-1B visas have restrictions as well. An additional barrier to IMGs meeting the physician workforce demand in the U.S., and in particular Florida, is the cap on these visas that has occurred since the terrorist attacks of September 11, 2001. In FY 2000-2001, H-1B visas were capped at 195,000 for all foreign-trained professionals, not only physicians. In FY 2004-2005, the number was capped at 65,000 visas, and that cap was reached by the first day of the fiscal year (October 1, 2004).

Recent activity in Congress has sought to alleviate the growing concerns over visa restrictions for foreign-trained physicians. On October 6, 2004, the House of Representatives approved legislation (H.R. 4453) extending the J-1 visa waiver program for two years. Additionally, the legislation allowed states to waive the requirement that IMGs must return to their home country for a period of two years following U.S. training. In lieu of returning to their home country, IMGs would be required to provide health care in underserved areas for a minimum of three years.

Despite these recent changes, due to increased restrictions on both licensure and immigration, continuing to meet Florida's physician workforce needs with foreign-trained medical graduates faces growing problems. To effectively quantify Florida's physician workforce needs data on the number of IMGs and future projections given these changing conditions is vital. The Physician Workforce Database would require medical license applicants to indicate the country of education and training.

Service Delivery Concerns

The effect of environmental restraints on the service delivery of medicine must also be considered in an assessment of the adequacy of the physician workforce. Namely, there are two major concerns in Florida: malpractice insurance costs and the geographic distribution of physicians within the state.

Concerns over issues of malpractice insurance costs hinder the ability of doctors to locate in Florida, practice certain specialties (e.g., OB/GYN), and be trained in certain specialties. A nationwide survey of medical students conducted by the American Medical Associations's Division for Market Research and Analysis found that 50 percent of respondents indicated the current medical liability environment was a factor in their specialty choice, and 39 percent said that the medical liability environment was a factor in their decision about a state in which they would like to complete residency training. Florida has some of the highest professional liability insurance (PLI) rates in the

nation. Any depression in the number of medical students choosing a residency program in Florida due to this consideration has negative consequences for the supply of doctors in the state, given that a majority of medical residents remain in-state to practice after completing a residency program. In 2003, the Florida Legislature placed a cap on non-economic malpractice damages. However, it is too early to determine if this will have any impact on lowering insurance premiums and changing the medical liability environment in Florida. Any projection of physician supply must account for the barriers medical liability may place on the state in attracting more physicians and the potential consequences of policies that attempt to change the liability environment of the state.

A second factor to consider is the geographic distribution of physicians within Florida. Issues continue to remain about the availability of doctors in underserved (e.g., rural and inner-city) areas. The federal government identifies areas as primary care Health Profession Shortage Areas (HPSAs) if an area contains less than one primary care physician per 3,500 individuals based on clearly recognizable boundaries (e.g., county lines). As of 2001, Florida has thirteen counties and multiple geographic areas and special populations that were designated by the federal government as HPSAs. Approximately 14 percent of Floridians live in a HPSA.

Clearly, additional physicians are needed in underserved areas. However, better data to quantify the magnitude of the shortage in these areas would be provided by the Physician Workforce Database. An increasing number of physicians practice in more than one location. Physicians may split their time between an urban hospital and rural satellite offices, for example. The data currently collected by medical licensing boards does not provide any insight as to the multiple locations physicians may practice and the amount of time devoted to practice at each location. As proposed by the database, information on secondary practice locations(s) and the approximate percentage of time spent in practice at each location would be collected. This would provide a better indication of the physician coverage of different geographic regions and socio-economic populations of the state.

Generational Changes

Another factor to consider when assessing the adequacy of the physician population is generational changes in the manner by which physicians practice. There are vast lifestyle changes between the younger generation of physicians and their predecessors. For example, younger students/residents are less likely to work long hours and more likely to change careers. When assessing need, it is important to consider how long today's medical students are going to be practicing physicians before they decide to go into a different career. Anecdotal evidence indicates that many of the applicants to MBA programs at one Florida public university are physicians over the age of 50 looking for a lifestyle change. To accurately gauge this concern it is imperative to continue to track physicians by age group and collect follow-up information on whether younger physicians are limiting their work hours or pursuing, or planning to pursue, other careers.

Public Perception

Much of the focus on quantifying the adequacy of the supply of physicians in Florida has been placed on the objective elements discussed above. However, in a democratic society one cannot discount the subjective element of public perception on assessing the need for additional physicians. Having a medical school or teaching hospital in one's community has great appeal to a local area. There is a heightened sense of local pride and an increase in prestige for local institutions. It is

debatable whether such perceptions should be taken into account in assessing need, especially when such perceptions are near-impossible to quantify.

Population Growth

Florida is one of the fastest growing states in the country. The state's overall population has increased approximately 222 percent from 1960 to 2000. Projections show that Florida's population will continue to grow by about 9.5 million residents between 2000 and 2030 (approximately a 60 percent increase). The projected growth in population is especially pronounced for those aged 65 and over, those most likely to be in need of medical services. From 2000 to 2030, the population of the elderly in Florida is projected to grow by 124 percent, the largest percent increase among all the age groups. The elderly population (aged 65 and over) in Florida is expected to rise by 3.5 million residents between 2000 and 2030.

Projections for Florida's Population Aged 65 and Older, by Region
2010 to 2025

	Population Growth	
	Numeric Change	Percentage Change
Southeast	457,051	67.0%
East Central	418,921	81.4%
Tampa Bay	373,830	64.2%
Treasure Coast	302,800	68.1%
Southwest	282,757	66.7%
Northeast	166,149	81.5%
Withlacoochee	143,942	66.9%
Central	105,176	61.2%
West Florida	88,106	65.5%
North Central	41,494	63.8%
Apalachee	35,219	68.5%

Source: Florida Statistical Abstract, 2003
Regions
Southeast -- Broward, Miami-Dade, Monroe
East Central -- Brevard, Lake, Orange, Osceola, Seminole, Volusia
Tampa Bay -- Hillsborough, Manatee, Pasco, Pinellas
Treasure Coast -- Indian River, Martin, Palm Beach, St. Lucie
Southwest -- Charlotte, Collier, Glades, Hendry, Lee, Sarasota
Northeast – Baker, Clay, Duval, Flagler, Nassau, Putnam, St. Johns
Withlacoochee -- Citrus, Hernando, Levy, Marion, Sumter
Central -- DeSoto, Hardee, Highlands, Okeechobee, Polk
West Florida -- Bay, Escambia, Holmes, Okaloosa, Santa Rosa, Walton, Washington
North Central -- Alachua, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Madison, Suwannee, Taylor, Union
Apalachee – Calhoun, Franklin, Gadsden, Gulf, Jackson, Jefferson, Leon, Liberty, Wakulla

Differences also exist in population growth figures for the older population by region of the state. For example, the East Central (including Orlando) and the Northeast (including Jacksonville) areas of the state are projected to see the greatest percentage increase in the elderly population between 2010 and 2025 (about 81.5 percent growth). In terms of numbers, Southeast Florida (Miami-Dade, Broward, and Monroe Counties) will see the largest increase in the elderly population between 2010 and 2025, 457,051 residents. Given such growth in certain segments of the population, namely the elderly, it is clear that there will be an increased demand for medical services in the foreseeable future.

Economic Indicators

Studies have shown (e.g., Cooper et al.) that there is a high correlation between the size of the economy (as measured by the Gross Domestic Product) and the number of physicians in the United States. Data indicates that as GDP grows, the number of physicians increases. This has lead to causal links being established between the nation's wealth, its demand for health services, and the demand for health professionals to deliver those services.

Percentage Growth in Real Gross State Product (GSP) for the Five Most Populous States, 1992 to 2001

California	39.0%
Texas	51.4%
New York	30.6%
Florida	42.1%
Illinois	34.5%

Note: Percentage change reflects change in dollar amounts after controlling for inflation

As the table above shows, Florida's Gross State Product, the state measure analogous to the Gross Domestic Product, increased by 42.1 percent from 1992 to 2001. Among the five most populous states, only Texas has seen a larger growth in their GSP, after controlling for inflation. With Florida's economy growing at a steady clip, increased demands for health care services are likely to follow, given the correlations found at the national level.

The "Pipeline" into Medical Education

Questions have arisen as to whether there are enough "qualified" Florida applicants to fill any expansion in medical school seats. Determining whether an applicant is qualified to enter medical school varies greatly depending upon criteria established by a particular school. However, studies have demonstrated that undergraduate science grade point averages (GPAs) and Medical College Admission Test (MCAT) scores are strong predictors of standardized test performance (initial licensure exams) during medical school (e.g., Basco et al. 2002).

Qualified Florida Resident Applicants to U.S. Medical Schools

Year	Total Florida Applicants	Qualified Total
2003	1,505	452
2002	1,515	458
2001	1,353	387
2000	1,428	384
1999	1,505	383

Source: University of Miami School of Medicine analysis using American Association of Medical Colleges (AAMC) data

"Qualified" refers to Florida residents with a minimum 3.3 undergraduate GPA in sciences; a minimum 3.4 undergraudate cumulative GPA; a minimum score of 8 each on the verbal reasoning, physcial sciences, and biological sciences sections of the MCAT (a minimum composite score of 24).

An analysis by the University of Miami School of Medicine (UMSM) attempted to estimate the number of qualified Florida medical school applicants over the past five years (1999-2003). Using data from the American Association of Medical Colleges (AAMC), UMSM used the following criteria to determine whether an applicant was qualified: (1) undergraduate science cumulative GPA of 3.3 or higher; (2) a cumulative undergraduate GPA of 3.4 or higher; and (3) a composite MCAT score of 24 or higher. These criteria were based on the average profiles of Florida applicants to medical school in 2003 (3.37 science GPA; 3.48 cumulative GPA; 26.4 composite MCAT score). Using this threshold, of the 1,505 Florida applicants to a medical school in the U.S., only 452 were deemed qualified.

This analysis does not take into account the subjective elements of medical school admission. In addition to GPA and MCAT scores, personal statements, life experiences, letters of recommendation, and on-site interviews are considered when medical schools decide on admissions. Therefore, it is likely that there are more "qualified" students than the numbers identified in the table above. In fact, of the 1,505 Florida resident applicants to any U.S. medical school, 636 students were accepted to a medical school, 377 of which matriculated in Florida. Though the figures above may underestimate the number of qualified Florida applicants to medical school, the data do indicate that as medical seats are expanded, through current enrollment growth and the new medical schools at FSU and the branch of the Lake Erie College of Osteopathic Medicine in Bradenton, the pool of qualified Florida applicants appears to be shrinking. Efforts to improve pre-medical education at the undergraduate level may be needed to increase Florida's potential pool of medical students.

Policy Recommendations

Council for Florida's Future
Research and Improvement

POLICY RECOMMENDATION 1

The Legislature should enact the Florida Health Care Practitioner Workforce Database, as outlined in House Bill 1075 and Senate Bill 1154 from the 2004 Legislative Session. The database would serve as the official statewide source of valid, objective and reliable data on the physician workforce.

POLICY RECOMMENDATION 2

As more reliable data becomes available, state policymakers should develop a model to quantify the adequacy of the state's physician workforce taking into account the following factors: demographics, physician practice status, specialty, place of education and training, quality of care and safety of practice, service delivery conditions, generational changes, public perception, population growth, economic indicators, and issues of the "pipeline" into medical education. Specific measures for the identified factors are outlined in Appendix B.

ALTERNATIVES TO ADDRESS A PHYSICIAN WORKFORCE SHORTAGE

Though the actual shortage of physicians cannot be estimated accurately at this time, all indications are that a shortage either does or will exist in Florida in the near future. Given the low number of residency positions per 100,000 state population in the state (Florida ranks 46th), Florida is at a disadvantage in producing more trained physicians that are likely to remain in-state to practice. Given that Florida relies heavily on International Medical Graduates (IMGs) to meet the demand for physicians in the state, Florida faces a potentially critical problem as stricter licensure requirements and tighter immigration laws in the post 9/11 world are likely to limit the supply of IMGs. Given that Florida is one of the fastest growing states in the country and a significant percentage of the state's population is over 65 and growing, the state faces an ever-growing demand for healthcare services. Given that Florida has the oldest physician population in the country, a potential problem exists in replacing these older physicians as time progresses. The consensus of information and advisory committee testimony agrees that a physician shortage does or will exist. Its magnitude cannot be quantified at this time. However, a full discussion of the alternatives available to deal with this immediate or impending shortage is warranted. There are three basic approaches available to address the physician shortage in Florida: expanding medical school capacity, expanding residency programs, and using incentives to attract additional physicians to the state.

