Consortium for Education, Research, and Technology
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Building North Louisiana's Primary Care Workforce

Sustaining the Medical Home

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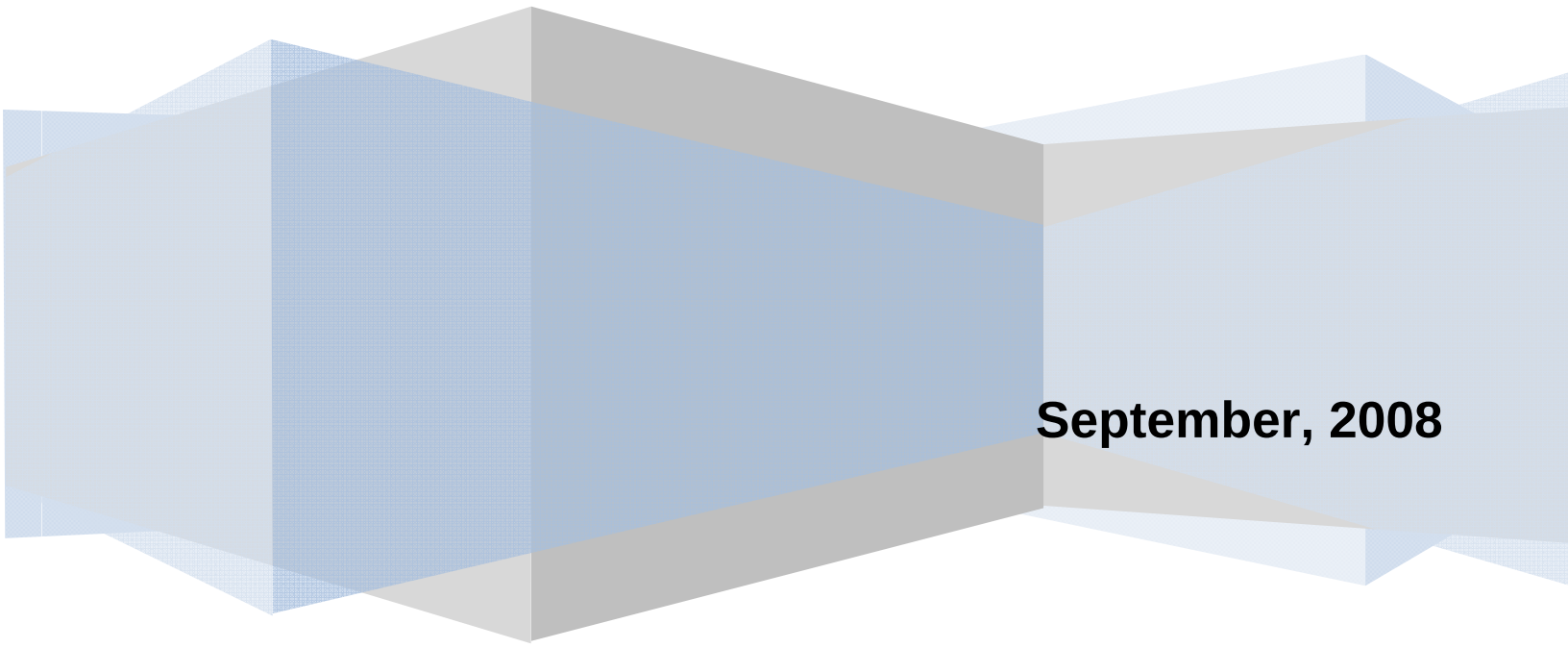

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Executive Summary

At least 56 million or one in five Americans are medically disenfranchised and therefore, likely to experience compromised health outcomes related to a lack of consistent, high quality preventive and primary health care services. This dilemma results in higher costs for health care delivery by leading to poor health outcomes related to chronic illness and increased hospitalizations. This is true regardless of whether individuals have health insurance or if they reside in a health professional shortage area or medically underserved area (MUA) without access to a *usual source of care (USC).* Nationwide, 32% of those without a usual source of care are uninsured and 21% are below the poverty level. Over one third of Louisiana's population is disenfranchised and nearly half of the uninsured adults are without a *usual source of care*. A usual source of care is believed to be an even greater predictor of an individual's likelihood of receiving health care than having insurance. Medical homes provide a usual source of care and demonstrate improved health outcomes and lower costs of care.[3] A medical home integrates patients as active participants in their own health and well-being. Patients are cared for by a physician who leads the medical team that coordinates all aspects of preventive, acute and chronic needs of patients using the best available evidence and appropriate technology. These relationships offer patients comfort, convenience, and optimal health throughout their lifetimes. [16]

Medically Disenfranchised:
- 1 in 5 Americans
- 1 in 3 Louisianans

The **Risk**:
- Poor health outcomes
- Increased cost burden

These facts provide obvious links to meeting the Institute of Medicine[1] goals for high quality, evidence-based, effective, patient-centered care for Louisiana's population. Most obvious is the need for a system that provides usual sources of care accessible in the communities of residence. The next obvious link is the adequacy of the workforce to sustain this care concept. The final obvious link is the capacity of the education system to produce the numbers of graduates for sustainability of the medical home workforce.

The purpose of this descriptive study is to inventory the current workforce and supply chain to identify and describe capacity, gaps, and barriers affecting sustainability of a medical home workforce across north Louisiana (OPH Regions 7- 8). Evidence-based strategies to close the identified gaps are proposed, including identification of regional partnerships that could support the targeted workforce development and sustainability.

*Significant primary care provider shortages currently exist and are likely to **increase** over the next five years.*

Significant shortages in the medical home workforce currently exist and are predicted to increase over the next five years. There are also shortages among primary care physicians and other health care providers, particularly nurses. The electronic health record is an essential element of the medical home. Trained health information management professional and clerical support staff for information technology will also be insufficient to meet the needs. Smart change resulting from innovative thinking about social variables is recommended.

Health education, from pipeline to practice, is the pivotal point for change. Success of a health care system driven by the medical home model is dependent on a

Use a developmental approach to building the workforce—employing a life course perspective to embrace the unique generational needs of today's students.

cultural evolution of health care education programs. Strategies include interdisciplinary and collaborative education, distributed learning that moves large portions of health education out of the tertiary care centers and into the community setting, and increased training in informatics and telehealth, with emphasis on population-based health care, outcomes research, and evidence-based practice. Tuning the education system to incorporate a developmental approach that employs a *life course perspective* to embrace generational needs of today's student is crucial. Improving the attractiveness of incentives to allow on-going awards such as tax credits for practices that serve disenfranchised populations and help offset costs for implementation of an EHR and telehealth delivery systems are recommended. Other currently employed recruitment efforts should be continued. Partnerships should be created to encourage resource sharing, innovation, funding directed toward economic development and improved quality of life. A marketing plan aimed at consumer awareness of medical home concepts, health care provider roles, and empowerment through participation in one's own care is crucial.

Assessing the Medical Home Workforce

The critical nature of the need to redesign America's health care delivery system is a known fact. To that end, the Institute of Medicine's *Crossing the Quality Chasm: A New Health System for the 21st Century* report[1] established six aims as goals or characteristics of an optimized health system: safe, effective, patient-centered, timely, efficient, and equitable.[1] Health disparities among identified segments of the population, escalating costs of health care, and shortages of primary care health professionals are among the challenges facing the redesign process. Much of the disparity can be linked to health care *access* issues. The uninsured or disenfranchised patient as well as patients with publicly funded insurance, frequently report not having a medical home or primary care physician, a situation that precludes early diagnosis and treatment and continuity of care or effective management of chronic conditions. Lack of care management increases costs and decreases quality of health care. The optimal solution to the access problems is a system that provides effective, timely access to equitable, quality care to all individuals, regardless of income level, insurance status, or location. This means that every person should have access to a primary care provider close to home who can deliver patient-centered care on a continuum that maximizes early diagnosis and intervention, preventive care, health promotion and collaboration across setting with the total care team to coordinate care and improve health outcomes for individuals and communities.

***Access** to primary care is core to health care redesign.*

Rural America, home to about 20% of the U.S. population, includes communities with health needs

that vary from those of urban communities and among themselves, but a constant is that they often lack “access to core health care services”(p. 2) [2] IOM identified five strategic actions to address the unique quality issues of rural areas:

- Adopt an integrated, prioritized approach to addressing both personal and population health needs at the community level;
- Establish a stronger quality improvement support structure to assist rural health systems and professionals in acquiring knowledge and tools to improve quality;
- Enhance the human resource capacity of rural communities, including the education, training, and development of health care professionals and the preparedness of rural residents to engage actively in improving health and health care;
- Monitor rural health systems to ensure that they are financially stable and provide assistance in securing the necessary capital for system redesign; and
  invest in building ICT infrastructure, which has enormous potential to enhance health and health care over the coming decades(p.3). [2]

Health Centers Serve…
- 1 in 8 Medicaid beneficiaries
- 1 in 7 uninsured persons including
  -1 in 5 low income uninsured
- Nearly 1 in 3 people in poverty
- 1 in 10 minorities
- 1 in 9 rural Americans

NACHC (2008)

Community health centers serve over 17 million people, providing primary care to underserved populations, regardless of insurance status or ability to pay. [3] According to the National Association of Community Health Centers (NACHC), health centers provide care to a diverse cross-section of otherwise underserved people. Interesting characteristics of health centers include patients who are more likely to have a chronic illness than patients of office-based physicians, rising use rates for patient visits, and a

significant increase in Medicaid and uninsured patients in the last 5 years. Centers provide 22% of all uninsured ambulatory care visits and their patients are twice as likely to get the care they need than other uninsured. Besides medical care, many centers also provide behavioral health, dental, and other enabling services. Patients receive significant education toward health promotion and disease prevention by nurses in health centers, allowing them to be participatory in their own health and leading to better outcomes. Center visits are on the rise. The medical home is a type of community health center.

According to the National Committee for Quality Assurance, "the *Patient Centered Medical Home* is a health care setting that facilitates partnerships between individual patients, and their personal physicians, and when appropriate, the patient's family. Care is facilitated by registries, information technology, health information exchange and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner."[4] Design of a medical home model is based on population distribution, staffing, and information infrastructure.

