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Public Sponsored Health Insurance to Improve Health Outcomes with Implications for Government Health Policy, Design, and Decision Making

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Abstract

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Abstract

This research sought to ascertain the extent to which providing public sponsored health insurance (PSHI) to previously uninsured Mexican-American Hispanics improves health outcomes among those requiring ongoing treatment to control diabetes. Prior research utilizing insurance access theory; access, equity, and health outcome interrelationship theory; health affordability theory; and financial and resource burden theory suggests the uninsured receive less care than the insured, with delayed treatment, leading to chronic conditions. This research tested each of those major theoretical constructs into a blended conceptual framework based on the notion that providing health insurance helps alleviate the disabling effects of diabetes among this population. This study used an unobtrusive, longitudinal, one group pretest-posttest design. Research questions were designed to measure the strength of the relationship between PSHI and patient health outcomes using physical examination data, laboratory results, and diagnosis of 712 diabetic patients with 5,300 medical visits over 3 years before and after enrolling for PSHI. Logistic regression was used to analyze data related to age, gender, time enrolled in PSHI, and service location relative to health outcomes. Findings support the theories that accessibility increases with the provision of health insurance but also show that health outcomes do not improve after enrollment in a PSHI. This study contributes to the body of knowledge in public health policy and administration by quantifying the strength and significance of the relationship between health insurance and health outcomes and effects positive social change by measuring the effectiveness of legislation providing the uninsured with health insurance in order to improve health outcomes.

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Dedication

I dedicate this dissertation to my wife, Annette Marie and my children, Genesis Elan, Nicole Renee, and Andrea Noel. None of them likely realized the sacrifice of their time with me would be to such an extent. Their patience and humor while I carried my laptop, books and journals on beach vacations, out of state weddings, camping, and all venues, no matter where, made their sacrifice all the more meaningful. In addition, three close relatives and dear friends passed away before seeing the fruits of this labor. My mother-in-law, Rita Garcia, my father-in-law, Alfredo Garcia and my dear friend and brother-in-law, Larry Bracher provided endless encouragement, interest and compassion toward this effort. I will miss them and for them, I will continue in this pursuit to improve our social condition. Finally, I want to dedicate this to my mother, Betty for her unconditional confidence in my abilities and her moral support. For all these individuals, my dedication of this work is insufficient for their boundless love.

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Chapter 1: Introduction to the Study

As financially disadvantaged populations seek inexpensive and accessible medical care, the federal and state governments administratively, legislatively, and legally struggle with egalitarian citizen access and affordability of medical treatment in the fragmented and disorganized United States health care system (Kaiser Commission on Medicaid and the Uninsured, 2007). Citizens find the search for medical treatment difficult to navigate. Consequently, the financially strapped and uninsured populations tend to gravitate toward medical care through the path of least resistance, the hospital emergency rooms, federally mandated through the Emergency Medical and Treatment Act of 1986 (EMTALA). The act requires hospitals to examine and treat all those who present for care (Taylor, Cunningham, & McKenzie, 2006). Present conditions logically emanated from the medical professionals and health associations historical movements competing for sovereignty and market control and resulting in simultaneously cooperating and conflicting stakeholder relationships (Starr, 1982). Although democratic and inherently capitalistic, the United States health care system evolved as an inequitable, expensive and inaccessible provider of medical services to some of the most vulnerable populations in the United States, including financially depressed ethnic minorities along the United States-Mexico border (Wagner, 2007).

Theorists on past and present government health policy, legislation, and historical development present differing perspectives. Starr (1982) portrayed historical viewpoints and facts that centered on individual physician providers grouping into associations, complete with consistent direction toward marketplace control. According to Starr

(1982), the desire for professional sovereignty mobilized physicians to gain intentional and direct control over patient medical treatment by focusing on physician prescription authority as a gateway for all subsequent medical care. Rothstein (1987) demonstrated how medical schools and education grew and subsequently influenced the physician practice of medicine. These changes in medical practice influenced the increasing costs of medical practice in addition to physician actions in sovereignty and market control. Although Rothstein (1987) and Starr (1982) presented from the educational and physician perspective respectively, their subjects diverged into self-interested associations: the American Medical Association, the American Hospital Association, and the Association of American Medical Colleges. Separate association goals and actions toward market dominance occurred prior to the fragmentation of health care legislation beginning in the 1950s. Congress divided the Truman administration's support for a national, cohesive health education, research, and medical treatment policy into smaller legislative packages that incrementally benefitted one or more special medical association interests rather than a comprehensive legislative package (Feldstein, 2006). Subsequent congressional legislation through 1965 additionally entered an arena where fragmentation resulted in Congressional accommodation to satisfy one self-interested group to legislate in favor of another (Feldstein, 2006; Longest, 2006). The professional and health associations, all clearly united in industry development, were just as clearly in conflict over which entity should supersede, cooperate, or control the other.

Prior to the comprehensive Social Security Act Amendments of 1965, which established national health insurance for the aged, disabled, and financially disadvantaged

(Medicare and Medicaid), health industry associations opposed insurance as a way of directing medical treatment policies. The associations preferred to maintain authority for medical decision-making within individual provider discretion (Starr, 1982; Longest, 2006). Longest (2006), Barton (2007), and Feldstein (2006) linked the historical development of professional and health associations with the policy and legislative developments of health care as a responsibility of government on all levels (federal, state, and local). As each theorist pointed out, major government policies were concerned about growth in health care expense, which was increasingly affecting accessibility of the population to medical care (Wagner, 2007). All theorists, including Starr (1982) and Rothstein (1987), presented the federal government's rejection of other industrialized western European nations' comprehensive solutions as politically or morally unacceptable to the United States' socio-economic values. Longest (2006), Barton (2006), and Feldstein (2006) suggested that the only avenue open was one that was fragmented, but addressed each issue as it arose. Longest (2006) noted exemplary evidence of this through a chronological list of health care related federal laws between 1978 and 2005.