Expansion of Medical School Capacity

Numerous organizations, such as the Center for Health Workforce Studies and the Council on Graduate Medical Education (COGME), are recommending that existing medical schools increase there enrollment by 15 percent by 2015 to contend with the current and/or impeding physician shortage. Florida currently ranks 37th nationally in the number of medical school students (both allopathic and osteopathic) per 100,000 state population. In order to reach the national ratio of allopathic medical school students per state population, Florida would need to increase its capacity by about 2,700 students. Increasing medical school capacity alone, without the expansion of training opportunities, may not increase the number of physicians necessary to alleviate a shortage given that physicians are more likely to practice where they were trained, rather than where they graduated from medical school. Nevertheless, given the impending shortage of physicians, the national call to increase medical school capacity, and Florida's relatively low ranking on the number of medical school slots per state population, the expansion of medical school capacity—either through expansion at existing sites, regional campuses, or new medical schools—is an alternative to consider.

Expansion through Existing Medical Schools

Ability to Expand and Cost

Florida's medical schools provided information on their ability to expand the capacity of their schools. Most of the medical schools have begun to address the need for expanding capacity by increasing the number of first-year seats in the most recent year. With a combination of renovation and new construction, Florida's established medical schools estimated that a total of 192 new first-year seats could be added by 2007-08. In recent years, medical school capacity has increased in Florida with the creation of the Florida State University College of Medicine, the opening of a branch campus of the Lake Erie College of Osteopathic Medicine in Bradenton, and the formation

of a partnership between the University of Miami and Florida Atlantic University to educate first and second-year medical students. As the chart below indicates, once these new opportunities—expansion at established schools and full enrollment at the new schools—are in place, first-year medical school capacity in Florida will equal 1,084 seats.

Total Number of First-Year Students in 2007-08, All Existing Florida Medical Schools

If Expansion Occurs	
UF	180
USF	200
UM	172
NSU	230

Current Enrollment Plan	
FSU	120
LECOM	150
UM/FAU	32

Total	1,084

Notes: The Lake Erie College of Osteopathic Medicine (LECOM) in Bradenton opened in Fall of 2004 with an incoming class of 150. FSU's start-up enrollment plan calls for an incoming class of 120 starting in 2005-06. Full enrollment of 480 at FSU is estimated for 2008-09. The UM/FAU partnership began in Fall 2004, where first and second year UMSM students are educated at FAU. Plans call for first and second year classes of 32 students each. Sixteen first year students were enrolled in Fall 2004.

In order to reach this threshold of new seats through expansion at established schools, capital and operational costs are required. The following paragraphs provide estimates from UF, USF, UM, and NSU on the expenses necessary to support any expansion. The 2003-04 first year enrollment at the University of Florida College of Medicine was 120 students, reflecting a 30 student increase to offset the number of students who formerly transferred from the one-year UF/FSU Program in Medical Sciences (PIMS). UF indicated that they could expand the number of first year seats only if renovation or new construction was pursued. With renovation, UF could increase the number of first year students by 15, for a total of 135 students beginning in 2005-06. If new construction is pursued, forty-five students could be added beginning in 2007-08, for a total of 180 first year students if both renovation and new construction occurred (a growth rate of 50 percent). UF estimates capital costs of $2.5 million to renovate existing space, accommodating the additional 15 students. New construction of a College of Medicine Education Building is estimated to cost $29.8 million.

As with UF, the University of South Florida College of Medicine's first year class was 120 students in 2003-04, reflecting a 20 student increase beginning that year. USF indicated that capacity could not be increased beyond the 20 new students, unless renovation and new construction occurred. If such capital improvements were made, USF could accommodate an additional 80 first year students beginning in 2007-08. The total capital costs to meet this goal are estimated at $5.9 million for renovation and $19.02 million for new construction, a total capital cost of $24.92 million.

Ability to Expand First-Year Medical School Capacity at Existing Florida Medical Schools

	Capital Improvements		Current Number of Seats			
Year	Renovation	New Construction	UF	USF	UM	NSU
2003-04	No	No	120	120	150	200
			Proposed Increase in Seats			
2005-06	Yes	No	15	0	0	0
2006-07	No	No	0	0	0	30
2007-08	Yes	Yes	45	80	22	0

Estimated Non-Recurring Capital Costs to Increase Capacity at Existing Medical Schools

	Renovation	New Construction	Total
UF	$ 2,500,000	$ 29,784,400	$ 32,284,400
USF	$ 5,900,000	$ 19,020,000	$ 24,920,000
UM	$ -	$ 12,430,000	$ 12,430,000
NSU	$ -	$ -	$ -

Total Non-Recurring Capital Costs	$ 69,634,400

The University of Miami's 2003-04 first year class was 150 students. UM indicated that expansion could only occur with new construction. If construction was pursued, UM could accommodate an additional 22 students beginning in 2007-08, for a total capital cost of $12.43 million for new education-lecture halls, classrooms, anatomy labs, and study carrels.

Florida's osteopathic medical school, Nova Southeastern University, indicated that it could increase enrollment by 30 first year students in 2006-07 without renovation or new construction. That would increase NSU's first year class from 200, in 2003-04, to 230 by 2006-07. The American Osteopathic Association's accreditation process, though, limits NSU from increasing capacity until 2007, unless the State of Florida requests such expansion.

The recurring operating costs for expanding the capacity at Florida's existing medical schools is estimated to be $22.44 million, plus inflation, by full implementation of the expansion in 2010-11. This cost assumes that all additional medical school seats would be funded by the state at a rate of $30,000 per student. Data presented in the table below, shows the actual state share of operating costs per student for Florida's existing medical schools based on enrollment and expenditures in 2002-03.

State's Share of Operating Costs Per Student

UF	$ 16,085
USF	$ 22,200
UM	$ 26,196
NSU	$ -

Based on SUS Expenditure Analysis, 2002-03 Cost Data

The actual state share, as calculated based on expenditures and enrollment, is noticeably smaller for both UF and USF than the $30,000 requested state support for additional medical school seat

expansion. This reflects the growing disconnect between actual enrollment and funded enrollment at the state's medical schools.

2003-04 Funded vs. Actual Enrollment at Florida's Medical Schools

	Funded Enrollment	Actual Enrollment	Actual Over/Under Funded
UF	460	465	5
USF	401	416	15
FSU	120	115	-5
UM	493	574	81
NSU	365	762	397
Total	**1,839**	**2,332**	**493**

Given that the medical schools have been absorbing additional students without funding for enrollment growth, the existing medical schools indicated they would not pursue any significant expansion of medical school seats unless they were funded at the requested $30,000 per student.

Funding of Existing Medical Schools

Data above indicated that, on the whole, Florida's existing medical schools are not receiving full funding from the state to support their actual enrollment counts. Further data demonstrates that a decline has occurred over the past five years in the percentage of operating funds the state's three established allopathic medical schools (UF, USF, and UM) derive from state appropriations, with a sharp decline projected in 2004-05. From 1999-00 to 2003-04, the share of funding UF derives from state appropriations has decreased from 13 percent to 8.9 percent. This share is projected to drop to 6.7 percent in 2004-05. USF has seen a similar decline, from 22.4 percent in 1999-00 to 16 percent in 2002-03. UM's share of funding derived from state appropriations declined dramatically from 3.5 percent in 1999-00 to 0.4 percent in 2004-05 (projected).

While funding from state appropriations has declined, existing medical schools have relied more heavily on practice plans (funding derived from the clinical practice of faculty physicians) for financial support. Funding derived from clinical practice comprises a larger share of the operating budget of UF and USF than the national average for all medical schools (52.6% for UF, 43.9% for USF, and 36.8% for UM, compared to 36% nationally in 2002-03). The percentage of funding derived from clinical practice is growing for Florida's established allopathic medical schools through 2004-05. This greater dependence on clinical practice potentially impacts the time clinical faculty can devote to the training of students. With medical slots expanding and state revenue to support those additional seats declining, it has resulted in the medical schools increasing clinical practice in order to support the enrollment growth. The medical schools doubt this practice can continue, given that faculty will not have the resources or time available to support additional students and increase their practice loads.

Sources of Funding for UF, USF, and UM Colleges of Medicine, 1999-00 to Projected 2004-05

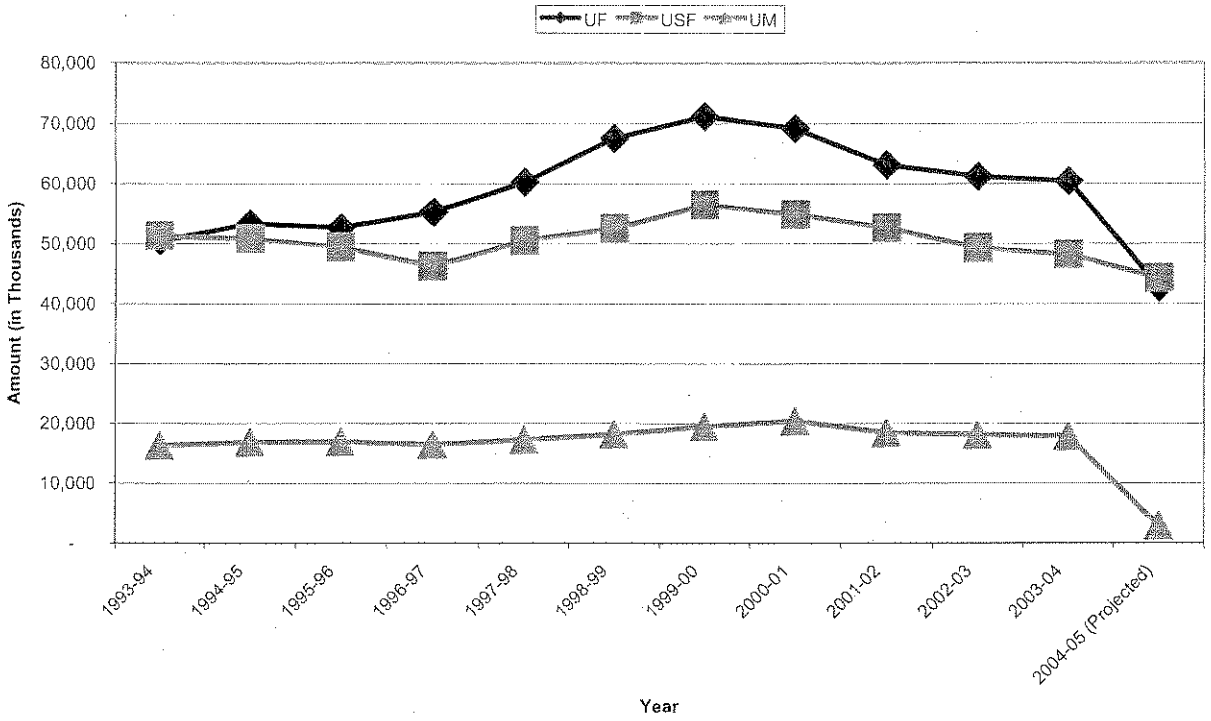
	1999-00			2000-01			2001-02		
	UF	USF	UM	UF	USF	UM	UF	USF	UM
State Appropriations	13.0%	22.4%	3.5%	11.5%	20.0%	3.3%	10.3%	18.6%	3.0%
Practice Plan	52.8%	40.8%	34.4%	55.6%	41.7%	35.0%	55.0%	40.0%	37.8%
Contracts and Grants	23.9%	16.5%	27.1%	23.1%	18.7%	25.8%	26.0%	21.7%	27.3%
Hospital Support	8.9%	13.2%	22.2%	8.1%	13.2%	23.3%	7.4%	12.9%	21.1%
Gifts and Endowments	1.4%	3.7%	6.6%	1.7%	2.6%	7.3%	1.8%	2.8%	5.8%
Tuition and Fees		1.7%	5.0%		1.7%	4.3%		1.8%	4.0%
Miscellaneous Sales and Service		1.8%	1.2%		2.1%	1.0%		2.2%	1.1%

	2002-03			2003-04			2004-05 (Projected)		
	UF	USF	UM	UF	USF	UM	UF	USF	UM
State Appropriations	9.3%	16.0%	2.8%	8.9%	16.1%	2.6%	6.7%	15.1%	0.4%
Practice Plan	52.6%	43.9%	36.8%	51.8%	41.9%	36.0%	55.0%	41.9%	40.5%
Contracts and Grants	27.4%	18.8%	28.0%	28.1%	21.0%	28.1%	27.1%	21.9%	25.9%
Hospital Support	8.2%	13.6%	21.1%	8.1%	13.1%	21.6%	8.6%	13.0%	21.0%
Gifts and Endowments	1.9%	3.4%	6.0%	2.2%	3.4%	6.7%	1.6%	3.3%	7.5%
Tuition and Fees		1.9%	3.9%		2.0%	3.8%		2.3%	3.7%
Miscellaneous Sales and Service	0.7%	2.5%	1.4%	0.9%	2.5%	1.1%	1.1%	2.6%	1.0%

Source: American Association of Medical Colleges Annual Questionnaire

The amount of state revenue to Florida's established allopathic medical schools has steadily declined since 1999-00. In fact, after controlling for inflation, state revenue provided to UF, USF, UM in the most recent year is actually less than the amount provided in 1993-94. Declines in the proportion of funding to medical schools derived from state general revenue and the actual amount of funding as well are continuing into fiscal years 2003-04 and 2004-05. With the creation of the Medicaid Physician Upper Payment Limit (UPL) Program, $20 million in recurring state general revenue funding to UF, USF and UM medical schools was cut in FY 2004-05 in anticipation of additional federal reimbursements for the clinical care of Medicaid patients being available. The Medicaid Physician UPL Program has resulted in the medical schools receiving a one-time increase in funding from Medicaid reimbursements. However, in turn, state revenue to the medical schools declined. The unintended consequence of using clinical revenue generated under the Medicaid Physician Upper Payment Limit (UPL) Program to replace state revenue, particularly when the entire Medicaid Program is anticipated to be subject to major revisions during the 2005 state legislative session, is further financial instability of medical school funding streams, causing uncertainty over available funding from year-to-year.