Regardless of the approach selected, access and costs remain the most pressing challenges. Other barriers include geographical imbalances in health care professional workforce, medical underservice – uninsured and disenfranchised populations, provider choices, and provider-to-population imbalances. Essential to solving access problems depends on:

- Sufficient supply of primary care health professionals
- Distribution of primary care workforce to serve populations and areas of greatest need, and

- "right provider in the right place and the right time and in the right amount."

Access = *the right provider in the right place and the right time and in the right amount.*

Louisiana has a unique opportunity to reconfigure our healthcare system by creating performance-based service models that lead to better outcomes. One strategy is the development of a linked system of medical homes that serve as usual sources of care sufficient to create access to primary care for all residents.

Louisiana residents have some of the poorest health outcomes in the nation and the state's health care spending is among the highest in the nation. Most of the parishes in the state are designated a HPSAs/MUAs/MUPs and much of the state is rural. Education levels are low and there is a significant burden of poverty. These conditions alone describe the need for health care redesign in order to improve the access to care, quality of care, and health outcomes. However, to further impact the critical nature of the issues, recent hurricanes have demonstrated the escalation of problems associated with health and health care delivery when large numbers of the population are displaced and access to medical records is lost.

Resolving the issues surrounding the health care system in Louisiana is crucial. These issues can be distilled to four critical variables: quality, effectiveness, access, and information management. The focus of this study is on development of a workforce to sustain a system of medical homes to serve a segment of the residents of Louisiana. While the study targets workforce as an essential strategy to increase access, ultimately, this information influences all four critical variables. The patient-centered Medical Home (PC-MH) is an *approach* to providing comprehensive primary care that integrates patients as active participants in their own health and well-being. Patients are

cared for by a physician who leads the medical team that *coordinates* all aspects of preventive, acute and chronic needs of patients using the best available evidence and appropriate technology. These relationships offer patients comfort, convenience, and optimal health throughout their lifetimes.[5] Key to this definition is *approach*. Medical home (MH) is a *conceptual* approach to health care delivery that is more complex than any single setting. *Care coordination* is imperative to the model that is driven by care management for chronic conditions, education toward prevention, and ambulatory care needs. Care coordination means that the primary care provider partners with the patient and manages interactions with a team of care providers, utilizing specialists and resources in other settings as needed. Direct primary care can be provided by a physician, advanced practice registered nurse, or physician's assistant. Essential to the coordination aspect of care is incorporation of an electronic health record (EHR) to make patient information available at the time and place of need across the greater health care system. Information sharing is a primary need for delivery of high quality, patient-centered care within a system. This is a safety aspect of care and it increases effectiveness by minimizing redundancy in resource utilization. Quality and e*ffectiveness* are built on establishing a usual source of care and fostering development of the relationship between the primary care provider and the individual patients.

The PC-MH is an *approach* to coordinated care

Effectiveness is built on development of the relationship between the primary care provider and the individual patients.

The medical home concept can be operationalized in different ways. It can be a clinic within a major medical center, a primary care physician's office, a community health center, a rural health center, a school-based clinic, or other physical place for

coordinated delivery of patient-centered primary health care, regardless of funding sources for the MH. For instance, a MH can be a federally funded clinic such as an FQHC or a clinic supported by faith-based resources. The ideal MH would have a mix of patients from uninsured to federally insured to privately insured. The ideal MH would be near a patient's home, so that it is convenient and used regularly. The key is that patients *perceive and utilize* the MH as their usual source of care. This practice improves health outcomes because it is patient-centered and it decreases the burden of ambulatory care provided in an emergency room setting. A by-product is improved patient satisfaction with care and an increased likelihood of compliance and consistency of seeking regular and routine care, both of which lead to improved health outcomes.

> The key is that patients **perceive and utilize** the medical home as their *usual source of care* (USC).

The purpose of this descriptive study is to inventory the current workforce and supply chain to identify and describe capacity, gaps, and barriers affecting sustainability of a medical home system across north Louisiana (OPH Regions VII and VIII). Further, evidence-based strategies to address identified individual and community needs are recommended, including identification of regional potential partnerships to support the targeted workforce development and stability.

There are multiple populations of interest in this study. The workforce to staff and sustain the MH model of care is the population of primary interest, but that cannot be determined without understanding and describing the health care consumer population and the educational programs that prepare the workforce. The workforce need is derived from the difference between the care providers and support staff required to provide primary care to the identified north Louisiana residents and the capacity of the

educational programs to recruit, retain, and graduate individuals qualified to fill the workforce needs. It is the objective of this study to determine a valid estimate of workforce need and any gaps between supply and demand to sustain a system of medical homes that can effectively provide primary care to targeted residents.

Data were collected to describe the status of the medical home workforce. Extensive data-mining from both national and state databases was conducted to develop profiles of the current population and health care access variables by geographic area and health care resources. These data were triangulated to establish current access needs and project future needs based on national benchmarks.

North Louisiana's Story

At least 56 million or one in five Americans are medically disenfranchised and therefore, likely to experience compromised health outcomes related to a lack of consistent, high quality preventive and primary health care services. This dilemma results in higher costs for health care delivery by leading to increased chronic illness and hospitalizations. This is true regardless of whether individuals have health insurance or if they reside in a health professional shortage area (HPSA) or medically underserved area (MUA) without access to a usual source of care. Nationwide, 32% of those without a USC are uninsured and 21% are below the poverty level.[6]

Health centers will lead the way toward a system of care focused on quality and performance – continuing to develop measurements, reporting systems, guidelines and best practices that bring innovation and efficiency to the primary care system. By

integrating health information technology (HIT) into operations, health centers will connect more effectively with the entire health care system – reducing medical errors, demonstrating results, and saving time and money that can be spent on reaching more patients.[7] The EHR also supports primary care provider-to-patient collaboration and encourages patient input into a personal health record (PHR).

Since the medical home is not tied to place, but rather, is the concept of a usual source for primary care that is patient-centered, building a relationship between the health care provider and the patient, a MH will ideally be near enough to patients for on-going, regular access, but also can be accessed virtually using various modes of telehealth (email, web-monitoring, virtual consults and patient encounters. Having a USC is believed to be an even greater predictor of an individual's likelihood of receiving health care than having insurance. A medical home, as a USC in a community, can demonstrate positive impact on health outcomes and costs of care.[13]

A medical home (MH) is a *concept of a usual source for primary care* that is patient-centered, building a relationship between the health care provider and the patient.

Louisiana shares many of the nation's health care issues—access, costs, poor health outcomes, health care professional shortages. More than one third (37.6%) of Louisiana's population is disenfranchised and nearly half (49.5%) of the uninsured adults are without a *usual source of care*. (NACHC, *Access Denied*, 2005). Eighty-six percent of the parishes are designated as HPSAs, MUAs, and MUPs (medically underserved populations).[8] Louisiana ranks 50th for cardiovascular deaths (224.4/100,000), cancer deaths (361.8/100,000) and infant mortality (9.7/1000 live births).[9] Health care redesign is imperative.

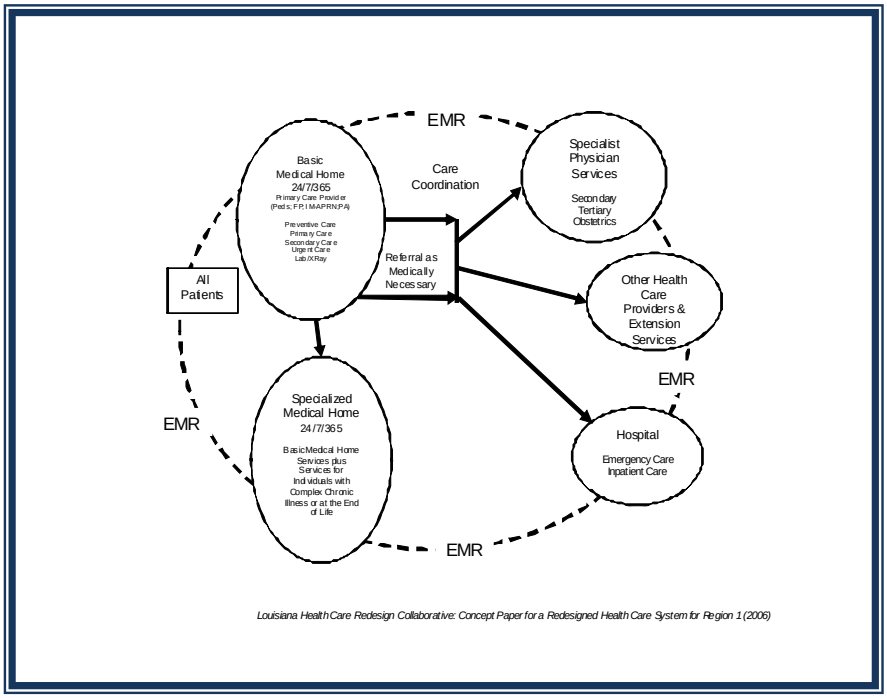
In recent years, there is an increased momentum in activities directed toward improving access and quality of primary care delivery across Louisiana. Devastation precipitated by Hurricanes Katrina and Rita in 2005, served as a catalyst for redefining and rebuilding the health care system. Prior to the storms, change efforts such as Medicaid Community Care, were in progress and post-storm efforts often build on previous initiatives. The shared desire among both pre and post efforts is to provide primary care that is more accessible, patient-centered and that provides effective, evidence-based care. The time is right for change in the health care delivery system. Several evidence-based initiatives have been proposed. Using the 2001 Institute of Medicine (IOM) report, *Crossing the Quality Chasm: A New Health Care System for the 21st Century* as a framework, Price Waterhouse Coopers (PWC) submitted *Report of Louisiana Health Care Delivery and Financing System* to the Louisiana Recovery Authority in 2006.

> *The medical home model being proposed seeks to address the criteria set forth by both the IOM and the Collaborative. A strong preventive and primary care system will be the foundation on which the redesigned health care system will be built. This model will reduce the high costs associated with the current reliance on emergency departments for the care of urgent, ambulatory-sensitive conditions.. The evidence shows that such a model will improve health and can reduce the glaring disparities in health that exist among Louisiana's sub-populations.*

> *The medical home model forms the foundation for coverage of the uninsured, as well as for the ultimate transformation of the way care is provided in the current Medicaid program. Ideally, the medical home model will eventually be applied across all spectrums – including the private sector. This should result in better quality and lower costs and ultimately will improve access to health insurance. There is no point in providing more coverage if the only coverage available is based on models that are not designed to get the best outcomes. The medical home service delivery model will ensure access to core evidence-based health care services, emphasizing convenient, comprehensive primary care. Additionally, it will ensure appropriate specialty care, inpatient services, and affordable pharmaceuticals, emphasizing both patient and provider accountability.*
>
> *Price Waterhouse Coopers (2006)* [10]

The *Louisiana Health Care Redesign Collaborative* (LHCRC), following Hurricanes Katrina and Rita, put forth a concept paper to the Centers for Medicare and Medicaid Services (CME) for a redesigned health care system. A MH model

Figure 1. Region 1: Medical Home System of Care



was presented. The premise is that various components are organized into a true system of health care across the entire continuum: primary, secondary, tertiary, and long-term care. [10]

The focus of the report was on OPH Region I and the primary tenet was the development of a medical home model system of care for Region I that might be adopted across the state. The goal was to demonstrate improved health care quality for Medicare and Medicaid recipients, while addressing the high uninsured rate in the entire state. The plan considered rural communities, particularly the health care professional shortages, roles of rural hospitals as safety nets, and the limitations of financial resources. [10]

Another initiative that supports the medical home concept is the Louisiana Health Care Quality Forum (LHCQF). The LHCQF Medical Home Committee believes in the benefits of MHs to the health care system, but more importantly, believes in the benefits to patients:

The Medical Home from the Patient's Perspective

> *"In this new model, the traditional doctor's office is transformed into the central point for Americans to organize and coordinate their health care, based on their needs and priorities. At its core*

is an ongoing partnership between each person and a specially trained primary care physician. This new model provides modern conveniences, like e-mail communication and same-day appointments; quality ratings and pricing information; and secure online tools to help consumers manage their health information, review the latest medical findings and make informed decisions. Consumers receive reminders about necessary appointments and screenings, as well as other support to help them and their families manage chronic conditions such as diabetes or heart disease. The primary care physician helps each person assemble a team when he or she needs specialists and other health care providers such as nutritionists and physical trainers. The consumer decides who is on his or her team, and the primary care physician makes sure they are working together to meet all of the patient's needs in an integrated, 'whole person' fashion."

Report of the Future of Family Medicine[13]

This report spotlights 5 medical home demonstration projects that are in the development, implementation or evaluation phase in Louisiana. These programs span geography, payer type, population focus and purpose.

Building on the MH concept, *Louisiana Health First* is a PCMH demonstration project proposed by the Louisiana Legislature under the Health Care Reform Act of 2007 that directs the Department of Health and Hospitals (DHH) to develop and pilot a new system of care that will increase access, improve quality, and provide sustainability

in medical care for the Medicaid and uninsured populations.[14] This demonstration project establishes a medical home model that incorporates a Provider Service Network (PSN) to manage care for Medicaid recipients. PSNs offer the system structure required to coordinate and enhance access, quality, and efficiency of care across the continuum, including access to appropriate specialty care and inpatient services. They also foster provider:patient partnership by providing means for enhanced integration of services and increased consumer choice and electronic information-sharing.

> *The medical home system of care shall incorporate the use of health information technology and quality measures to facilitate a safe, patient-centered, quality driven, evidence-based, accessible, and sustainable health care system to Medicaid recipients and low-income uninsured citizens.* [14]
>
> State of Louisiana Department of Health and Hospitals, 2008.

Subsequently, with the momentum of these stakeholders, the medical home concept is gaining traction as a main focus in health care reform in Louisiana.

The medical home concept is gaining traction as a main focus in health care reform in Louisiana.

The premise of this study is based on the assumption that the demonstration project developing a system of medical homes to provide primary and preventive care for designated people in north Louisiana is to be implemented forthwith. Therefore, there is an urgency to providing the information delineated in this report. The difference in the data presented in this study and the workforce data applicable to the *Louisiana Health First* proposal is that the scope of the C.E.R.T. Medical Home Workforce analysis addresses both OPH Region 7 and

Region 8 and the proposed demonstration project to establish a provider service network (PSN) targets Region 7 only at this time. The C.E.R.T. institutions serve both Regions, so a complete picture of the workforce for north Louisiana is germane to the stakeholders. The data for only Region 7 can be extracted (*see Appendix C*).

The total population of the twenty-one parishes within OPH Regions 7 and 8 is 881,112. Of those, 37.6% are medically disenfranchised. Greater than 20% are uninsured, and greater than 25% are underserved, and 27% are impoverished. Within the twenty-one, mostly rural parish area, seventeen parishes and parts of the remaining four parishes are designated as HPSAs/MUAs/MUPs. Ten parishes are dental professional shortage areas. There are eleven federally qualified health centers (FQHCs) and 29 rural health clinics (RHCs) (DHH, 2006). Leading causes of death in Louisiana are heart disease, cancer, cardiovascular disease, accidents, and diabetes.[15]

Staffing for a fully functional medical home can be categorized into five groups: primary care physicians (PCPs); nurses; other health care providers; office administration and management that includes clerical-information technology (IT) and clerical-medical records (MR); and health information management personnel. Primary care providers include physicians, dentists, and mid-level providers. Mid-level providers are advanced practice registered nurses (APRNs) and physician assistants (PAs) and dental hygienists. Physician specialties appropriate to staffing a medical home are family practice, primary care, general practice, internal medicine, and general pediatrics. APRNs prepared to provide primary care are nurse practitioners certified as family nurse practitioners (FNPs), pediatric nurse practitioners (PNPs), and adult health nurse practitioners (AHNPs). Other APRNs who can provide primary care are certified nurse midwives (CNMs). Levels of nursing practice that can provide health care in a MH setting are masters, baccalaureate,

and associate degree prepared registered nurses, licensed practical or vocational nurses, patient care technicians and certified nursing assistants. Other health care providers include radiological technology and medical technology professionals, dental assistants, social workers, and mental health professionals.

MH administration may require mid-level office management for personnel, payroll, staffing and scheduling and clerical staff for billing and medical records, appointment management, and supply management. Health information management (HIM) includes core IT staff such as a systems managers, network managers, and programmers and clerical IT staff such as DRG coders and data entry for medical records. It is conceivable that within a MH system, there would be a hub or hubs for data repository and therefore, some core IT roles might be shared across individual sites. However, HIM are essential staff for a MH in order to support and maintain the EHR.

Beyond these professional and para-professional roles, other jobs that might need to be staffed include housekeeping, maintenance and grounds-keeping, and transport. Some MHs also have child care workers to watch after children while parents see the PCP either for themselves or other children. These roles do not require specialized training, therefore, are not estimated in the staffing profile.

The CERT Workforce analysis examines primary care providers, nurses, dental professionals and HIM professionals (core and clerical). The 21 parishes all are HPSAs, indicating the need for primary care. HIM programs in the C.E.R.T. institutions are newly established. The significance of the EHR concept is not fully embraced by many HCPs, so jobs are currently limited, but should expand rapidly over the next five years. Office administration roles are not examined in

The CERT Workforce analysis examines primary care providers, nurses, dental professionals and HIM professionals.

this study because there is no shortage of individuals for the positions. The aim of the study is to determine provider shortage in these central roles, then, predict the need for the future—in this case, 5 years, based on the capacity of the educational entities to produce graduates to fill the demand.

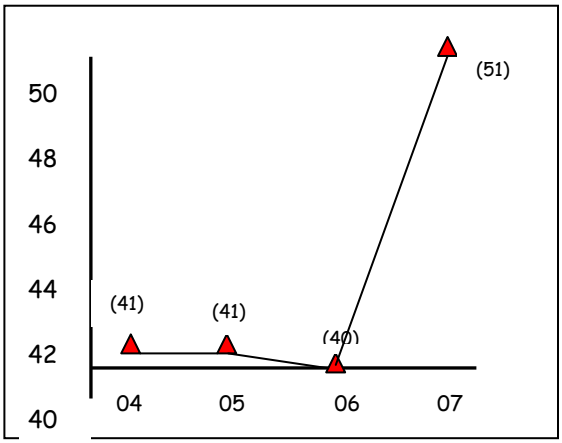
An extensive search of both the current literature and available national and state databases was conducted throughout the duration of the study in order to assure that the report remained comprehensive, accurate, and timely in terms of on-going environmental activities and population data needed for decision-making. Databases were mined and data extracted to describe the populations of interest—patients and providers. This was both a strength and a limitation of the study. The strength is in the confidence in the thoroughness of the investigation for primary sources; the limitation is that conflicting data were found across valid sources. For instance, some data reported was based on total population and other might be interpreted based on a segment of the population, but not always an equivalent segment, i.e. uninsured or underinsured or Medicaid or disenfranchised. Further, different data is reported at differing points in time, making it challenging to assure that the data used for decision-making are the most currently available and sufficiently equivalent for comparison.

A data collection instrument was designed to solicit data from the C.E.R.T. institutions for the purpose of identifying programs and graduation rates and incentives relevant to preparing students to fill the medical home workforce. The instrument was organized into tables to collect data about pre-professional and certificate programs, undergraduate programs (associate and baccalaureate), graduate, post-graduate and professional degree programs, and additionally any incentive opportunities for students in health care tracks or interested in pursuit of health care tracks. Each table had categories for entering program

and graduate data. The categories remained consistent across tables to facilitate data aggregation. The four primary categories utilized were: healthcare, business, health information management, and service. Each C.E.R.T. institution designated a representative to serve as contact person. Upon receipt of the tool, institutional representatives were asked to complete each of the tables according to programs offered by his or her institution. An adequate cross section of the educational system is represented because the C.E.R.T. institutions include Tier 1 and Tier 2 higher education institutions and the vocational technical institutions, institutions that are both public and private, and public institutions from two different systems of higher education. The institutions are located in both urban and rural areas and equally dispersed geographically and regionally.