State Revenue for University of Florida, University of South Florida, and University of Miami Colleges of Medicine, 1993-94 to Projected 2004-05 (in constant July 2004 dollars)



Discussion

If the expansion of medical school capacity is seen as a viable alternative to increase the number of physicians practicing in the state, expanding capacity at existing medical schools has many benefits. For example, there are no concerns over building a strong reputation to attract students. The existing medical schools in Florida already, through time, have established strong reputations by which to attract students. Expansion at existing medical schools does require capital investment, as the schools identified above. However, the capital investment is more than likely less than what would be required to support the establishment of a new school.

However, it is questionable whether increasing medical school capacity will solve the short-term needs of Florida for additional physicians. The medical education pipeline of undergraduate medical education (years one through four of medical school) and graduate medical education (i.e., residency) has a long time horizon, lasting about 7-10 years before an incoming medical school student can practice as a physician. Data also indicates that Florida retains about 49 percent of its medical school graduates to practice in-state. Therefore, if existing medical school capacity is increased as proposed above, an additional 192 seats by 2010-11, one can expect, if recent patterns hold, about 94 doctors being produced that will remain in-state to practice by the mid-2010's given the time required to fulfill medical school education and training. The overall state capital costs and operating costs estimated to support this expansion is $92.04 million ($22.44 million in operating costs, $69.6 million in one-time nonrecurring capital costs).

Expansion through Regional Campuses

Regional medical campuses are either *clinical* campuses where third- and fourth-year medical students are educated or *basic sciences* campuses for first- and second-year students. Typically, regional campuses are geographically separate and do not serve as the main medical school's primary clinical or basic sciences site for medical student education. They, also, generally have an administrative tie to the main campus through the medical school dean, not simply departmental ties. Nationally, there are twenty-eight medical schools with regional clinical campuses and six with regional basic sciences campuses.

Branch campuses allow states to increase class sizes at existing medical schools and avoid the difficulties in starting new medical schools, such as: high start-up costs; local and state politics; turf battles among universities; and the reluctance of existing medical schools for new competition. Regional campuses primarily focus on educational and clinical missions of the medical school. Not surprisingly, they generally have small research enterprises. Seventy-four percent of respondents to a national survey of regional campuses indicated they receive less than $2.5 million in external research funding annually from all sources (Mallon, et al. 2003).

Benefits

The most comprehensive study on regional clinical campuses, *Mini-Med: The Role of Regional Campuses in U.S. Medical Education* (Mallon, et al. 2003) highlights a number of benefits regional clinical campuses provide to medical schools, hospitals, and the local community. A regional clinical campus allows the medical school to address regional or specialty area shortages by focusing on primary care and community settings in ways the main campus could not by itself. These campuses also afford the medical school a larger patient base to provide students with increased training opportunities and more varied experiences in their training. Regional campuses also provide a political benefit to the medical school by broadening the school's political network. An additional campus expands the support of state legislators for the medical school and may serve as a buffer against the development of another stand-alone medical school.

Clinical regional campuses provide many of the same benefits any medical school affiliation would to a hospital. The relationship with a medical school enhances a hospital's standing as an academic medical center. It provides the hospital with the infrastructure needed to support educational and training opportunities for residency programs.

The most immediate benefit a regional clinical campus provides to a local community is the increased physician supply, whether through new clinical faculty or clinical residents. According to the study highlighted above (Mallon et al. 2003), at many of the regional campuses visited a significant percentage of local physicians were educated at the clinical site. For example, 50 percent of the residents in the University of California-San Francisco at Fresno branch campus remained in the area to practice medicine. Additionally, medical education programs in the community help attract specialty physicians that the region might otherwise have difficulty recruiting; this is especially true in rural sites. Survey respondents from Fresno noted that the affiliation with UC-San Francisco at Fresno helps attract surgeons to the area.

Regional clinical campuses have been demonstrated to provide positive educational experiences to students. Students identified regional campuses as a place for educational innovation. The smaller, centralized, and less bureaucratic regional campuses facilitated change and innovation in medical curriculum. Secondly, students acknowledged the benefits regional campuses offer of smaller learning environments, more hands-on training, and more self-direction and creativity.

Using regional campuses or partner institutions provides expanded opportunities to students at the regional sites who may be place-bound. Partnerships spread the wealth of medical education statewide.

Drawbacks

Though students recognized many advantages to the regional clinical campus experience, a few drawbacks were also identified. Most notably, there is a perception that the regional campus is not as "academic" as the main stand-alone medical school. Students cited concerns that the regional campus did not have the broad academic resources of the main campus (e.g., smaller library, few electives, fewer opportunities for research, and faculty that do not maintain consistent office hours).

Issues also exist over the ability to divide the medical school curriculum into two mutually exclusive categories: basic sciences and clinical. The teaching of medical school students has become more integrated recently. Arguably, it is more difficult to create distant basic sciences campuses, since the clinical experience is more interspersed throughout medical school training than the traditional structure.

Second, concerns are raised over the ability of the regional campus to attain accreditation. It is arguably difficult to maintain the continuity and same level of quality of education between the main campus and the branch campus. Accreditation concerns can be overcome, though, if the regional campus' accreditation falls under the main campus, like the former UF/FSU PIMS program which fell under the UF College of Medicine's accreditation. However, significant expansion at an existing medical school either at its main site or through a regional campus requires accreditation. Also, technological advances such as distance learning aid in establishing a continuity of education between the main and branch campuses. Granted, though, the requirement of maintaining the same level of education at each campus can be difficult moving beyond the first year of medical school when clinical training becomes more prevalent. Arguably, one of the reasons the UF/FSU PIMS program was not expanded to the second year was the concern over maintaining the same educational experience for second year FSU PIMS students as medical students at the main campus in Gainesville.

Distance is also seen as an obstacle to the success of regional campuses. However, as noted earlier technological advances have allayed some of those concerns. Also, the barriers of distance can be overcome with a high level of communication between the campuses and a willingness to work together. With an amicable working relationship, regional campuses can overcome the difficulties distance creates for reaching accreditation and the provision of an equivalent, not exact, educational experience. If the expertise, willingness, and technology is available, the regional or satellite educational offerings can be successful.

Structural Organization

Regional campuses are generally organized under two basic models:

1. "Ownership" model – Branch campus employs a sizable staff, operates its own buildings, and treats the regional dean as a full-time employee of the medical school.

2. "Contractor" model – Branch campus outsources the regional program to a hospital, medical center, or regional consortium. Under this arrangement, the regional dean is a full-time employee of the hospital, few or no university employees work at the regional site, and the university does not have a separate building or physical presence.

Regional Campus Experience in Florida

In Florida, from 1971 until the creation of the Florida State University (FSU) College of Medicine in 2000, FSU operated a Program in Medical Sciences (PIMS) program under the direction of the University of Florida College of Medicine. This basic sciences branch campus allowed students (approximately 30 per year) to complete their first year of medical education in Tallahassee before relocating to Gainesville for the subsequent years of their medical education. The program encouraged applicants from non-traditional populations (e.g., minorities, older students, students from rural areas) and focused on students likely to choose a career in primary medicine. This relationship is best characterized under the "ownership" model, under which students enrolled in the PIMS program were UF students, who, if they successfully completed medical school, received UF degrees. Also, the PIMS program was not separately accredited, but rather fell under the accreditation of the UF College of Medicine. As accreditation demands, the UF/FSU PIMS program did ensure that first-year students enrolled in Tallahassee had the same educational experience as those enrolled in Gainesville, since the educational component of the PIMS program paralleled what was offered at the Gainesville campus.

Earlier national data indicated that one of the benefits of clinical regional campuses was that students are more likely to remain in the same area to practice following their education and training. Though the PIMS program was restricted to first-year students, follow-up data on PIMS program alumni in 1997 found that approximately half were practicing somewhere in Florida but not necessarily the Tallahassee area or the Florida Panhandle. This same data indicated that about 50 percent of the alumni through 1997 were practicing in primary care, double the national average of 25 percent in 1997 (*Plan for an Expanded Program in Medical Sciences at Florida State University*, 1999).

Though the UF/FSU PIMS program was successful in educating first-year medical students, the program was never expanded to two years. The ability to find faculty to educate medical students is a roadblock to expansion at regional sites. In the first year of medical school, with its focus on basic sciences, about 40 percent of the faculty are clinical (i.e., have M.D.'s). By the second year, that figure rises to about 90 percent of the faculty. Therefore, it is easier to develop branch campuses for first year medical education. However, as a student progresses along the medical school track, it becomes increasingly difficult to maintain the necessary clinical faculty at regional sites unless there is already a critical mass of clinical faculty in place.

In Fall of 2004, Florida Atlantic University began admitting students to its Partnership for Quality Medical Education program with the University of Miami School of Medicine. This branch campus of the UM School of Medicine plans to admit a class of 32 students to FAU for the first two years of medical education. Like the former UF/FSU PIMS program, the UM/FAU partnership is best characterized by the "ownership" model of organization. Students are admitted through the normal UM School of Medicine admissions process. As accreditation demands, the medical education at FAU is identical to that of UM. The technological advances of distance learning allow course delivery at FAU to complement its on-site instruction with instruction from UM. As with the UF/FSU PIMS program, graduates receive a degree from the main campus, in this case UM. This new expansion has increased the number of medical student slots in Florida. It remains too soon to determine if this program will result in any increase in the number of physicians remaining in Florida to practice.

The closest example of a clinical regional campus in Florida is the University of Florida College of Medicine's Jacksonville campus. The Jacksonville program is designed for third-year UF medical students. On average, UF medical students spend about 20 percent of their third year in Jacksonville on clinical rotations. There are a fixed number of slots available for each rotation (currently approximately 26-28 in total for all third year rotations). Students decide among themselves who will fill those slots. As with the basic sciences branch campuses discussed above, the students are always considered students of the main campus. All registration, evaluation management, and grade assignment is completed in Gainesville. Unlike a true clinical campus, fourth-year students are not required to enroll at the regional campus in Jacksonville.

In terms of increasing medical school capacity, UF continues to underutilize the available slots for clinical education in many specialties at the Jacksonville campus. The most recent analysis by UF indicated that the Jacksonville campus, with the current educational and clinical (although not administrative) resources available, could effectively educate 48 medical students for their entire third and fourth year in a true regional campus model (a total of 96 students). Representatives from UF noted, though, that the chief obstacle to increasing class size at UF is the limited space for the first two years (basic sciences) of medical school, not the clinical third and fourth years.

The experience at the Jacksonville clinical campus for UF students provides the students with a new experience and different mix of patients. However, unlike true 3-4 year clinical campuses, third year UF students go to the Jacksonville campus on clinical rotations for a temporary period. Though clinical campus experiences in other states have shown that a relatively solid to high percentage of students at regional clinical campuses remain in the area for residency training and given high retention rates may remain to practice there as well, since the UF Jacksonville campus is not a fully year 3-4 clinical campus, it is difficult to determine whether a greater number of students remain in the clinical campus area for residency training. The UF Jacksonville campus is more of an affiliated hospital site than a clinical regional campus.