Among the healthcare programs offered, there is one health sciences center affiliated with a public hospital that provides a medical school with several associated allied health programs, a physician assistant program, and some undergraduate programs (medical technology, health sciences) relevant to the medical home workforce. The health sciences center medical school offers residencies that would fill the MH workforce:family practice, general practice, internal medicine, and pediatrics. Three family practice residency programs are available in north Louisiana and one in central Louisiana. The health sciences center offers other specialties, but only those preparing primary care providers are included in this study. Figure 2 indicates primary care physician completions 2004-2007.

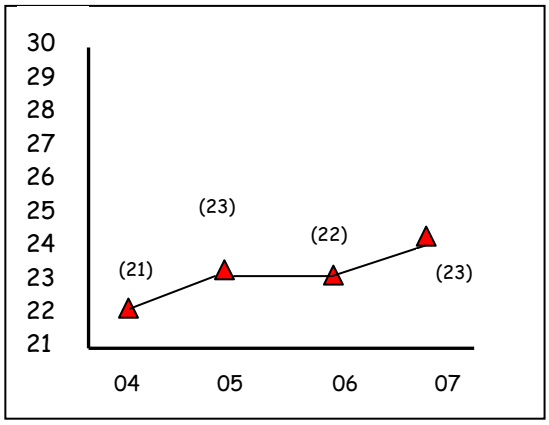
Figure 2. Primary Care Physicians per Year



There are five institutions that offer registered nurse programs, two of which offer masters preparation, three baccalaureate, and three associate degree programs. Two

universities offer masters of science in nursing with a concentration in nursing education and one offers role focus in administration or clinical practice. Two universities offer practice concentrations for nurse practitioner (NP) specialties for family nurse practitioner. One university offers NP concentrations in pediatrics, neonatal and acute care. There is no concentration in nursing informatics (*related to health information management*) or nurse midwifery. There is a doctor of nursing practice program in planning, but no doctoral level programs offered at this time. There are articulation opportunities in nursing to move from practical nurse to ASN, then ASN-BSN, and BSN-MSN. There is no fast-track from another undergraduate degree to BSN and no accelerated program through the masters in nursing programs. Admission to undergraduate nursing programs is dependent on faculty availability, but there are no limits on masters and nurse practitioner program admissions. Figure 3 indicates nurse practitioner completions 2004-2007.

Figure 3. Nurse Practitioner Graduates by Year



One university has an articulated program in radiological science. Within the technical college system, there are programs for assistive personnel (certified nursing assistant, patient care technician, practical nurse, dental technician, laboratory technician, and physical therapy assistant). One university offers masters degrees in health care administration and public health. The public health program is in collaboration with the health sciences center. There is one pharmacy program offering the masters and doctoral degrees. There is no dental school. Combined primary care provider completions 2004-2007 are represented in Figure 4.

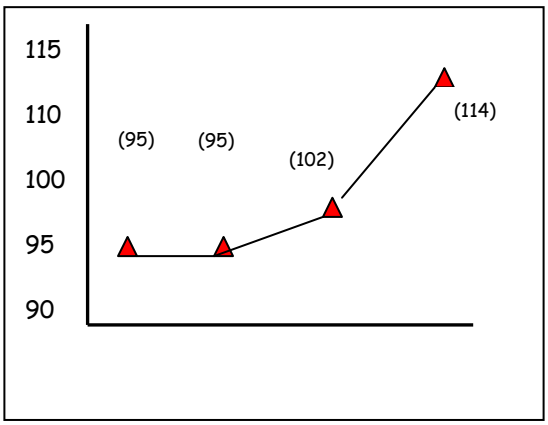


Figure 4. Primary Care Provider Program Completions by Year

One university offers a program in health information management at both the undergraduate and the masters level. Several courses and certificate programs are offered at the technical college level for medical office management or assistant and coding, computer programming, computer applications, and network management. Baccalaureate and associate degrees are offered computer science and systems management. Four programs are offered in social work and psychology.

Data extracted are used to determine numbers of MH staff (professional and support) needed to provide a PCMH for all *medically disenfranchised* Louisiana residents. *Medically disenfranchised* is defined as the number of people with no or inadequate access to a primary care physician due to local shortage of such physicians. They are a subset of the medically underserved—those facing various and often compounding barriers to care. The medically disenfranchised live in

Table 1. Current Staffing Patterns and Benchmark Rates for Workforce Projections Nationally

	Current Rates		Benchmark Rates	
			Health Center Median	National Comparison
	Staff	Staffing Ratio	Patient: Staff	Patient: Staff
Health Care Providers	11,887	1.00	1,092.00	958.4
Physicians	7,595	0.64	1,709.00	1,500.00
NPs/PAs/ CNMs	4,292	0.36	3,024.50	4,154.60
Nurses	8,776	0.74	1,479.00	1,298.20

Source: 2006 Uniform Data System, Bureau of Primary Health Care, HRSA, DHHS.
*Health providers include nurse practitioners, physician assistants, certified nurse midwives, and physicians.

a primary care Health Profession Shortage Area (HPSA) or Medicall;y Underserved Area (MUA), or who are considered a Medically Underserved Population (MUP) after subtracting a standard 2000 people for every primary care physician.[5] This group was determined to be the most representative group to use to define the total number of PCPs needed to provide a sustainable workforce for a system of MHs. The *Access Transformed* (NACHC, 2008)[5] report states that 1 in 5 Americans are medically disenfranchised and face financial, linguistic, cultural, or geographical barriers to primary care. The report uses the goals for *ACCESS for All America* (NACHC, plan to increase the number of individuals to be served by community health centers by 2015 to 30 million and to 69 million, including the 56 million medically disenfranchised. Based on these projections, the report identifies a MH staffing formula for PCPs and other HCPs that is used as a benchmark for productivity (for more detailed description, see the ACCESS Transformed report). This formula is used to calculate need in the C.E.R.T. report. Physician-to-patient ratio is a common metric of adequacy used in other health care settings and is applied here with adjustment for mid-level providers. One primary care physician is needed for every 1,500 patients or with the addition of mid-level primary care providers (NPs, CNWs, PAs), the ratio decreases to one provider to every 958 patients. Table 1 depicts the current staffing patterns and comparative benchmark rates for workforce projections nationally. There is likely to be variation in staffing patterns across states, but on the average, state need can be estimated using the ratio provided.

Application of the 1:958 PCP-to-patient ratio in the C.E.R.T. Workforce report allowed a shortage to be estimated for physicians, mid-level providers, and nurses. The need is projected over five years. This estimate suggests a serious, near term shortage of all HCPs to meet the MH need by 2013—a period of five years.

Beyond the primary care providers (physicians and mid-level providers), the remainder of the workforce is calculated as: Clerical staff: PCP = 1:1; Core IT = 3 per region. *Figure 5* depicts the current estimated staffing shortage for a medical home system sufficient to meet the need of the disenfranchised population of Regions 7 and 8.

There is a 5-year projected shortage of 346 primary care providers, 256 nurses, 31 dentists; 62 dental assistants; 692 clerical workers (IT and MR); and 6 core IT. *It is notable to understand that the EHR is essentially non-existent; therefore, no jobs are filled in those capacities.*

Figure 5. Medical Home Provider Shortage

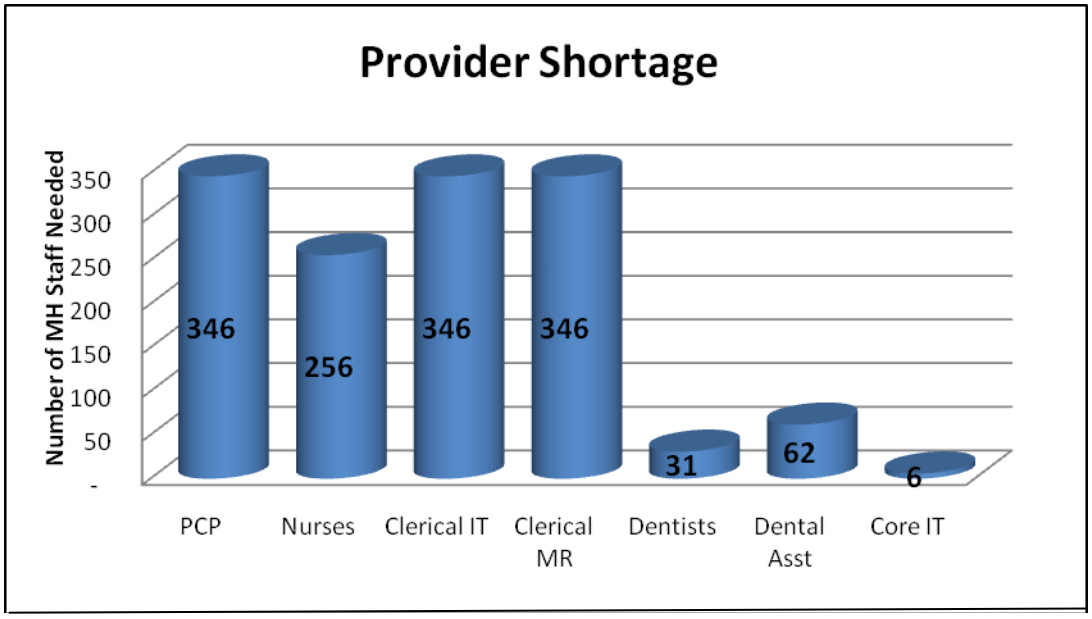
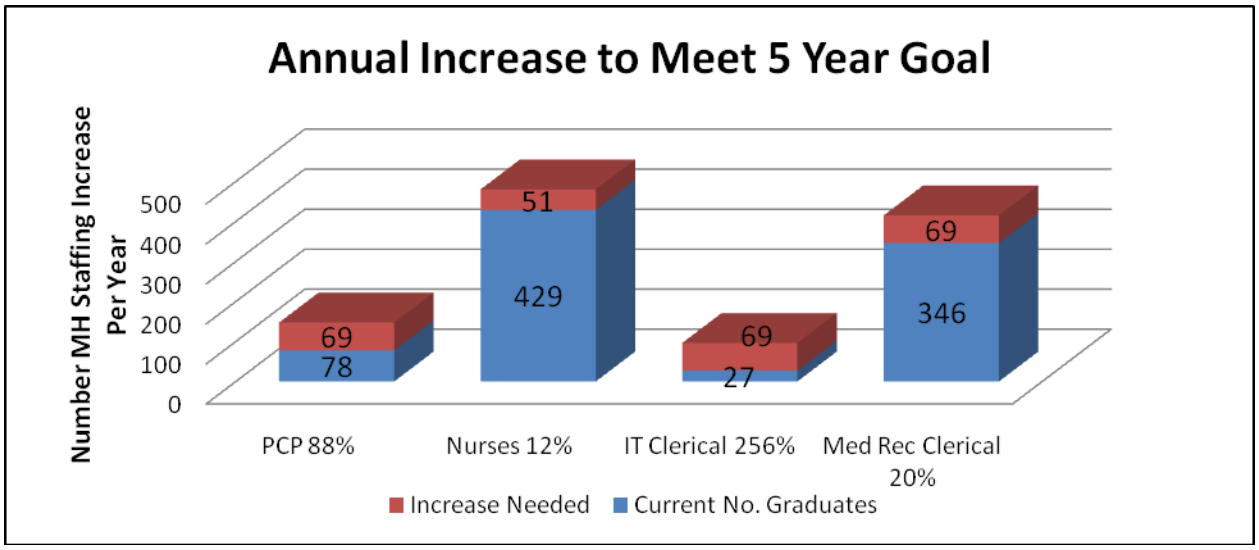


Figure 6 illustrates the *annual increase* needed in numbers of graduates to meet the five year goal. Primary care providers face a daunting 88% annual increase to meet the projected need; nursing requires a 12% increase; clerical IT to adequately support the EHR aspect of the MH must increase 256%; and clerical staff to manage medical records requires a 20% increase. While the gap in nurses appears small (12%) by comparison, when translated into faculty requirements to meet that increase, the problem becomes more challenging. Nursing faculty are limited by the Louisiana State

Board of Nurse Examiners (LSBN) to a clinical supervision ratio for faculty to students of 1:10 for the safety of patients, meaning that for every 10 students, one clinical faculty is required. Therefore, to increase the registered nurse graduates by 51 students in one year would require an additional 6 masters-prepared faculty. Compounded by the five year projection, 30 additional faculty are required to meet the need.

There are many approaches to redesigning health care. Regardless of the approach or model applied, there has to be a balance between supply and demand. It would seem from the data presented that rather than a balance in Regions 7 and 8, there is a widening gap. Other largely rural areas have altered medical education curricula by dispersing it out into the communities of need, having most (as opposed to short, episodic exposures) of the training in primary care settings to encourage community practice. Few nursing programs have tried this strategy. Incentives such as loan repayment and tax credits for practice have been applied, with small returns. Examining Figure 6, it is clear that north Louisiana is approaching crisis.

Figure 6. Annual Medical Home Provider Increase to Meet 5-Year Goal



Consider this-- AARP Bulletin, September, 2008: Where have all the Doctors Gone?

> …The number of doctors going into primary care has fallen by half.
>
> …Every neighborhood in the country is one doctor away from a crisis.
>
> …Having health insurance doesn't guarantee access to physicians.
>
> *Barry, P. (2008, September).*

Smart change resulting from innovative thinking about social variables is recommended. Success of a health care system driven by the medical home model is dependent on a *cultural evolution* of health care education programs that capitalize on the strengths of the rising generation--social networking, electronic information management, technology, and quality of life values. Where should innovation begin?

Use a developmental approach to building the workforce—employing a life course perspective to embrace the unique generational needs of today's students.

Interdisciplinary, collaborative practice is a *core element* of a successful medical home, so should not health education curricula be executed in an interdisciplinary and collaborative environment? Usual strategies to increase the workforce supply to meet the demand have been employed with mediocre success. While incentives such as loan repayment and practice tax credits help recruit some physicians into primary care, there is little evidence that these strategies are effective. Recruitment of students from underserved areas and disenfranchised populations attracts some, but the impact is not sufficient. Directing increased resources toward Area Health Education Centers could could enhance this effort. Recruitment efforts targeting students early during K-12 years

entices some, but does not demonstrate significance. So what will work? Is there a missing link?

One single element not previously applied to the supply and demand strategies is a *developmental approach* to building the workforce—employing a *life course perspective* to embrace the unique *generational needs* of today's students. The generation entering the workforce is the "work-to-live" generation, as are their life partners. Quality of life is overarching in their work expectations. The overarching developmentalistic and collaborative principles are applied to the recommendations for education and recruitment.

RECOMMENDATIONS

I. General Recommendations

The bottom line: *These bullet points are the absolute target strategies for workforce development. These characteristics are essential to quality and effectiveness of the health care workforce.*

- An interdisciplinary healthcare workforce of primary health care providers
- of sufficient number (based on Access TransforMED)
- who received high quality education – (see LA Interagency Task Force on The Future of Family Medicine, PWC Report)
    - didactic and clinical
    - specific to medical home health care delivery system
- incorporating a Model of Care that reflects lifelong healthcare needs for primary preventive, therapeutic, as well as specialty services (Region I)

- forming a healthcare system that completely surrounds all disenfranchised (uninsured, underinsured, lack access) citizens of north Louisiana,
- aligning incentives with accountability , e.g. P4P, comparative effectiveness
- develop a marketing plan targeting consumer education about the importance of medical homes, primary care providers, health literacy, care participation , the electronic health record and personal health record.

II. Workforce Recommendations

Principles: *These principles are core considerations for workforce development and must be incorporated into planning if a sustainable workforce is to be developed. Recognizing the unique socio-cultural characteristics and values of contemporary generations is critical to success.*

- Developing interdisciplinary (MD, APRN- NP & midwives, RN, LPN, PA, CNA, DDS, DA, PharmD, PharmTech, Lab, RadTech, Social Work, Mental Health Professionals, Behavioral Health providers, Health Information Technology)
- Enhancing currirular integration of informatics in medicine and nursing with emphasis on population-based care, quality and safety, and evidence-based practice
- Using a Developmental Approach, employing Life Course Perspective with life stages, accompanied by goal appropriate for each stage, with overarching with Maslow's Hierarchy of Needs and
    - impacts both workforce recruitment and retention,

    - applies generational studies in interactions with both provider and client:
        - in relation to “what matters to *current* healthcare practitioner graduates relative to Life-Work Balance and commitment and service and making a difference or having an impact in the world
        - Pediatric to Geriatric as appropriate
        - Generation X, Y, Z, Baby Boomers
- Working within Evidence-based practice setting
- Employing ongoing active Research Program, focusing not only on
    - patient’s clinical outcomes but also
    - workforce success (as measured in clinical outcomes)
    - workforce satisfaction (measured with qualitative and quantitative research that compares demographic and environmental and sociocultural factors with level of satisfaction), and
    - workforce sustainability (measured in time of active practice),
- Providing transparency
- Insuring provider AND patient accountability, monitored using tools of technology
    - Provider: compliance with documented evidence-based best practices, clinical practice guidelines, professional licensure board’s scope and standards of practice;
    - Patient: compliance with prescribed regimen of care
- Incorporating best practice information technology
    - electronic medical record that is interoperable – at a minimum - with medical homes across the state;
    - longitudinal personal health record for all clients that

    - foundationally practices principles of health literacy for entire population
- Isolating and addresses barriers to establishment and sustainability of rural practice in north Louisiana
- Identifing and implementing incentives that are flexible, *not* one-size-fits-all, innovative

III. Incentives

LA Interagency Task Force on the Future of Family Medicine reports:

> Based on a study conducted in 2002 in 18 states, the incentives with the *greatest impact* for entering and remaining in rural healthcare practice fell within the following specific economic areas:
>
> - tax credits for practicing in rural/underserved area;
> - tax credits for implementation of the EHR
> - Medicaid reimbursement of Telemedicine; and
> - provision of substitute practitioners on regular basis, e.g. locum tenens
>
> *Lowest impact* was in the area of focused recruitment of students from rural or underserved areas. (p 49)

IV. Recruitment

With consideration for the research cited in this report and other such reports reviewed, as well as acknowledgement of the need to update such studies to more accurately reflect life goals of current healthcare professional students and graduates, the following suggestions may be productive:

- Recruitment from within disenfranchised population
- Establishing innovative incentives for practice within this particular model of care
- Conducting an assessment (Focus Group, interview) among newly graduated primary care practitioners (MD, NP, PA, DDS, RPh) to identify

  impact of practice intent, Family factors, e.g. spouse professional issues, children's education and enrichment issues, gender of healthcare practitioner
- Launching a mass marketing campaign to target the rich pipeline for healthcare professionals in north Louisiana with a message about the value and contribution of a medical home practice model to regional, state-wide, and national healthcare outcomes

V. Education

Access to:

- Basic professional education appropriate for role
- Additional educational program leading to certification/specialty in Medical Home Health Care

- Interdisciplinary focus (consider collaboration between all area institutions science, nursing, and medicine programs in the Shreveport-Bossier areas, use of student-to-student teaching/mentoring)

***Description of Additional Educational Program* (above the basic practice requirements for the PCP disciplines)**

Clinical experience in medical home environment (as Illinois Rural Medical Education Program and Medical Education Program and Wisconsin Washington AMI regional partnership – described in PriceWaterhouseCoopers report (2006)

Curriculum to include (but not limited to):

- Theoretical underpinning:
    - Systems Theory
    - Communication Theory
    - Change Theory
    - Informatics Theory
- Health Care Delivery Systems: design, management, evaluation (include Telehealth, virtual healthcare, case management, disease management)
- Health Care Economics (include Budgeting, Financing)
- Health Care Policy
- Program Design and Evaluation
- Research, especially Design for population-level impact,
- Outcomes evaluation
- Consumer-driven Healthcare: Shared decision-making (Dartmouth Hitchcock Center for Shared Decision-Making)
- Health Literacy