Cost

Regional campuses are potentially less expensive than creating new stand-alone medical schools. However, there are many requirements that must be fulfilled (e.g., clinical faculty in place) in order for a regional campus to succeed; raising concerns over whether regional campuses are indeed less expensive than expanding existing medical schools at their main site.

The funding required to support the new UM/FAU partnership's planned enrollment of 64 students is $4.6 million. According to officials at FAU, the funding covers essentially all costs, salaries of all faculty, salaries of all support staff, instructional material, information technology staff and equipment to maintain a distance learning system with UM, and teaching assistant salaries. The $4.6 million is the estimated amount required to support 64 students. Currently there are 16 year-one students enrolled.

The UM/FAU partnership did not face many of the start-up costs associated with a new medical campus either main or branch because facilities were already in place, with the opening of a biomedical sciences center in 2002 using donated matched funds. The biomedical sciences center serves multiple purposes. It is used to train medical students, science undergraduates, master's, and Ph.D. students.

The table below provides the funding by category for the University of Florida Jacksonville campus in 2002-03. A small percentage of funding used to support the branch campus is derived from state appropriations ($3.6 million, or 2.3 percent). The $3.6 million devoted to UF-Jacksonville represents about 6 percent of the total of $58.3 million appropriated to the University of Florida College of Medicine. This lower cost figure reflects the small amount of time UF medical school students spend at the regional campus (about 20 percent of their third year). Not surprisingly given that clinical campuses are more practice-based than research-based, the largest amount of funding is derived from practice plans.

Medical School Financing:
University of Florida Jacksonville Campus

		Amount	Percent of Total
State Appropriations	$	3,609,602	2.3%
Grants and Contracts	$	7,733,888	4.9%
Practice Plans	$	133,647,817	85.4%
Gifts and Endowments	$	87,500	0.1%
Hospital Support	$	11,346,077	7.3%
Total Revenues	$	156,424,884	100.0%

Source: American Association of Medical Colleges Annual Questionnaire, 2002-03

Discussion

Regional campuses provide many of the benefits of any expansion of existing medical school capacity with a few added bonuses. The regional campus experience affords students the ability to train with varied patient loads and health care delivery settings. Regional campuses also open access to medical education for students in parts of the state not located near an existing medical school, without the increased expense of starting a new medical school. Data also indicates, from the FSU PIMS program and other programs across the nation, that students are likely to stay in the area of the regional campus to train and practice.

There are issues of concern with regional campuses. Success depends heavily on the willingness of multiple institutions to partner. This occurred between UF and FSU for nearly thirty years for a first-year program in medical sciences and is beginning to occur between UM and FAU with a two-year basic sciences branch of the University of Miami School of Medicine. However, estimates are varied on the cost of such partnerships, making it difficult to determine an anticipated cost per physician remaining in Florida to practice. As with the expansion at existing sites, issues of the amount of time necessary for a medical school student to progress into a licensed practicing physician remain. Also, it is likely that regional campuses, with their dependence on a willingness between participants to be established and succeed, will not provide the same magnitude of medical school capacity increase as expansion at an existing site or a new medical school would provide. Though successful working relationships have occurred, there are additional costs of oversight and distance learning technology at a regional campus that would not necessarily be needed if expansion occurred at an existing medical school.

Expansion through New Medical Schools

New Medical Schools in Florida

In 2000, the Florida Legislature created the Florida State University College of Medicine. Its principal focus, as defined by statute (1004.42, F.S.), is on recruiting and training medical professionals to meet the primary health care needs of the state, especially the needs of the state's elderly, rural, minority, and other underserved citizens. This was the first allopathic medical school opened in the U.S. since 1971. The FSU College of Medicine is designed as a community-based medical school, with regional clinical campuses in Orlando, Pensacola, Tallahassee, and planned sites in Sarasota, Ft. Myers, and Jacksonville. All medical students at FSU complete their basic sciences component (years one and two) of medical education in Tallahassee, building on the established PIMS program which trained first year students for the University of Florida. The clinical training (years three and four) then takes place at the regional sites throughout the state. This provides some of the benefits highlighted in the previous section such as providing students with increased and varied patient loads in different settings (e.g., rural, urban, suburban, ambulatory settings).

Not fully accredited as of yet (FSU College of Medicine received provisional accreditation from the Liaison Committee on Medical Education in October of 2002), the FSU College of Medicine admitted 30 students in 2001, 40 students in 2002, 46 students in 2003, and 50 students in 2004. Full enrollment is estimated to reach 480 students by 2008-09. The estimated recurring net state appropriations (minus tuition and fees) required to support 480 students in 2008-09 is $34.2 million (in 1999 dollars) (*Plan for a Four-Year Allopathic School of Medicine at Florida State University*, MGT of America 1999).

Enrollment Trends at Florida State University College of Medicine

	Entering Class	Total Enrollment
2001-02	30	30
2002-03	40	69
2003-04	46	115
2004-05	58	177

In stark contrast to the funding sources for the other public allopathic medical schools in the state, FSU derives the vast majority of its funding from state appropriations (72.6 percent). In addition, no funds are derived from faculty practice. With no immediate plans to incorporate a faculty practice plan as a funding source, state appropriations will continue to support medical education at FSU at a higher rate than at Florida's other medical schools.

Operating Budget by Source: Florida State University College of Medicine, 2002-03

	Amount	Percent of Total
State Appropriations	$ 18,771,229	72.6%
Tuition and Fees	$ 775,671	3.0%
Faculty Practice	$ -	0.0%
Contracts and Grants	$ 3,102,683	12.0%
Gifts and Endowments	$ 3,102,683	12.0%
Affiliated Hospitals	$ -	0.0%
Other	$ -	0.0%
Total	$ 25,855,688	100.0%

Note: In addition to the $25,855,688 operating budget in 2002-03, $60 million has been appropriated in capital costs

Not surprisingly, the estimated annual direct cost per medical student for FSU is significantly higher than the other medical schools in Florida and the national average. Reflecting the initial costs incurred as part of the start-up of a new medical school for facilities and faculty, for instance, the annual direct cost per medical student in 2002-03 was $283,786. Based on projected budgets and final student enrollment, FSU anticipates this figure will ultimately be approximately $80,000. It is important to point out that the annual direct costs displayed below are total direct costs from all funding sources, not only the state's share. Given that Florida's existing medical schools rely more heavily on other sources of funding to support medical education (e.g., practice plans), the FSU cost is not only higher in absolute terms, but also as a reflection of the state's share of support.

Annual Direct Costs Per Medical Student, FY 2002-03

UF	$47,338
USF	$75,600
FSU	$283,786
UM	$67,035
NSU	$39,634
National Average	$46,500-$75,000

Note: National Average as reported by American Association of Medical Colleges

In addition to the Florida State University College of Medicine, the state has seen another new medical school emerge. The Lake Erie College of Osteopathic Medicine (LECOM) has opened a new branch in Bradenton. LECOM began admitting its initial class of 150 students in Fall 2004.

Full enrollment is planned for 600 students. As with FSU, the LECOM branch is awaiting full accreditation.

Benefits of a New Medical School

There is no doubt that establishing a medical school is a very costly endeavor. However, there are benefits beyond providing additional access to medical education. Medical schools can provide significant economic benefits to their local communities—providing jobs, other ancillary business opportunities, and increased tax revenues. A nationwide study conducted by Tripp Umbach Healthcare Consulting, Inc. (*The Economic Impact of Medical Colleges and Teaching Hospital Members of the Association of American Medical Colleges*, 2003) estimates that the combined economic impact of medical schools and teaching hospitals (AAMC member institution only) equaled over $326 billion, and accounted for approximately 2.7 million jobs. The study also estimated that these institutions generated nearly $14.7 billion in total state tax revenue, nationally. Florida ranked ninth among the states in total economic impact generated by medical schools and teaching hospitals at $10.9 billion. The institutions accounted for approximately 98,000 jobs, each working either directly or indirectly for an AAMC member institution. The medical schools and teaching hospitals in Florida generated an estimated $551 million in state tax revenue.

Discussion

A new medical school provides numerous benefits to a local community (economic benefits of jobs and increased tax revenue to the state) and the institution (heightened sense of prestige, increase in research dollars). It, like a regional campus, brings the benefits of a medical education opportunity to communities not previously served by a medical school or teaching hospital. However, of all the options available to increase medical school capacity, establishing a new medical school is the most expensive option.

Start-up costs include capital expenses, the hiring of new faculty, and the hiring of new administrators. Also, there is the question of accreditation. The Florida State University College of Medicine, created in 2000, was awarded provisional accreditation in 2002 and is continuing the process towards full accreditation. Additionally, as noted above, established medical schools in Florida have relied less on state general revenue to support medical education. Florida's medical schools rely more heavily on physician practice plans to support medical education than medical schools nationally. Though the medical schools in the state do not desire this practice to continue for the long term viability of their programs, it is important to point out that the newest medical school in the state (FSU) does not rely at all on a physician practice plan, and relies much more heavily on state appropriations to support their program (72.6 percent of their funding is derived from state appropriations). Given the costs of start-up and the lack of an established program, it is understandable that most of a new medical school's funding would be derived from state appropriations. This leads to significantly higher direct cost per medical student (nearly five times higher than the average direct cost for Florida's four other established medical schools).

Given the time horizon concerns noted in using medical school expansion to address a physician shortage, the high start-up costs involved, and the greater share of state general revenue support needed to build and grow new medical schools, and the likelihood that only about half of Florida's medical school graduates will remain in state to practice, establishing a new medical school to

address a new or impending physician shortage is the most expensive option by which to expand medical school capacity based on the FSU model. The establishment of a new medical school remains a costly option, however those costs will vary based on the model used to develop the new school (e.g., using existing infrastructure and resources, using a clinical practice plan to financially support a portion of the medical school's funding).

Expanding or Creating New Residency Programs

Retention and Importation

Research has demonstrated that the location of a physician's graduate medical education (GME) training plays a role in determining where a physician will practice. A recent nationwide analysis[4] by the National Conference of State Legislatures (NCSL) found that 47 percent of allopathic medical residency completers practice in the same state as their GME training. For Florida, the percentage of allopathic medical residency completers who remained in-state to practice was 60.5 percent. Only California retains more GME completers than Florida (68.2 percent). As shown in the table below, a similar percentage of GME completers in the Community Hospital Education Program (CHEP) (68 percent) immediately entered practice in Florida. Additionally, sixty-three percent of completers who went on to further training stayed in Florida to conduct their training.

Practice Path Followed by 2003 Community Hospital Education Program (CHEP) Completers

	In Florida		Out of State	
	#	%	#	%
Immediately Entering Practice	205	68%	95	32%
Continuing Training	112	63%	66	37%

Note: 43 completers did not immediately enter practice or continue training anywhere.
Source: Community Hospital Education Program Destination Report

Compared to GME completers, a smaller percentage of allopathic medical school graduates (39 percent) practice in the same state that they were educated. However, as with GME completers, Florida retains a higher percentage of medical school graduates to practice in-state than the national average (49 percent). Both California (63 percent) and Texas (58 percent) retain a higher number of medical school graduates than Florida.

These high percentages indicate that Florida retains more of its residency program completers and medical school graduates than most other states. Though the concerns exist over the work environment in Florida (e.g., high cost of malpractice insurance) hindering the likelihood of physicians remaining in-state to practice, the high rate demonstrates that presently the practice environment is not negatively impacting retention.

Though Florida is retaining more residents and medical school graduates than the national average, a lower percentage of the overall physician population in Florida completed their education and/or training in-state. In Florida, 32 percent of allopathic physicians currently practicing in the state completed their most recent GME training in Florida. This compares to a national average of 41 percent. Additionally, only 17 percent of allopathic physicians currently practicing in Florida graduated from a Florida medical school, compared to 31 percent nationally. These figures are an indication that though Florida retains a relatively high percentage of medical residents and graduates,

[4] Henderson, Tim, Carrie Farmer and Suzanne Szwarc, Practice Location of Physician Graduates: Do States Function as Markets? (Denver, CO: Office of Publications, National Conference of State Legislatures, January 2003).

the state cannot meet the physician workforce needs and must import more physicians than most other states.

Residency Opportunities in Florida

Data indicates that the location of a physician's residency training is a better indicator of where a physician will practice than the location of a physician's medical school. Given this fact, increasing the number of residency opportunities in Florida would have an immediate impact on increasing the number of physicians practicing in the state.