- Consumer-driven Healthcare: Shared decision-making (Dartmouth), Health Literacy
- Statistics, Epidemiology (trending, forecasting, evaluation)
- Social Marketing
- Psychology of groups
- Population-based Healthcare
- Community Development
- Information Literacy (definition: ability to identify information needed, search, retrieve/access, utilize, evaluate information and outcome)
- Information Technology design, development, use, evaluation, financing
- Communication Technology
- End user issues
- Database design, Knowledge Development for large databases (KDD)
- Ergonomics
- Social Networking
- Informatics:
    - Consumer
    - Provider

Continuing Education

Design interdisciplinary CME/CE programs targeting needs of medical

home practice area

POTENTIAL PARTNERSHIPS: **A list**

Professional preparation/education programs, such as

LSU HSC-Shreveport Departments of Family Medicine, Pediatrics, Obstetrics and Gynecology

Medical Center Residency Training program (Primary Care)

Northwestern State University

Colleges of Nursing, Social Work, Radiologic Technology

Grambling State University College of Nursing

University of Louisiana at Monroe

Colleges of Nursing, Pharmacy

Louisiana Tech Division of Nursing

District and Parish School Board Offices

Include technical training programs and incentive programs for recruitment purposes that are implemented during high school

Technical Colleges

LA State Boards of professional practice for licensure:

Medical Examiners, Nursing, Social Work, etc

CERT

North LA AHEC: Shreveport and Monroe campuses

School-Based Health Centers

2007-08 locations (Map): 13 in north Louisiana

http://www.dhh.louisiana.gov/offices/miscdocs/docs-255/Map/Map2007-08w-L.pdf

LA Department of Health and Hospitals

Office of Public Health

Office of Mental Health

Center for Environmental Health

Department of Maternal and Child Health

LA Bureau of Primary and Rural Health Care

Behavioral Health and Primary Care Service Integration Initiative

Office of Addictive Disorders

Office of Mental Health

LA Healthcare Redesign

LA HealthFirst Technical Advisory Committee

Federally Qualified Health Centers and Rural Health Clinics in the region

Free Clinics in the region

Louisiana Hospital Association

Louisiana State Medical Society

Louisiana State Nurses Association

Additional state professional organization associations

Louisiana Public Health Institute (LPHI)

The Film Industry

Industries associated with exploration of the Haynesville Shale

Robert Wood Johnson and other healthcare workforce research and funding organizations

References

[1] Institute of Medicine (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. The National Academies Press*. Washington, D.C.*

[2] Institute of Medicine (2005). *Quality Through Collaboration: The Future of Rural Health Care*. The National Academies Press*. Washington, D.C.*

[3] National Association of Community Health Centers (2008).*A Sketch of Community Health Centers: Chart Book 2008*. Retrieved August 18, 2008 from www.**nachc**.com/state-healthcare-data-list.cfm

[4] National Committee for Quality Assurance, *Physician-Practice Connections: Patient-Centered Medical Home.* Retrieved August 25, 2008 from http://www.ncqa.org/tabid/631/Default.aspx

[5] American Association of Family Physicians, May Board, 2008. TITLE and URL?

[6] National Association of Community Health Centers, ACCESS Transformed, 2008. Retrieved August 24 from http://www.nachc.com/client/documents/ACCESS%20Transformed%20full%20report.PDF

[7] National Association of Community Health Centers. Retrieved Sept.6, 2008 from http://www.nachc-chi.com/

[8] Bureau of Primary Care and Rural Health, Retrieved Sept.5, 2008 from http://www.dhh.louisiana.gov/offices/publications/pubs-88/la_IMPLAN.pdf)

[9] Louisiana Department of Health and Hospitals, Louisiana's Report on the Uninsured, Retrieved Sept 1, 2008 from http://www.dhh.louisiana.gov/offices/publications/pubs-163/Uninsured-Lake%20Charles_305.pdf

[10] Price Waterhouse Coopers, (2006, April 26). *Report on Louisiana Healthcare Delivery and Financing System.* Presented to Louisiana Recovery Authority Public Health and Healthcare Workforce. Retrieved Sept 5, 2008 from http://www.dhh.louisiana.gov/offices/publications/pubs-288/Concept%20Paper%20-0Final.pdf

[11] Louisiana Health Care Quality Forum (2008). The Patient Centered Medical Home in Louisiana. Retrieved June 2008 from http://www.lhcqf.org/images/PDF_DOCS/Committees/Medical_Home/whitepaper_mhc.pdf

[12]Louisiana Department of Health and Hospitals, *Louisiana Health First*, Retrieved Sept. 7, 2008 from http://www.dhh.louisiana.gov/offices/?ID=349

[13] Martin, J., Avant, R., Bowman, M., et.al. (2004, March-April). The future of family medicine: A collaborative project of the family medicine community. Annals of Family Medicine: 2, Suppl 1, S3-32. Retrieved online September 10, 2008 http://www.annfammed.org/cgi/content/full/2/suppl_1/s3

[14] National Association of Community Health Centers, The Robert Graham Center, & George Washington University, School of Public Health, (Aug., 2008). Retrieved August 24, 2008 from http://www.nachc.com/client/documents/issues-advocacy/policy-library/research-data/research-reports/Access_Denied42407.pdf

[15] Louisiana Department of Health and Hospitals (2007) Louisiana's Health Report Card Retrieved Sept. 7, 2008 from http://www.dhh.louisiana.gov/offices/publications/pubs-275/2006%20LA%20Health%20Report.pdf

[16] American Academy of Family Physicians (2008). Patient-centered medical home: A definition. Retrieved from http://www.aafp.org/online/en/home/policy/policies/p/patientcenteredmedhome.html

Barry, P. (2008, September). Where have all the doctors gone? AARP Bulletin 49(7), 12-14. Washington DC: American Association of Retired Persons (AARP)Publications.

Institute of Medicine (2008). Retooling for an aging America: building the health care workforce. Washington, DC: National Academies Press.

Streiffer, R. (2008, March 3). Building a Primary Care Workforce: Lessons, Ideas, Dialogue. Presentation to Neighboring State Conference, La. Task Force on the Future of Family Medicine. Downloaded September 1, 2008 from http://www.dhh.louisiana.gov/offices/miscdocs/docs-88/Taskforce/32708%20presents/Neighboring%20state%20conference%20DHH%203~08%20FINAL.pdf

Dower, C. (2005, May 5). Healthcare workforce: Projections, training, and placement. UCSF Center for the Health Professions Retrieved Sept 2, 2008 from http://www.futurehealth.ucsf.edu/pdf_files/Healthcare%20Workforce%20_%20Arizona.ppt

___. (2006, October 16)America's healthcare safety net: The workforce question. Retrieved Sept 1, 2008 from http://www.nashp.org/loadedfiles/Catherine%20Dower%20session%2010.pdf

Dartmouth Hitchcock Center for Shared Decision-Making (2008). Retrieved Sept 5, 2008 from http://www.dhmc.org/shared_decision_making.cfm

Appendix A: Definitions

Definitions

Medical Home (MH)	A patient-centered medical home integrates patients as active participants in their own health and well-being. Patients are cared for by a physician who leads the medical team that coordinates all aspects of preventive, acute and chronic needs of patients using the best available evidence and appropriate technology. These relationships offer patients comfort, convenience, and optimal health throughout their lifetimes. (American Association of Family Physicians, May Board, 2008). Retrieved (Sept. 6, 2008) http://www.aafp.org/online/en/home/policy/policies/p/patientcenteredmedhome.html The Patient-Centered Medical Home (PC-MH) is an approach to providing comprehensive primary care for children, youth and adults. The PC-MH is a health care setting that facilitates partnerships between individual patients, and their personal physicians, and when appropriate, the patient's family. *Principles* *Personal physician* - each patient has an ongoing relationship with a personal physician trained to provide first contact, continuous and comprehensive care. *Physician directed medical practice* – the personal physician leads a team of individuals at the practice level who collectively take responsibility for the ongoing care of patients. *Whole person orientation* – the personal physician is responsible for providing for all the patient's health care needs or taking responsibility for appropriately arranging care with other qualified professionals. This includes care for all stages of life; acute care; chronic care; preventive services; and end of life care. *Care is coordinated and/or integrated* across all elements of the complex health care system (e.g., subspecialty care, hospitals, home health agencies, nursing homes) and the patient's community (e.g., family, public and private community-based services). Care is facilitated by registries, information technology, health information exchange and other means to assure that patients get the indicated care when and where they need and want it in a culturally and linguistically appropriate manner. *Quality and safety* are hallmarks of the medical home. American Association of Family Physicians, Retrieved Sept. 6, 2008 from http://www.aafp.org/online/etc/medialib/aafp_org/documents/policy/fed/jointprinciplespcmh0207.Par.0001.File.tmp/022107medicalhome.pdf
Community Health Center (CHC)	(c)(1) *Community health center* or *center* means an entity which, through its staff and supporting resources or through contracts or cooperative arrangements with other public or private entities, provides for all residents of its catchment area: (i) Primary health services; (ii) As determined by the Secretary to be appropriate for particular centers, supplemental health services necessary for the adequate support of primary health services; (iii) Referral to providers of supplemental health services and payment, as determined by the Secretary to be appropriate and feasible, for their provision of such services; (iv) Environmental health services, as determined by the Secretary to be appropriate for particular centers; and (v) Information on the availability and proper use of health services GPO Access. Retrieved Sept. 9, 2008 from http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=e8d221637d99dcfe7b454306613f77fe;rgn=div5;view=text;node=42%3A1.0.1.4.24;idno=42;cc=ecfr Health centers are community-based and patient-driven organizations that serve populations with limited access to health care that provide comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations. HRSA. Retrieved Sept. 9, 2008 from http://bphc.hrsa.gov/about/
Federally Qualified Health	The term "Federally Qualified Health Center," or FQHC, refers to three different types

Center (FQHC)		of clinics: • Health Centers (HCs) funded under Section 330 of the Public Health Service (PHS) Act, including Community Health Centers (CHCs), Migrant Health Centers (MHCs), Health Care for the Homeless Health Centers (HCHs), and Public Housing Primary Care Centers (PHPCs); (Note: Information regarding HCHs and PHPCs is not included in this publication. Further information regarding these programs may be found at http://www.bphc.hrsa.gov) • FQHC "Look-Alikes," or FQHCLAs, that have been identified by HRSA and certified by CMS as meeting the definition of "Health Center" under Section 330 of the PHS Act, although they do not receive grant funding under Section 330; and • Outpatient health programs/facilities operated by tribal organizations (under the Indian Self-Determination Act) or urban Indian organizations (under the Indian Health Care Improvement Act). HRSA, http://www.ask.hrsa.gov/downloads/fqhc-rhccomparison.pdf
Medical Care Access Designations (geographic)		
	Health Professional Shortage Area (HPSA)	The Health Resources and Services Administration Shortage Designation Branch develops shortage designation criteria and uses them to decide whether or not a geographic area, population group or facility is a Health Professional Shortage Area or a Medically Underserved Area or Population. http://bhpr.hrsa.gov/shortage/ Health Professional Shortage Areas (HPSAs) have shortages of primary medical care, dental or mental health providers and may be geographic (a county or service area), demographic (low income population) or institutional (comprehensive health center, federally qualified health center or other public facility). HRSA, 9/5/08 http://hpsafind.hrsa.gov/ There are three different types of HPSA designations, each with its own designation requirements: • Geographic Area • Population Groups • Facilities http://bhpr.hrsa.gov/shortage/primarycare.htm
	(MUA)	**Medically Underserved Areas (MUA)** may be a whole county or a group of contiguous counties, a group of county or civil divisions or a group of urban census tracts in which residents have a shortage of personal health services. http://bhpr.hrsa.gov/shortage/
	(MUP)	**Medically Underserved Populations (MUPs)** may include groups of persons who face economic, cultural or linguistic barriers to health care http://bhpr.hrsa.gov/shortage/
Medical Care Access Designations (population)		
	Disenfranchised	Medically disenfranchised are the number of people with no or inadequate access to a primary care physician due to local shortage of such physicians. They are a *subset* of the medically underserved – those facing various and often compounding barriers to care. The medically disenfranchised live in a primary care Health Profession Shortage Area (HPSA) or Medically Underserved Area (MUA), or who are considered a Medically Underserved Population (MUP) after subtracting a standard 2000 people for every primary care physician. http://www.nachc.com/client/documents/issues-advocacy/policy-library/research-data/research-reports/Access_Denied42407.pdf
	Underserved	Medically underserved – those that face multiple and compounding barriers to primary care, including lack of insurance and financial difficulty, language and culture, transportation, as well as the lack of physicians present or willing to treat them. http://www.nachc.com/client/documents/issues-advocacy/policy-library/research-data/research-reports/Access_Denied42407.pdf

	Uninsured	People with no form of subsidy or support for health care incurred expenses.(common knowledge)
	Underinsured	Privately insured individuals incurring medical debt http://www.kff.org/uninsured/upload/7403ES.pdf
	Medicaid	The Medicaid Program provides medical benefits to groups of low-income people, some who may have no medical insurance or inadequate medical insurance. Although the Federal government establishes general guidelines for the program, the Medicaid program requirements are actually established by each State. http://www.cms.hhs.gov/MedicaidGenInfo/Downloads/MedicaidAtAGlance2005.pdf
	Medicare	Medicare is a health insurance program for: • people age 65 or older, • people under age 65 with certain disabilities, and • people of all ages with End-Stage Renal Disease (permanent kidney failure requiring dialysis or a kidney transplant). Part A Hospital Insurance - Most people don't pay a premium for Part A because they or a spouse already paid for it through their payroll taxes while working. Medicare Part A (Hospital Insurance) helps cover inpatient care in hospitals, including critical access hospitals, and skilled nursing facilities (not custodial or long-term care). It also helps cover hospice care and some home health care. Beneficiaries must meet certain conditions to get these benefits. Part B Medical Insurance - Most people pay a monthly premium for Part B. Medicare Part B (Medical Insurance) helps cover doctors' services and outpatient care. It also covers some other medical services that Part A doesn't cover, such as some of the services of physical and occupational therapists, and some home health care. Part B helps pay for these covered services and supplies when they are medically necessary. Prescription Drug Coverage - Most people will pay a monthly premium for this coverage. Starting January 1, 2006, new Medicare prescription drug coverage will be available to everyone with Medicare. Everyone with Medicare can get this coverage that may help lower prescription drug costs and help protect against higher costs in the future. Medicare Prescription Drug Coverage is insurance. Private companies provide the coverage. Beneficiaries choose the drug plan and pay a monthly premium. Like other insurance, if a beneficiary decides not to enroll in a drug plan when they are first eligible, they may pay a penalty if they choose to join later. http://www.cms.hhs.gov/MedicareGenInfo/
	Managed Care	Managed care plans are health insurance plans that contract with health care providers and medical facilities to provide care for members at reduced costs. These providers make up the plan's network. How much of your care the plan will pay for depends on the network's rules. http://www.nlm.nih.gov/medlineplus/managedcare.html
	Privately Insured	People with some form of subsidy or support for health care incurred expenses.(common knowledge)
Usual Source of (Health) Care (USC)		''Is there a place that ____usually goes when he/she is sick or you need advice about (his/her) health?'' http://www.cdc.gov/nchs/datawh/nchsdefs/usualsourceofcare.htm
Provider Service Network (PSN)		A PSN is an organized health system offering an integrated system of care (i.e. medical home) to Medicaid beneficiaries and has substantial participating ownership by a hospital and/or provider group(s). DHH, 2008 http://www.dhh.louisiana.gov/offices/publications/pubs-349/PSN%20Update%20page%208-6-08.pdf PSNs will provide the system structure to coordinate and enhance access, quality, and efficiency of care across the continuum, including access to appropriate

	specialty care and inpatient services. State of Louisiana Department of Health and Hospitals, *LOUISIANA HEALTH FIRST* Medical Home Demonstration Project - Provider Service Networks (PSN), August 6, 2008

Appendix B: CERT Institution Data Summary

Medical Home Workforce Development Summary

(Graduation/Program Completion 2004-Spring 2008)

Workforce Development	04	05	06	07	08**
Healthcare					
Primary Health Care Providers (PCPs)	**95**	**95**	**102**	**114**	**76**
Medicine	**99**	**102**	**93**	**92**	**93**
Family Practice	15	20	18	22	16
Alexandria	6	7	4	6	6
Monroe	3	7	7	6	4
Shreveport	5	5	6	8	4
Vivian	1	1	1	2	2
General Practice					
Internal Medicine	22	16	14	17	16
Pediatrics	4	5	8	12	8
Physician Assistant (PA)	29	26	30	35	na
Nursing – *advanced practice*					
DNS	New program in development				
NP	**21**	**23**	**22**	**23**	**30**
Primary Care Providers (FNP, PNP, WHNP,AHNP)	**25**	**28**	**32**	**28**	**36**
FNP	19	22	28	20	28
PNP	3	3	0	5	8
WHNP	3	3	4	3	0
AHNP	0	0	0	0	0
CNM					
Dentist					

	Health Care Providers (HCPs) – *collaborative*									
		Nursing								
			PhD/DNS – *may have advanced practice credentialing*							
			MSN			**36**	**43**	**43**	**44**	**45**
				Education		**7**	**10**	**7**	**12**	**3**
				Administration		0	0	1	2	0
				Clinical Specialist		0	0	0	0	1
				Nurse Informaticist						
			RN			**355**	**504**	**450**	**489**	**350**
				BSN Total		253	323	268	282	168
				BSN - generic		202	269	225	203	138
				RN-to-BSN		51	54	43	74	30
				ASN/ADN		102	181	182	207	182
				PN-to-ASN						
		BS - Dental Hygiene				20	31	26	25	24
	Health Care Providers (HCPs) – *assistive/supportive*									
		Nursing								
			PN (LPN/LVN)			89	108	113	139	na
			PCT/CNA			202	166	226	231	na
		Radiologic Technology				59	59	80	68	59
			MSRS			New program starting				
			BSRS			58	58	77	63	59
				RT-to-BSRS		1	1	3	5	na
			ASRT			22	19	25	21	22
		Medical Technology				69	40	28	41	16
			BS			9	6	10	12	7
			AD			15	11	0	6	9
		Physical Therapy								
			Doctor of PT			-	-	-	0	0

			Grad PT	24	25	24	29	2
			PT Assistant	16	13	17	18	na
		Occupational Therapy						
			MS	7	11	9	15	na
			BS	27	20	34	0	0
			AS – OT Assistant	13	19	24	29	1
		AD - Dental Hygienist		12	8	11	7	10
			Dental Technician					
			Dental Assistant					
		Pharmacy						
			PharmD	76	80	79	118	105
			MS - Pharmceutical Science	3	2	2	0	0
			BSN	NA	NA	NA	NA	NA
			Pharmacy Technician	6	10	9	13	na
	Psychosocial							
		Mental Health						
			Psychology	143	135	153	135	56
			PhD - Psychologist					
			MS - Psychologist	19	9	15	20	4
			BS - Counseling	65	64	62	52	36
			MA - Substance & Abuse Counseling	3	4	4	3	
			BA - Addiction/Abuse	21	31	31	32	
		Social Work		**131**	**142**	**131**	**165**	**59**
			MSN	26	26	35	48	17
			BSN	85	98	83	94	28
Business								
	Administrative							
		MBA		55	42	55	46	17
		MHA		?	?	?	?	?