Florida currently ranks 46th nationally in terms of the number of total (allopathic and osteopathic) residency positions per 100,000 state population. It is estimated that Florida would need an additional 2,700 allopathic and osteopathic residency positions to meet the national ratio of medical residents to 100,000 population. Practically all of the residency positions in Florida are filled.

Representatives from the UF College of Medicine indicated that about 40-60 percent of their medical school graduates remain in-state for GME training. UM reported that about 33 percent remain at Jackson Memorial Hospital in Miami for GME training and an additional 10 percent conduct their training elsewhere in Florida. A variety of factors contribute to the fact that about 60 percent of graduates do not remain in-state for GME training: lack of opportunities in competitive specialty training programs, desire to leave the state for more "prestigious" programs (e.g., Ivy League), and the location of the programs (i.e., lifestyle considerations). If residency slots are increased in certain highly competitive fields, it is believed that more graduates would remain in-state for training—and given the high retention rates—more likely stay in Florida to practice.

The University of Florida, the University of South Florida, the University of Miami, and Nova Southeastern University identified areas of high priority where residency opportunities should be created or expanded in the state. The areas of largest need, as identified by Florida's medical schools, are Primary Care and Emergency Medicine, accounting for nearly 50 percent of all new positions desired by Florida's medical schools if funding became available.

New or Expanded Residency Positions Identified by Florida's Medical Schools as High Priority Areas

Program	Number of New Positions	% of Identified Positions
Primary Care	92	27.1%
Emergency Medicine	66	19.4%
Surgery/General Surgery	32	9.4%
Pediatric Specialties	24	7.1%
Plastic Surgery	18	5.3%
Surgical Specialties	17	5.0%
Ophthalmology	16	4.7%
Orthopedics	15	4.4%
Psychiatry	12	3.5%
Rehab/Physical Medicine	8	2.4%
Anesthesia	8	2.4%
Radiology	6	1.8%
Oncology	5	1.5%
Otolaryngology	5	1.5%
Pathology	5	1.5%
Neurology	4	1.2%
Radiology Specialties	4	1.2%
Trauma/Critical Care	2	0.6%
Breast	1	0.3%
Total Positions	**340**	**100.0%**

Primary Care includes Internal Medicine, General Pediatrics, and OB/GYN

However, solely increasing the number of residency slots may not necessarily lead to an increase in the number of Florida medical school graduates remaining in Florida. Committee testimony indicated that medical school graduates are looking for quality programs to enroll in for GME. If new slots are the product of new programs or community based hospital programs, lacking a strong reputation, the expansion is not likely to immediately increase the number of Florida medical school graduates remaining in Florida to train until those programs fully develop and earn a quality reputation. What can be concluded though, based on the retention rates, is that if the state increased the number of residency slots, there is a greater likelihood of more residency completers remaining in Florida to practice. If the bottom line is increasing the number of physicians, not Florida educated and trained physicians, the increase in residency slots is seen as an effective alternative to address workforce needs in the short term.

Cost of Residency Training

Cost to support residency training is divided into two categories: direct and indirect costs. Direct costs are those costs directly attributable to the residency program. These include resident costs (i.e., salary and benefits), faculty costs (typically borne by the medical school, though the teaching hospital may share in the costs), and administrative/overhead costs. Indirect costs are those incurred by the teaching hospitals with residency programs as a result of their unique mission and case mix. These costs typically reflect the high volume of tests and procedures performed at

teaching hospitals, the higher staffing ratios at teaching hospitals, and the increased record-keeping/documentation associated with residency training.

Costs for residency training vary greatly across the nation and within the state and local community. The range of variation for direct costs is wide given the differences in the financial arrangements between medical schools and teaching hospitals that provide residency training. Indirect cost variations are decidedly more pronounced given the inconsistency of cost reporting to Medicare. Available data from the 2001 Medicare cost reporting system for Florida's six statutory teaching hospitals and six selected community teaching hospitals places the average direct cost for GME at $88,695 and the average indirect cost at $97,176. These averages reflect a wide variation in reported costs for these twelve hospitals.

Graduate Medical Education Costs as Reported to Medicare for Selected Florida Teaching Hospitals

	Range of Costs	Average Cost	Percent of Total Cost
Direct Costs			
Resident Costs	$28,622 - $47,826	$41,323	22%
Faculty Costs	$4,532 - $66,771	$32,252	17%
Administration/Overhead Costs	$639 - $42,951	$17,159	9%
Total Direct Costs	**$39,554 - $141,107**	**$88,695**	**48%**
Indirect Costs	**$65,373 - $124,132**	**$97,176**	**52%**
Total Cost Per Resident	**$107,632 - $256,998**	**$185,871**	**100%**

Hosptials included are Shands Hospital-Gainesville, Shands Hospital-Jacksonville, Jackson Memorial Hosptial, Tampa General Hospital, Mt. Sinai Medical Center, Orlando Regional Medical Center, St. Vincents Hospital, Tallahassee Memorial Hospital, Sun Coast Hospital, Florida Hospital, Palmetto General Hospital, and Bayfront Medical Center

In addition to these costs reported to Medicare, Florida's three allopathic medical schools (UF, USF, and UM) with residency programs submitted data estimating an average direct cost for GME of $115,000 and an average total cost of GME of $190,000 per resident.

Impediments to Expanding Residency Programs

In addition to an arduous accreditation process, the establishment of new or expanded residency programs faces the large hurdle of acquiring funding. The largest explicit source of funding for graduate medical education (GME) is the federal Medicare program. However, since the passage of the Balanced Budget Act of 1997 (BBA), significant reductions to GME funding have occurred, negatively impacting teaching hospitals across the nation. The BBA capped the total number of residents funded by Medicare at the hospital's most recent count of FTE as of December 31, 1996. This cap does not apply to new programs in rural underserved areas or to hospitals that have not had residency programs prior to January 1, 1995 until they have had three years to fill their resident cohorts. The BBA also reduced the indirect GME cost Medicare adjustment factor.

Certain provisions of the BBA attempted to encourage GME training opportunities in non-traditional settings. Namely, the federal government would provide GME payments to non-hospital settings (e.g., rural health clinics) where resident training takes place if the non-hospital provider bears all of the cost of training at that setting. Also, under the BBA, Medicare indirect and direct GME payments would be made to hospitals for the time residents train at non-hospital ambulatory

sites if the hospital bears all or nearly all of the cost of training at that site. Though the BBA sought to target GME funding to meet rural needs in overcoming physician shortages, financial difficulties remained. The exception to the hospital cap on residencies only applied to rural hospitals, not rural satellite facilities of urban teaching hospitals – decreasing the number of potential residents on the rural training track, since they count against the overall residents at the teaching hospital. Indirect GME payments to teaching hospitals for residents in non-hospital settings is of little use since residencies are capped at the number that had actually been in the hospital. Though direct GME payments can be made to non-hospital settings, indirect GME payments cannot. The direct component is usually too small to sustain a resident in most of these settings.[5]

The Balanced Budget Refinement Act of 1999 (BBRA) attempted to correct some of the problems highlighted above. Under this act, hospitals located in rural areas are permitted to increase their resident limits by 30 percent for direct and indirect GME payments. A 2000 Council on Graduate Medical Education (COGME) report predicted that the 30 percent expansion would allow for only negligible expansion in relatively small residency programs.[6]

Residency Program Expansion since the Balanced Budget Act of 1997

Despite the impediments posed by the BBA, new residency positions have been created since 1997. The total number of new allopathic residency positions created since 1997 is 236. There are a few important caveats to point out. First, the BBA and the BBRA, while capping the growth of residency programs in traditional health care settings, attempted to encourage growth in non-traditional (e.g., rural) settings. None of the new residency positions added since 1997 are in rural, underserved areas. Despite the perceived funding incentive to increase the number of rural residency programs, there are structural realities that impede their growth. Namely, it is very difficult to sustain a residency program in a rural hospital. Small rural hospitals lack the infrastructure, faculty, and facilities to support residency programs. This creates great difficulty for programs in stand-alone rural hospitals to be accredited.

Though Florida has seen an increase in the number of residency positions since 1997, the magnitude of this increase is not very pronounced. For example, the positions added represent only about 10 percent of the needed growth in residency positions if Florida is to reach the national ratio of residency positions per 100,000 state population. Also, the growth rate in the number of residency positions (8 percent since 1997) is not keeping pace with the growth rate in Florida medical school graduates (10 percent for allopathic graduates, 30 percent for both allopathic and osteopathic graduates) and in medical school enrollment (13 percent for allopathic medical school enrollment, 27 percent for both allopathic and osteopathic enrollment). With the Florida State University College of Medicine set to reach its full enrollment of 480 students and graduating class size of 120 students and the newly opened branch of Lake Erie College of Osteopathic Medicine (LECOM) in Bradenton set to reach its full enrollment of 600 students and graduating class of 150 students in the near future, the growth rate of residency positions, if similar numbers are added, will pale in comparison to the growth rate of enrollment and graduates at Florida medical schools.

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[5] Ibid

[6] *Financing Graduate Medical Education in a Changing Health Care Environment.* Fifteenth Report of the Council on Graduate Medical Education, December 2000.

Currently, there are enough first year residency positions in Florida to accommodate all of the state's medical school graduates. If residency positions are not increased at a higher rate, this will no longer be the case in the coming years, given the new opportunities for medical education at FSU and LECOM. The table below demonstrates that solely the addition of FSU medical school graduates would result in an insufficient number of first year Florida residency positions in non-surgical specialties, if FSU graduates matched to residency positions in similar proportions as 2004 UF, USF, and UM graduates. The table below does not account for osteopathic medical school graduates who match to allopathic residency programs (currently about 30 percent), whose growth with LECOM would further limit the amount of available residency positions in Florida for the state's medical school graduates. This will have consequences for the state's ability to retain more physicians, given the greater likelihood that physicians will practice where they are trained rather than where they are educated. Florida may produce more medical school graduates, with increased enrollment at existing schools and full enrollment at FSU and LECOM. However, if there are not enough residency positions available in-state for these graduates, they will be forced to go out of state for training and thus less likely to return to Florida to practice.

Supply and Demand of Medical Residents by Allopathic Residency Program Category, 2004

Allopathic Residency Program Category	2004 Supply[1]	2004 Demand[2]	2004 Supply to Demand Differential	2004 Supply to Demand Differential if FSU Demand is Included[3]
Family Practice	87	26	61	53
All Other Primary Care	266	118	148	110
Surgery and Subspecialties	66	44	22	8
Non-Surgical Specialties	208	186	22	-38
Total	**627**	**374**	**253**	**133**

All Other Primary Care includes general internal medicine, general pediatrics and OB/GYN

Surgery and Subspecialties includes general surgery, neurological surgery, orthopedic surgery, plastic surgery, and preliminary surgery

Non-Surgical Specialties includes anesthesiology and subspecialties, dermatology, emergency medicine, combined internal medicine, preliminary internal medicine, medical genetics, neurology, nuclear medicine, ophthalmology, otolaryngology, pathology, combined pediatrics, preventive medicine, physical medicine and rehabilitation, combined psychiatry, diagnostic radiation, radiation oncology, transitional year, and urology.

[1]Supply of First-Year (PGY1) residency positions in Florida based on the 2004 National Residency Matching Program (NRNP) 2004 Match Results

[2]Demand based on the number of 2004 UF, USF, and UM medical school graduates matching to PGY1 positions in the residency category either in Florida or in another state

[3]Assumes the same percentage of FSU graduating class of 120 matches to PGY1 positions in various residency categories as actual percent of total 2004 UF, USF, and UM graduates (7% to family practice; 31.6% to all other primary care; 11.8% to surgery and subspecialties; and 49.7% to non-surgical specialties).

The ability to create additional residency programs and positions is highly dependent on the ability to fund these programs and positions. As noted earlier, the BBA placed restrictions on the amount of funding available for residency positions. Yet, positions were created. However, a closer look at the programs created shows that, though growth occurred, it is not widespread and the concerns over funding arrangements remain. The positions at the Mayo Clinic and Cleveland Clinic (40 percent of all the new positions created in Florida after 1997) were funded through federal Medicare dollars because the programs were considered to be at new hospitals that had never had residency

programs before, therefore not subject to the BBA caps. Most of the growth in UM, USF, and UF residency programs were in fellowships with only 1-2 participants per program. Residency programs in Emergency Medicine at UF and USF were established because there were no such residency programs in their geographic areas of the state. Because the hospitals consider these programs to be critical, Shands Hospital and Tampa General Hospital are bearing the complete cost of these programs. About 70 percent of the funding for USF residency programs established since 1997 has come from the Tampa V.A. hospital. This funding stream, though, has been capped as of this year.

Allopathic Residency Positions Created Since the Balanced Budget Act of 1997

Medical School/Hospital	Number of Filled Positions
University of South Florida	82
Mayo Clinic - Jacksonville	65
University of Florida	34
Cleveland Clinic - Jacksonville	29
University of Miami/Jackson Memorial Hospital	17
Miami Children's Hospital	2
Orlando Regional Medical Center	2
Florida Hospital - Orlando	2
Bayfront Medical Center	2
Halifax Medical Center	1
Mount Sinai Medical Center	0*

*A new program in Interventional Cardiology was created in 2004.

State Programs to Fund Residency Positions

The only source of explicit state funding to support GME in Florida is the Community Hospital Education Program (CHEP) – intended to increase the number of primary care physicians practicing in Florida. CHEP funding generally constituted 7 percent (for family practice) and 2 percent (for all other specialties) of the average per capita cost to support GME at Florida's teaching hospitals.[7] Since FY 2000-01, the Legislature has not made an appropriation to CHEP. Through inter-governmental transfer (IGT), CHEP funding was combined with the Medicaid Program. This has allowed the state to draw down additional federal Medicaid matching funds, but it has effectively eliminated the only state program that provided explicit funding for the state's primary care GME programs.[8]

Other states have developed innovative policies to deal with the reduction in federal funding for GME through Medicare. States have moved funding through inter-governmental transfers (IGT) to draw down more matching funds in the Medicaid programs (like Florida with CHEP), but have maintained a policy—using these additional matched dollars—to fund residency programs. State policies to fund GME include: direct state appropriations, Medicaid payments linked to state goals, and pooling multiple payment sources. A few model state programs are highlighted below:

[7] *Graduate Medical Education in Florida: Findings and Recommendations.* Legislatively-mandated study submitted by Florida State University College of Medicine. November, 2001.
[8] Ibid

Direct State Appropriations

- **Arkansas** – Since 1973, Arkansas has provided state support for six community-based family medicine residency programs. These residencies provide most of the state's rural physicians. Forty-five percent of graduating residents practice in rural communities.
    - State law prohibits the state's only medical school from taking any out-of-state students if there is a qualified Arkansas resident.
    - Under the state's community match programs, communities in Arkansas are encouraged to make agreements with medical students in their first year of training, such as paying half a student's tuition in return for choosing a primary care residency and practicing in that location for a specified time.

- **Colorado** and **Texas** have similar programs where state appropriations are made to increase the number of family practice physicians in underserved areas.
    - Colorado supports 10 family practice residency programs, training about 200 residents for an annual appropriation of $2.4 million.
    - Texas supports 26 programs, training 700 positions at $11 million. The Texas Family Practice Residency Program limits state funds to no more than 35 percent of a program's total budget. Texas also requires budget reviews and audits of all funded programs and data collection of the area distribution of family physicians in underserved areas.

Medicaid Payments Linked to State Goals

- **Georgia, Michigan, Tennessee,** and **Utah** have programs that have tied the disbursement of Medicaid funding to hospitals if they meet certain state goals.
    - In Michigan, hospitals were funded based on (1) the 1995 reported costs for medical education and (2) the institution's number of residents in primary care and its share of Medicaid patients. To qualify for reimbursement, a hospital must submit a report to the state detailing resident profiles and the way in which it is using the funds to support specific public policy goals and priorities. A third pool of funding was established to provide monies on a competitive grant process for innovations in health profession education. Only consortia consisting of at least a hospital, a university, and a managed care organization are eligible to apply.
    - The reforms in Michigan have forced university, hospital, and health plan officials to communicate with one another in productive and positive ways on GME issues.

Pooling Multiple Payment Sources

- **Minnesota** and **New York** are examples of states which have drawn together various state funding streams into one pooled fund for GME
    - The Minnesota Legislature created the medical education and research cost (MERC) trust fund to capture new and existing state sources of medical education funds. The MERC trust fund consists of: tobacco settlement fund, Medicaid matching funds, State general revenue, and Medicaid managed care carve-out. MERC funds go to support over 2,000 FTE trainees at 400 sites. Funds are distributed based on a cost formula and are not linked to state workforce or policy goals.

Concerns have been raised over the state's recent policies to supplant state funds with federal funds through inter-governmental transfers. In fiscal year 2000-01, the state, through inter-governmental transfer, folded the line-item appropriation for the Community Hospital Education Program

(CHEP) into the Medicaid budget in order to draw down more matching funds from the federal government. Additionally in FY 2004-05, the state cut recurring state funding to medical schools by $20 million in order to draw down additional federal Medicaid funds under the new Medicaid Physician Upper Payment Limit (UPL) program. Continuing this policy of replacing relatively stable state general revenue funding with much less predictable Medicaid clinical revenue, some fear, will make funding streams more unstable and problematic for medical schools.

The lack of state general revenue has been seen as the main impediment to Florida following approaches other states have adopted to fund GME. Folding the CHEP funding into the Medicaid budget in order to draw down monies from the federal government has lead to increase in Medicaid dollars to the state. However, there is no demonstrable change (and probably a decrease) to the amount of funding for GME because the dollars have become untraceable. The funds are no longer earmarked for GME. The state's Graduate Medical Education Committee actually recommended that Florida pursue a policy of transferring the dollars in order to draw down more federal funding, with the expectation that more funding would go to GME. However, this approach does not allow one to track whether the additional dollars are indeed going to fund GME.

Past Graduate Medical Education Committee recommendations to fund GME include programs similar to those adopted by other states to "carve-out" state Medicare and Medicaid dollars to support GME. Under this approach, before Medicare and Medicaid funds are disbursed to managed care entities or other entities that do not provide education and training, a portion of the funds are "carved-out" and retained by a state-level body which then distributes the funds to GME programs based on state goals. Other alternatives to fund GME include surcharges on insurance premiums and/or medical licenses.

Expanding Residency Positions without Expanding Medical Schools

There are concerns to solely increasing the residency slots without medical school expansion. Issues include the ability to find faculty to train more residents and the educational environment of expanded residency programs without the infrastructure of a medical school. However, though there are only 125 medical schools across the country, there are approximately 400 hospitals or other health care providers that conduct residency training in accredited programs. In Florida, according to the Accreditation Council on Graduate Medical Education (ACGME), nineteen of the twenty-five residency program sponsors of accredited GME programs are non-medical school related in 2004-05. However, the largest number and greatest variety of residency programs are offered by the Florida's medical schools or medical school affiliated sponsors. Also, of the non-medical school affiliated programs, nearly all are located in large metropolitan areas that have the necessary infrastructure (e.g., clinical faculty) to sustain residency programs.

Sponsoring Institutions of Accredited Graduate Medical Education Programs in Florida, 2004-05

Sponsor	Location	Medical School Affiliation	# of Programs
Jackson Memorial Hospital/Jackson Health System	Miami	Yes	63
University of Florida College of Medicine	Gainesville*	Yes	56
University of South Florida College of Medicine	Tampa**	Yes	44
University of Florida College of Medicine at Jacksonville	Jacksonville	Yes	18
Orlando Regional Healthcare	Orlando	No	11
Cleveland Clinic	Weston	No	8
Miami Children's Hospital	Miami	No	7
Mount Sinai Medical Center of Florida, Inc.	Miami Beach	No	6
Bayfront Medical Center	St. Petersburg	No	3
Florida Hospital Medical Center	Orlando	No	2
Halifax Medical Center	Daytona Beach	No	2
Broward County Medical Examiner's Office	Ft. Lauderdale	No	1
HealthSouth Doctors' Hospital	Coral Gables	No	1
Miami-Dade County Office of Medical Examiner Department	Miami	No	1
Naval Hospital (Jacksonville)	Jacksonville	No	1
Naval Hospital (Pensacola)	Pensacola	No	1
Naval Operational Medicine Institute	Pensacola	No	1
Nemours Children's Clinic	Jacksonville	No	1
Palm Beach County Public Health Department	West Palm Beach	No	1
Shriners Hospitals for Children (Tampa)	Tampa	No	1
St. Vincent's Medical Center	Jacksonville	No	1
Tallahassee Memorial HealthCare	Tallahassee	No	1
UHZ Sports Medicine Institute	Coral Gables	Yes	1
US Air Force Regional Hospital	Eglin AFB	No	1
Veterans Affairs Medical Center (Miami)	Miami	Yes	1

*Two of the UF-Gainesville programs are located in Pensacola

**Four of the USF programs are located in St. Petersburg; one is located in Clearwater

Source: Accreditation Council on Graduate Medical Education (ACGME)

Discussion

Compared to expanding medical school capacity, expanding residency opportunities provide a quicker turnaround for producing licensed practicing physicians (three to five years compared to seven to ten). Residency completers are also more likely to remain in-state to practice than medical school graduates (61 percent of residency completers remain in Florida compared to 49 percent of Florida medical school graduates).

The single largest impediment to using this approach to alleviate a physician shortage is the lack of funding available for residency positions. Given that federal funding, the largest explicit funding source for residency training, has been effectively frozen since 1997, funding from other sources, such as the state, would need to be targeted to promote the expansion and/or creation of new residency programs. As noted above, there are wide variations in the costs reported for the training of medical residents. Focusing solely on the direct costs which vary less than the indirect costs (approximately $90,000), if the state directly appropriated funds to support residency positions at 100 percent of the direct cost per resident ($90,000) that would result in an annual appropriation of $30.6 million to fund the additional 340 residency slots identified by Florida's existing medical schools as areas of expansion. If the state only funded half of the direct cost ($45,000) that would result in an annual appropriation of $15.3 million. With about 61 percent of Florida's medical

residents remaining in-state to practice, if 340 positions were added, 207 additional doctors would be practicing in Florida by the end of the decade.

Increasing residency positions is a less expensive option and more immediate option for the state in increasing the number of physicians practicing in the state. There are a few concerns to solely using residency positions as an option to addressing an immediate or impending physician shortage, though. Even with the addition of state funding, the establishment of residency programs remains a difficult proposition given the difficulty hospitals face in gaining accreditation and the necessity to find additional funds to support the program. Federal funding is strictly limited to new hospitals, hindering the ability of existing programs to expand. There is the concern of finding health care providers willing to offer residency training, given service delivery concerns (e.g., PLI rates), and able to offer residency training given the critical mass of clinical faculty and educational infrastructure needed to support such programs.

However, Florida has a large window of opportunity to grow in terms of the number of residency positions available, ranking 46th among the states in allopathic and osteopathic residency positions. Data presented above indicates that though there are enough first residency positions to support all of Florida's medical school graduates today, this will not likely be the case in the near future, especially in non-surgical specialties, given the enrollment increases occurring at existing schools, the growth of the Florida State University College of Medicine, and the new branch of the Lake Erie College of Osteopathic Medicine in Bradenton. Based on expansion that has already occurred in Florida, without added residency positions Florida medical school graduates, of whom about 60 percent already leave the state for residency training, will have fewer opportunities to choose from to remain in Florida to train. The consequence of this is the state will produce more medical school graduates, yet more will train out-of-state, and are less likely to return to Florida to practice.

Using Incentives to Attract Additional Physicians to the State

Education loan repayment/loan forgiveness programs provide physicians monetary incentives to relocate to underserved areas of the state. There are federal as well as state programs across the country providing such incentives. In the 1980's and 1990's state scholarship and loan repayment programs experienced great expansion. From the late 1980's to the mid 1990's state scholarship and loan repayment programs more than doubled from 39 programs in 1990 to 82 programs in 1996, with an estimated 1,306 physicians and 370 midlevel practitioners serving across all state programs in 1996.[9] These state programs shared a mission to influence the distribution of the health care workforce within their states' borders, an emphasis on primary care, and reliance on annual state appropriations and other public funding mechanisms.[10]

There are various recruitment incentive programs currently in law in Florida. However, these programs have not been funded in recent years. The Florida Health Service Corps (381.0302, F.S.) provided primary care physicians and select other health professionals up to $25,000 a year plus a 39 percent tax subsidy in exchange for service in a Health Professional Shortage Area (HPSA) for a minimum of 2 years. When in practice, this program funded ten scholarships and sixty-five loan re-payers. Program funding ended in June 1996. Medical Education Reimbursement and Loan Repayment Program (1009.65, F.S.) provided primary care physicians and select other health professionals up to $20,000 per year in loan repayment for service in a HPSA for a minimum of 2 years. The program is currently not funded. The National Health Service Corps (NHSC) State Loan Repayment Program requires a state to provide matching funds on a dollar-for-dollar basis. This program requires that health professionals must be in a full-time clinical practice at a public or nonprofit private entity located in federally designated HPSA including federally funded community and migrant health centers, federally qualified health centers, or other nonprofit comprehensive primary care service to underserved populations. Like the Florida Health Services Corps, this program awarded $25,000 per year for two years, plus a 39 percent tax subsidy. In addition participants were eligible for one year extensions of $35,000, plus the 39 percent tax subsidy. Currently no matching funds are appropriated for this program. The federal National Health Service Corps (NHSC) Scholarship program and Loan Repayment Program provide physicians and other select health professionals with incentives to serve in federally designated shortage areas.