		Management	**260**	**256**	**270**	**270**	**158**
			Management - Business	110	103	103	118	78
			Management – Human Resources for HC P	0	0	1	0	0
			PhD – Business Administration	8	1	7	1	4
			BA - Business Administration	200	191	201	184	25
			MA - Business Administration (QA, CIS, Finance)	35	44	55	46	17
			BA - Accounting	52	60	48	48	21
			MA - Accounting	15	10	10	14	20
			BS - Economics & Finance	28	26	16	12	7
			Risk Management & Insurance	0	0	0	3	4
	Administrative							
		Support	**167**	**177**	**245**	**278**	**113**
			AD - Business	22	33	17	15	11
			AD - Management	68	69	87	103	106
			AD - Accounting	23	23	34	49	11
			AD – Human Resources	11	10	10	17	19
			Medical Billing & Coding	0	0	4	6	1
			Medical Transcription	0	0	2	1	1
			Medical Office Assistant	4	9	43	36	31
			Computer Applications	24	24	46	36	20
Health Information Technology								
	BS - Health Information Management			15	16	18	25	17
	MS - Health Information Management			8	0	0	0	4
	AD- HIT			5	5	9	10	8
	Computer Science & Information Systems							
		AD - CIS		9	14	53	38	13
		BS – CIS/Network		127	84	77	77	8
Educators								
	Child Development - ECE			191	87	157	42	31

Service							
	AS - Electronics		14	14	16	10	
	BS - Electronics		7	15	14	9	
	AS - Industrial Maintenance & Technology						
	BS - Industrial Maintenance & Technology		16	27	26	18	
	TD – Electronics		19	13	23	8	16
	TD Industrial Maintenance		17	12	9	15	18
Pipeline							
	(Healthcare)						
		(Kinesiology)					
			Health Education & Promotion - Community	1	7	22	32	21
		Health Studies		0	0	0	0	0
		Paramedic		11	8	10	13	
		Spanish		7	5	8	3	na
		Sciences (UG)		**91**	**71**	**84**	**88**	**20**
			Biological Sciences	40	39	52	50	4
			Chemistry	3	6	6	9	7
			Clinical Laboratory Science & Biochemistry	48	26	26	29	9
		Sciences (Grad)						
			Biology (PreMed); Biochem, Molecular biol,cell biol & anatomy, Microbiol & immun	16	18	18	18	21
	Business			**31**	**45**	**46**	**45**	**42**
		Marketing		24	31	28	35	33
		Entrepeneurship		2	5	5	4	7
		MA - Gerontology – Long-term Care/Aging		5	9	13	6	2
	Education (Science)			48	28	26	34	32
		Secondary Math & Science		2	1	1	0	0
		Middle School Math & Science		0	0	0	1	1
		Biology Education		45	27	25	32	28

			Biology Education Grades 6 – 12	0	0	0	1	1
		Chemistry		1	0	0	0	2
	Service							
		Dual enrollment: High School + Technical or Vocational Programs						
	Incentives							
		Residencies & Fellowships						
		Scholarships						
			Minority & Disadvantages					
			TOPS					
		Work Study						
		Prior Learning Assessment (PLA)						
		Servicemembers Opportunity College (SOC)						
		Continuum for All Louisiana Learners (CALL)						

**All 2008 data is through July, 2008.

NA = Not Applicable

Na = Not available at this time

No program available in northern half of state; closest program is in New Orleans

Appendix C: Population and Provider Data

Population and Provider Data

People QuickFacts by Parish	Bossier	Caddo	De Soto	Bienville Par	Claiborne Pa	Red River Pa	Sabine Paris	Natchitoche	Lincoln Paris	Webster Par	Ouachita Par	Madison Par	Franklin Pari	Union Parish	Jackson Pa	Caldwell Par	Morehouse	Richland Par	West Carrol	East Carroll	Tensas Parish						
Population, 2006 estimate	107,270	253,118	26,390	15,168	16,210	9,438	23,934	38,719	41,857	41,301	149,259	12,328	20,455	22,964	15,202	10,615	29,761	20,554	11,732	8,699	6,138	881,112	4287768	5168880			
White persons, percent, 2006 (a)	74.60%	50.00%	58.20%	56.40%	50.70%	56.00%	72.90%	56.60%	56.80%	64.80%	62.80%	36.30%	66.90%	71.90%	71.60%	81.00%	53.90%	61.70%	80.70%	30.50%	41.50%						
Black persons, percent, 2006 (a)	21.60%	47.60%	40.30%	42.40%	48.40%	42.70%	16.70%	40.60%	40.80%	33.60%	35.40%	61.90%	32.00%	27.10%	27.40%	17.90%	45.20%	37.40%	18.40%	68.60%	57.50%						
High school graduates, percent of persons age 25+, 2000	83.00%	78.70%	70.30%	71.90%	65.70%	67.40%	70.80%	72.70%	80.40%	70.80%	78.60%	63.40%	61.40%	71.70%	73.60%	65.40%	66.60%	61.90%	59.50%	57.90%	63.20%						
Bachelor's degree or higher, pct of persons age 25+, 2000	18.10%	20.60%	10.20%	11.50%	12.40%	8.70%	11.10%	18.40%	31.80%	12.60%	22.70%	11.00%	9.80%	11.80%	12.90%	8.80%	9.70%	12.80%	9.50%	12.30%	14.80%						
Persons with a disability, age 5+, 2000	17,196	51,627	5,717	3,649	3,891	1,892	5,378	7,631	6,339	8,785	28,298	2,484	3,975	4,826	3,545	2,260	6,819	4,586	2,552	1,881	1,506	174,837					
Households, 2000	36,628	97,974	9,691	6,108	6,270	3,414	9,221	14,263	15,235	16,501	55,216	4,469	7,754	8,857	6,086	3,941	11,382	7,490	4,458	2,969	2,416						
Median household income, 2004	$ 42,141	$ 33,190	$ 30,883	$ 26,320	$ 27,859	$ 25,366	$ 30,581	$ 28,309	$ 29,007	$ 30,326	$ 32,969	$ 22,548	$ 25,046	$ 30,697	$ 31,714	$ 29,227	$ 26,354	$ 25,648	$ 26,661	$ 20,622	$ 21,040						
Per capita money income, 2005	$ 29,622	$ 33,539	$ 25,983	$ 23,723	$ 24,250	$ 22,869	$ 22,856	$ 25,482	$ 26,080	$ 27,143	$ 28,993	$ 20,184	$ 22,828	$ 25,354	$ 25,116	$ 23,166	$ 22,748	$ 22,937	$ 22,159	$ 22,021	$ 25,932						
Persons below poverty, percent, 2004	14.40%	20.50%	19.50%	22.50%	23.90%	23.70%	18.80%	23.60%	22.60%	19.00%	21.20%	30.60%	24.80%	18.70%	17.80%	20.60%	25.00%	24.70%	22.70%	36.00%	31.30%						
Healthcare - Uninsured December 2005	21.60%	24.90%	29.20%	32.55%	30.68%	32.71%	32.70%	27.93%	20.55%	29.38%	21.84%	30.58%	36.11%	27.15%	23.65%	30.82%	25.73%	27.77%	24.21%	28.37%	37.56%						
Geography QuickFacts	Bossier Paris	Caddo Paris	De Soto Pari	Bienville Par	Claiborne Pa	Red River Pa	Sabine Paris	Natchitoche	Lincoln Paris	Webster Par	Ouachita Par	Madison Par	Franklin Pari	Union Parish	Jackson Pa	Caldwell Par	Morehouse	Richland Par	West Carrol	East Carroll	Tensas Parish						
Land area, 2000 (square miles)	839.25	881.99	877.2	810.64	754.65	389.29	865.27	1,255.45	471.38	595.22	610.53	624.09	623.61	877.6	569.75	529.42	794.25	558.45	359.4	421.44	602.48						
Persons per square mile, 2000	117.2	285.9	29.1	19.4	22.3	24.7	27.1	31.1	90.3	70.3	241	22	34.1	26	27	20	39.1	37.6	34.3	22.4	11						
														0	0	0	0	0	0	0	0						
Healthcare - Disenfranchised Population (NACHA)	17,606	73,208	18,183	6,776	11,309	5,865	14,586	5,362	34,308	16,756	16,011	4,457	13,180	14,901	7,335	7,563	21,389	15,326	4,806	18,183	4,525	331,635	294.2635	346.1743	51.91079		
																						Disenfran	Shortage	Current An	5 Yr Annua	Percentage	
PC Shortage (PCP, NP, PA, CMN)	18.4	76.4	19.0	7.1	11.8	6.1	15.2	5.6	35.8	17.5	16.7	4.7	13.8	15.6	7.7	7.9	22.3	16.0	5.0	19.0	4.7	346	PCP	78	69	89%	
Nurses (PC*.74)	13.6	56.5	14.0	5.2	8.7	4.5	11.3	4.1	26.5	12.9	12.4	3.4	10.2	11.5	5.7	5.8	16.5	11.8	3.7	14.0	3.5	256	Nurses	429	51	12%	
*Admin/Data Entry = PC	18.4	76.4	19.0	7.1	11.8	6.1	15.2	5.6	35.8	17.5	16.7	4.7	13.8	15.6	7.7	7.9	22.3	16.0	5.0	19.0	4.7	346	Clerical IT	27	69	256%	
*Admin Clerical = PC	18.4	76.4	19.0	7.1	11.8	6.1	15.2	5.6	35.8	17.5	16.7	4.7	13.8	15.6	7.7	7.9	22.3	16.0	5.0	19.0	4.7	346	Clerical MR	346	69	20%	
Dental Shortage	0	14	4	2	1	1	2	0	0	2	0	0	0	0	2	1	0	0	0	0	2	31	Dentists				
*Dental Admin/Tech (Shortage *2)	0	28	8	4	2	2	4	0	0	4	0	0	0	0	4	2	0	0	0	0	4	62	Dental Asst				
*Medical Records IT (Admin by DHH); 3/Region																						6	Core IT				
																									PCP 88%		
																									Nurses 12%		
US Census Bureau, State & County Quickfacts																									IT Clerical 256%		
http://quickfacts.census.gov/qfd/																									Med Rec Clerical 20%		
US Department of Commerce, Bureau of Economic Analysis, Regional Economic Accounts																											
2006 Per Capita Income Estimate																											
http://www.bea.gov/regional/reis/drill.cfm																											
Parish Level Estimates of Louisiana's Uninsured Population December 2005																											
La DPHH 2005 Louisiana Health Insurance Survey																											
http://www.dhh.louisiana.gov/offices/miscdocs/docs-168/Louisiana%20Parish%20Level%20Estimates%20of%20the%20Uninsured.pdf																											
Dental Shortage																											
USDHH, HRSA, HPSA Shortage by county 9/03/2008																											
http://hpsafind.hrsa.gov/HPSASearch.aspx																											
* Assumption for shortage based on typical support for a PCP/Dentist																											