Such programs, and in particular the NHSC, have been criticized over the years because a relatively small percentage of those assigned remain in underserved areas for long periods after their obligations. Between 1991 and 1993, 48 percent of NHSC loan repayment recipients and 27 percent of scholarship recipients were still at the site where they completed their service one year after fulfilling the program requirement.[11] Obstacles to retention include[12]: non-competitive incomes; lack of clinical and administrative support; "burnout" in small practices; and conflicts over health center management and working conditions

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[9] Pathman, Donald, et al. *State Scholarship, Loan Forgiveness, and Related Programs: The Unheralded Safety Net.* Journal of the American Medical Association, Volume 284 (16): 2084-2092, October 2000.

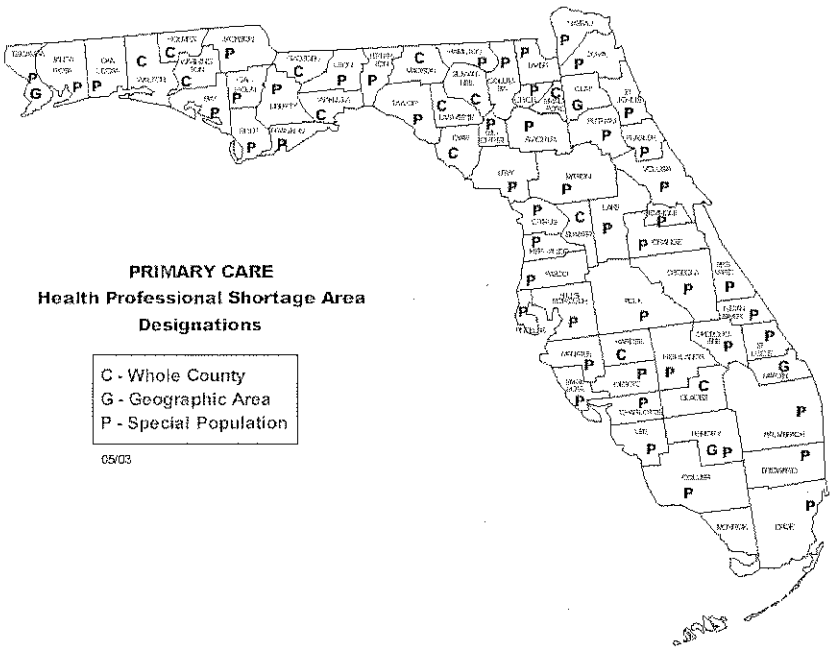
[10] Ibid

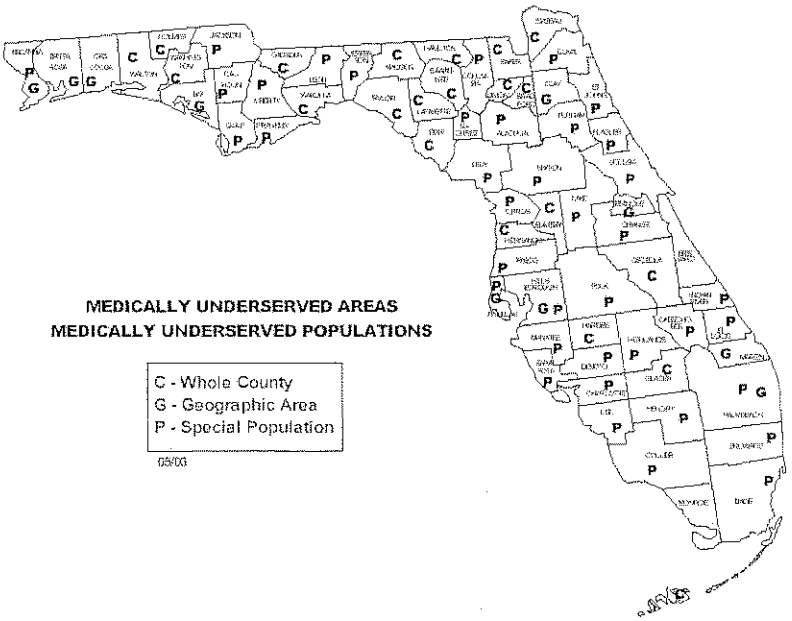
[11] General Accounting Office. (1995). *National Health Service Corps: Opportunity to Stretch Scare Dollars and Improve Provider Placement.* GAO/HEHS-96-28.

[12] *Tenth Report: Physician Distribution and Health Care Challenges in Rural and Inner-City Areas.* Council on Graduate Medical Education, February 1998.

Discussion

As of May 2003, each county in Florida, with the exception of Brevard County, was identified by the federal government to have either a medically underserved area (whole county or geographic region) and/or a medically underserved population. Thirteen whole counties in Florida were identified as Primary Care Health Professional Shortage Areas (HPSA) by the federal government.





Florida is not alone in having many underserved areas and/or populations. Nationally, there are 3,960 designated Health Professional Shortage Areas, Medically Underserved Areas, and Medically Underserved Populations. Scholarships and Loan Forgiveness programs are a useful tool to attract physicians to these underserved areas. Concerns remain over the value of these programs placing physicians in these areas long-term. Though that concern is valid, an active program of scholarships or loan forgiveness could provide a steady stream of new physicians to the area replacing those who leave once their obligations are fulfilled.

These programs can be especially attractive to recent graduates given the exploding growth in the debt burden of medical students. As tuitions have increased at Florida's medical schools, student debt loads have increased. The average debt for Florida's graduating medical students is $90,000, and 90 percent of all medical graduates have debt (Dr. Robert Watson, MD testimony to the Board of Governors Subcommittee on Medical Education, January 22, 2004).

Policy Recommendations

The Expansion of Residency Positions

POLICY RECOMMENDATION 3

To address the immediate and/or impending physician shortage in the state, the State of Florida should first pursue a policy of creating and expanding medical residency positions in the state.

POLICY RECOMMENDATION 4

Given the federal funding limitations on the expansion and creation of residency positions, the Legislature should provide direct state funding for the residency positions at a rate no less than half of the average estimated direct cost for residency training. Funding for residency positions should be targeted to areas of on-going critical need to the state.

The Use of Incentives to Attract Physicians to Florida

POLICY RECOMMENDATION 5

The Legislature should provide funding to the Florida Health Service Corps (381.0302, F.S.) and the Medical Education Reimbursement and Loan Repayment Program (1009.65, F.S.) as a means to immediately provide physicians to critically underserved areas.

The Expansion of Medical School Capacity

POLICY RECOMMENDATION 6

The expansion of medical school capacity should be pursued only after policies to immediately address a physician shortage have been implemented (increasing residency positions and funding scholarship and loan forgiveness programs).

Florida's relatively low rank nationally on the number of medical school seats to state population indicates that the state has room to grow in providing opportunities of medical education to its residents. However, given the time required for an incoming medical student to reach full licensed physician status is approximately seven to ten years (compared to 3 to 5 years for residency program completers), the likelihood that only about half of Florida's medical school graduates will remain in-state to practice (compared to 61 percent of residency program completers), and the growing lack of residency opportunities for Florida medical school graduates from UF, USF, UM, NSU and now FSU and LECOM to pursue in the state, any further expansion of medical school capacity before residency positions are increased would not result in any significant increase in the number of physicians actively practicing in Florida. In the long-term, the ideal would be an expansion of residency positions and medical school seats. However, for an immediate impact in increasing the number of physicians in Florida, the policies of increasing residency positions and the use of loan-forgiveness and scholarship programs are the most effective options for the state to pursue.

POLICY RECOMMENDATION 7

When expansion of medical school capacity is pursued, the options of expanding existing medical school capacity, establishing regional partnerships, and establishing new medical schools should be prioritized based on cost-efficiency.

APPENDIX A

Members of the Medical Education Study Advisory Committee

Name	Title	Affiliation
Dr. Akshay M. Desai	*Chairman*	*CEPRI*
Dr. William B. Proctor	*Executive Director*	*CEPRI*
Mr. Juan C. Copa	*Policy Director*	*CEPRI*
Dr. Mathis Becker	Chairman	Graduate Medical Education Cmte.
Dr. Thomas Breslin	Vice Provost for Academic Affairs	FIU
Dr. Robert Brooks	Associate Dean for Health Affairs	FSU
Ms. Linda Collins	Special Assistant to the Provost	UF
Dr. Peter J. (Jeff) Fabri	Associate Dean for Graduate Medical Education, USF College of Medicine	USF
Dr. Michael Friedland	Sr. Associate Dean	FAU
Dr. Debi Gallay	Sr. Special Assistant for State Budget and Policy	FIU
Dr. Pat Haynie	Associate Vice President, Health Sciences	USF
Dr. Denise Heinemann	Dean, College of Health Professions	FGCU
Dr. Terry Hickey	Provost and Vice President of Academic Affairs	UCF
Dr. Carlos Martini	Medical School Project Director	FIU
Dr. Nancy McKee	Vice Chancellor	Division of Colleges and Universities
Dr. Mark O'Connell	Senior Associate Dean for Medical Education	UM
Ms. Linda Rackleff	Director	Council of Florida Medical School Deans
Dr. Lynn Romrell	Professor and Associate Dean for Medical Education	UF
Dr. Mark Rosenberg	Provost and Vice President of Academic Affairs	FIU
Dr. Venkat Sharma	Director, Health Sciences Advisory Programs	UWF
Dr. Anthony Silvagni	Dean, College of Osteopathic Medicine and Chair of Council of Florida Medical School Deans	Nova Southeastern University
Dr. Steve Ullmann	Vice Provost, Faculty Affairs	UM
Dr. Robert Watson	Sr. Associate Dean for Educational Affairs, UF College of Medicine	UF

APPENDIX B
PARAMETERS OF A MODEL TO QUANTIFY THE ADEQUACY OF THE PHYSICIAN WORKFORCE IN FLORIDA

SUPPLY

Concept	Issues	Model Parameters	Data Availability
Demographics Age Race/Ethnicity Gender	➢ Florida has the oldest physician workforce in the nation (26% over the age of 65, and 10% under the age of 35). ➢ Florida has a very ethnically diverse population, yet minorities are underrepresented in the physician workforce. ➢ Females make up a greater percentage of medical school graduates than in the past. ➢ Study of the physician workforce in Canada shows that women practice at a lesser rate than men at younger ages (30 to 50), but after age 50, women practice at higher rates than men.	As proposed by the Florida Health Care Practitioner Workforce Database (referred to as "database") (HB 1075 and SB 1154, from the 2004 Legislative Session): ➢ Licensed physicians by age, race/ethnicity, and gender ➢ Florida medical school graduates by age, race/ethnicity, and gender ➢ Completers of Florida graduate medical education (i.e., residency) programs by age, race/ethnicity, and gender ➢ Account for differences in expected workload between physicians by gender	➢ Licensure data from the Board of Medicine and the Board of Osteopathic Medicine and practitioner profile data collected by the Department of Health currently provide basic demographic indicators for licensed physicians. ➢ There are data quality concerns: ➢ Information is self-reported in a non-standardized form.

Concept	Issues	Model Parameters	Data Availability
Physician Practice Status	➢ Workforce needs analysis must focus on physicians involved in patient care.	As proposed by database: ➢ Percentage of time physicians are involved in patient care ➢ Expected changes in the amount of patient care or services within the licensure renewal period (2 years) ➢ Indication of approximate date of expected retirement	➢ Data on physician practice status not currently available. ➢ Status of the license (active, inactive) known; whether physician is practicing unknown.
Specialty	➢ Florida ranks 16th in overall total physicians-to-100,000 population. ➢ Ranking on overall physicians per 100,000 population masks shortages that may exist by specialty.	➢ Number of physicians by specialty As proposed by database: ➢ To provide a clear identification of physicians by specialty, data provided by licensure applicants should include an indication of principle area(s) of practice; date of initial board certification; and date of most recent re-certification. ➢ For Florida medical school graduates: ➢ Type of graduate medical education program graduates plan to enter ➢ Identification of type of programs during postgraduate year 1 and year 2 for graduates entering preliminary or transitional positions during postgraduate year 1	➢ No central data source currently exists for all specialties. .

Concept	Issues	Model Parameters	Data Availability
Place of Education and Training	➢ One approach to dealing with a physician shortage is to attract more trained physicians practicing in other areas to Florida. ➢ Florida currently imports four-fifths of all its physicians from other states and countries.	As proposed by database: Data elements indicating the path physicians followed to get to Florida: ➢ Location of medical school attended – using standard codes to prevent misidentification ➢ Location of graduate medical education program – requiring license applicants to indicate the state and country of training ➢ Location of previous employment	➢ Data currently collected by the Department of Health's practitioner profile database on physician's medical school, its location and the location of graduate medical education training are self-reported by physicians to an open-ended questionnaire which is not standardized for analysis. ➢ Projections of the number of Florida medical school graduates for the next few years

Concept	Issues	Model Parameters	Data Availability
Quality of Care and Safety of Practice	➢ Medical education and training is inconsistently regulated in foreign countries. ➢ International Medical Graduates (IMGs) account for 35% of Florida's physician workforce; with a greater dependence on IMGs in certain parts of the state (43% in South Florida). ➢ Like specialty, ranking on overall physicians per population masks the quality of training of the physicians. ➢ Licensing requirements should not be relaxed to increase the number of physicians. Florida already has lesser requirements than other states (e.g., only requiring one year of residency training, as opposed to three) – raising potential concerns over quality of care.	➢ Number of IMGs, future projections As proposed by database: ➢ Location of medical school and graduate medical education program – requiring license applicants to indicate the state and country of training ➢ Account for hypothetical changes in licensing requirements	Licensure data, but data quality concerns remain

Concept	Issues	Model Parameters	Data Availability
Service Delivery Conditions ➢ Malpractice Insurance Costs ➢ Geographic Location of Practice	➢ Concerns over issues of malpractice insurance costs hinder the ability of doctors to locate in Florida, practice certain specialties (e.g., OB/GYN), and be trained in certain specialties. ➢ Increased Professional Liability Insurance (PLI) rates affect medical schools in the following ways: ➢ Challenge with preceptors (pre-doctoral students on clinical rotations) – there is a perception of increased liability risk for physicians who take these students. ➢ Potentially decreases training of medical students in certain specialties. ➢ Decreased potential interest of medical school students taking a residency in Florida because of malpractice insurance cost concerns. ➢ Issues continue to remain about the availability of doctors in underserved (rural, inner-city) areas.	<u>Location of practice</u> ➢ Number of physicians by area (underserved locations) As proposed by database: ➢ Information on secondary practice location(s) and the approximate percentage of time spent in practice at each location. This would provide an indication of physician coverage of different geographic areas. <u>Malpractice Insurance Costs</u> ➢ Account for hypothetical changes in malpractice insurance rates and policies	<u>Location of Practice</u> ➢ Department of Health currently gathers data necessary for recommending areas for designation by the federal government as health professional shortage areas. ➢ Physicians are currently required to submit data on primary practice location.

Concept	Issues	Model Parameters	Data Availability
Generational Changes	➢ Younger medical students/residents are less likely to work long hours and more likely to change careers	➢ Physicians by age group ➢ Account for the workload patterns of younger physicians	➢ Licensure data for age of physicians, but data quality concerns remain
Public Perception	➢ Having a medical school located in the community will have great appeal to a local area (e.g., local pride, heightened perception of the local institution and community).	➢ Difficult to quantify	➢ Surveys

DEMAND

Concept	Issues	Model Parameters	Data Availability
Population Growth	➢ Florida is one of the fastest growing states in the country, and some areas of the state and segments of the population are especially growing at high rates.	➢ Population growth (per 100,000) ➢ Statewide ➢ By region ➢ By age category ➢ By race/ethnicity ➢ By socio-economic status	➢ Data available on population growth projections statewide and regionally (e.g., US Census)
Economic Indicators	➢ Studies have shown (e.g., Cooper et al.) due to a high correlation between the size of the economy and the number of physicians in the United States, there are causal links between the nation's wealth, its demand for health services, and the demand for health professionals to deliver those services.	➢ Gross State Product (GSP) per capita as an indicator of the size of the state's economy.	➢ Data available

Concept	Issues	Model Parameters	Data Availability
Issues of the "Pipeline" into Medical Education	➢ If medical school capacity is increased in Florida, are there enough "qualified" Florida applicants to fill the expanded slots in medical school?	➢ Number of Florida applicants to any medical school in the country: ➢ By MCAT score threshold ➢ By GPA	➢ Data available from American Association of Medical Colleges (AAMC).

APPENDIX C

House Bill 1075, from the 2004 Legislative Session
Florida Health Care Practitioner Workforce Database

A bill to be entitled

An act relating to a health care practitioner workforce database; creating s. 381.03015, F.S.; providing legislative intent with respect to a health care practitioner workforce database; providing definitions; creating the Florida Health Care Practitioner Workforce Database within the Department of Health; authorizing the database to be implemented in stages; giving priority in the database for information concerning allopathic and osteopathic physicians; specifying data elements of allopathic and osteopathic physicians for inclusion in the database; requiring that data for the health care practitioner workforce database be gathered from existing data sources; requiring certain entities to provide data elements to the department; authorizing the department to create an advisory committee; requiring the department to adopt rules; providing that the act will not take effect unless funds are specifically appropriated for this purpose; prohibiting the use of a specified trust fund to administer the act; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. Section 381.03015, Florida Statutes, is created to read:

381.03015 Florida Health Care Practitioner Workforce Database.--

(1) LEGISLATIVE FINDINGS AND INTENT.--

(a) The Legislature finds that the state health policies designed to expand patient access and improve the quality of health care delivery must take into consideration the supply, distribution, diversity, academic preparation, and utilization of the state's health care workforce. The Legislature further finds that the absence of accurate, objective, relevant, and

timely data concerning the health care workforce in this state is a barrier to developing and implementing optimal programmatic and fiscal policies relating to the education and training of health care practitioners and the delivery of health care services.

(b) In order to eliminate these barriers, it is the intent of the Legislature to create the Florida Health Care Practitioner Workforce Database within the Department of Health. The database shall provide the capacity for the collection, compilation, maintenance, and analysis of data concerning the state's health care workforce. It is further the intent of the Legislature that the workforce database serve as the official state repository of data that can be used by the Legislature, the Executive Office of the Governor, state agencies, and state, regional, and local entities involved in planning, analysis, and policy development for the health care workforce and in the delivery of health care services.

(2) DEFINITIONS.--As used in this section, the term:

(a) "Department" means the Department of Health.

(b) "Health care practitioner" has the same meaning as provided in s. 456.001.

(3) FLORIDA HEALTH CARE PRACTITIONER WORKFORCE DATABASE.--

(a) The Florida Health Care Practitioner Workforce Database is the electronic repository of data elements for each health care profession identified by the department for inclusion in the database. Data elements shall be maintained for as many years as necessary to allow for an analysis of longitudinal trends. To the maximum extent feasible, data elements must be collected and maintained using standardized definitions in order to allow for multistate or national comparisons of this state's data.

(b) The workforce database may be implemented in phases; however, the highest priority must be given to including the data elements for allopathic and osteopathic physicians in the database. Inclusion of data elements for other health care practitioners may be accomplished in subsequent phases, as resources allow, with priority given to the inclusion of health care practitioners who are subject to the practitioner profiling system under s. 456.041. The department shall develop an

implementation plan that recommends the priority order in which other health care practitioners may be added to the database, identifies the data elements to be collected for each group of health care practitioners, and provides an estimate of the cost associated with the addition of each group of health care practitioners to the database. The data elements collected for nurses shall be identified by the department, based upon recommendations made by the Florida Center for Nursing. The implementation plan shall also provide an analysis of technical issues and an estimate of the costs associated with collecting the following data elements for allopathic and osteopathic physicians through the licensing processes of the Board of Medicine and the Board of Osteopathic Medicine under s. 456.039 or through the profiling process for health care practitioners under s. 456.041:

1. The physician's secondary practice location, if any, including the street address, municipality, county, and zip code.

2. The approximate number of hours per week spent in each practice location.

3. Each practice setting, by major category of practice setting, including, but not limited to, office-based practice, hospital-based practice, nursing home, health maintenance organization, and county health department.

4. Whether the physician is a full-time member of a medical school faculty.

5. Whether the physician plans to reduce his or her practice volume by a significant percentage within the effective period of the currently held license.

The implementation plan shall be submitted to the Governor and the presiding officers of the Legislature by December 1, 2005.

(4) DATA ELEMENTS.--The data elements for allopathic and osteopathic physicians shall include the following:

(a) Data elements for each allopathic and osteopathic physician licensed to practice in this state:

1. Name.

2. Date of birth.

3. Place of birth.

4. Gender.

5. Race.

6. Social security number.

7. Name of medical school.

8. Year of graduation from medical school.

9. Location of medical school.

10. Name of each graduate medical education program completed.

11. Year of completion of each graduate medical education program.

12. Location of each graduate medical education program completed.

13. Type of each graduate medical education program completed, such as internship, residency, or fellowship.

14. Each medical specialty or subspecialty that the physician practices.

15. Each medical specialty board certification held.

16. The primary practice location, including the street address, municipality, county, and zip code for each location.

(b) Data elements for each graduate of a Florida allopathic or osteopathic medical school:

1. Name.

2. Date of birth.

3. Place of birth.

4. Gender.

5. Race.

6. Social security number.

7. Name of medical school.

8. Year of graduation from medical school.

9. Name and location, by state and country, of the graduate medical education program that the graduate plans to enter.

10. Type of graduate medical education program, such as internship or residency, which the graduate plans to enter, including the identification of graduate medical education programs during postgraduate years 1 and 2, if applicable, for graduates entering preliminary or transitional positions during postgraduate year 1.

(c) Data elements for each allopathic or osteopathic

physician completing a graduate medical education program in this state:

1. Name.

2. Date of birth.

3. Place of birth.

4. Gender.

5. Race.

6. Social security number.

7. Name of medical school.

8. Year of graduation from medical school.

9. Location, by state and country, of the medical school.

10. Name and location, by state and country, of the graduate medical education program.

(5) REQUIRED USE OF EXISTING DATA SOURCES.--It is the intent of the Legislature to minimize the cost of creating and operating the Florida Health Care Practitioner Workforce Database and to avoid unwarranted duplication of existing data. Therefore, to the maximum extent possible, the data included in the workforce database shall be derived from existing data sources except as provided in paragraph (6)(a). New data shall be collected for inclusion in the workforce database only when the department determines that such data are essential for evaluating and analyzing the health care professions and when the data cannot be obtained from existing sources.

(6) SOURCES AND SUBMISSION OF DATA ELEMENTS.--

(a) Data elements sought to satisfy paragraph (4)(a) shall be obtained from the licensing processes of the Board of Medicine and the Board of Osteopathic Medicine under s. 456.039 and from the profiling process for health care practitioners under s. 456.041. In addition to the data collected under ss. 456.039 and 456.041, the Board of Medicine and the Board of Osteopathic Medicine shall collect the following data from each person applying for initial licensure or licensure renewal to practice medicine or osteopathic medicine as a physician after July 1, 2005, and the Department of Health shall enter the data into the database used for licensure or an equivalent database:

1. The place of the applicant's birth.

2. The state and country of the medical school from which the applicant graduated.

3. Each medical specialty or subspecialty that the physician practices.

(b) Each medical school in this state shall annually submit the data elements described in paragraph (4)(b) to the department, in a manner prescribed by the department, for each medical student who provides written consent to the medical school authorizing the release of his or her data to the department.

(c) Each graduate medical education program in this state shall annually submit the data elements described in paragraph (4)(c) to the department, in the manner prescribed by the department, for each intern or resident who provides written consent to the residency program authorizing the release of his or her data to the department.

(7) IMPLEMENTATION.--

(a) The Secretary of Health may establish an advisory committee to monitor the creation and implementation of the Florida Health Care Practitioner Workforce Database.

(b) The department may employ or assign agency staff or may contract, on a competitive-bid basis, with an appropriate entity to administer the workforce database.

(8) RULEMAKING.--The department shall adopt rules under ss. 120.536(1) and 120.54 to administer this section.

Section 2. This act shall not take effect unless sufficient funds are allocated in a specific appropriation or in the General Appropriations Act for the 2004-2005 fiscal year to fund the Florida Health Care Practitioner Workforce Database. The Medical Quality Assurance Trust Fund may not be used to fund the administration of this act.

Section 3. This act shall take effect upon becoming a law.