The vast majority of United States legislation from 1968 through 2008 addressed the financing of health care services to one group or another: veterans, military, aged, disabled, Native Americans, poor, middle class, labor, and corporations, to name a few (Wagner, 2007). U.S. governments, federal and state, primarily governed neither by nationalizing nor employing the caregivers or insurers, but by subsidizing the consumer to receive medical care in a variety of circumstances primarily through insurance vehicles. As the federal, state, and local governments failed to produce a cohesive national health care system, fragmented federal health legislation provided affordable access for disparate and disadvantaged groups, allowing Congress to avoid collaborative failure for more comprehensive solutions among associations and provider groups. As a result, a diverse and significant gap of uninsured individuals emerged amounting to over 15% of the total present-day population. The uninsured faced three important concerns: (a) less medical care and more health problems than the general population, (b) disproportionately accumulating medical debt and risk exposure to personal bankruptcy and, (c) delayed or unsought medical treatment leading to a higher rate of serious illness and avoidable health problems (The Kaiser Commission, 2000).

The Obama administration recognized the egalitarian disadvantage of the uninsured as part of an overall attempt at health care reform in the United States. Prior to current-day legislative attempts at health care and insurance reform, the President's Council of Economic Advisors (CEA, 2009) encouraged public policy and legislation to expand public health care coverage to increase economic and health wellness for the uninsured, thereby increasing the national labor supply and the functioning of the labor market (p. 3). According to the CEA (2009), the provision of inexpensive preventive and primary care helps individuals avoid costly chronic conditions and provides better outcomes toward individual, and ultimately, community wellness. While administrative and congressional studies proceeded, DeNavas-Walt, Proctor, and Smith (2008) noted that Hispanic minorities, of which Mexican-Americans (MA) comprise over 60%, made up more than 30% of the nation's uninsured (PEW, 2002). MA Hispanic populations concentrated on the United States-Mexico border represent disproportionate numbers of community uninsured. Programs designed to assist MA Hispanics with medical treatment by expanding public health insurance options and strengthening access and affordability, appear to be relevant for most financial and medically disadvantaged populations (Horvitz-Lennon, McGuire, Alegria, & Frank, 2009; Sarrazin, Campbell, Richardson, & Rosenthal, 2009).

Problem Statement

The Mexican American population along the Texas-Mexico border ranks nationally among the highest uninsured communities in the United States (Strayhorn, 2005). The uninsured obtain less and delayed medical care and experience more health-related problems leading to expensive chronic conditions, delegating publicly funded facilities with unfunded and possibly unpaid costs of care (Davis, Schoen, Schoenbaum, Doty, Holmgren, Kriss, Shea, 2007; DeNavas-Walt, Proctor , & Smith, 2008; Heymann, Nunez, & Talavera, 2009; Kaiser Commission on Medicaid and the Uninsured [Kaiser], 2007). Yet, prevailing theories to ameliorate uninsured health disparities do not indicate whether PSHI solutions controlling the cost of care and manage enrollee participation in medical treatment for chronic conditions improve the health of the predominantly Mexican American enrolled population along the border (Boda, 2007; Livingston, Minushkin, & Cohn, 2008). Prior research identified the need to scrutinize the role of preventive and primary care to lower costs and improve individual and public health in highly uninsured communities (Ross, Bradley, & Busch, 2006).

Local government solutions include indigent managed care health plans (PSHI) that provide health maintenance, promotion, and disease prevention (Taylor, Cunningham, & McKenzie, 2006). The current study quantified participation and effectiveness of PSHI, targeting Mexican Americans, to improve individual health and contributes to the body of knowledge in public health policy and administration. The study contribution relates to public policy and health services research effectiveness designed to address problems of the uninsured through the promotion of preventive and primary care.

Implications for Social Change

Federal health services policies under the Obama administration reflect significant social change potential. The literature reflects compelling health service issues affecting the uninsured (DeNavas-Walt, Proctor, & Smith, 2008; Davis et al., 2007; Heymann, Nunez, & Talavera, 2009; Kaiser, 2007). As stated above, prevailing theories suggest that the lack of health insurance detrimentally influences public health. The Obama administration and Congress, in proposing and passing the Patient Protection and Affordable Care Act (H.R. 3590, P.L 111-148) (PPACA), combined with a separate reconciliation bill (H.R. 4872) intended to expand health care coverage to 32 million uninsured Americans by 2019 (CEA, 2009; Marquez, Mitchell, & Crytzer, 2010). The United States government, therefore, legislatively attempted positive social change from the Obama administration’s viewpoint in March 2010 by providing mandatory health insurance to the uninsured through federal policy and legislation. This study contributes to positive social change by examining one of the core principles behind the PPACA

2010 legislation: that mandating health insurance coverage ameliorates the detrimental effects for the uninsured and improves health outcomes for Mexican-Americans along the United States border.

Background of the Study

Since the early 20th century, United States government health and medical treatment policy centered on the provision of health insurance, rather than the direct government employment of health care providers (Wagner, 2007). The United States and European allied countries, toward the end of World War II, stood at a policy crossroads due to the high number of returning injured and debilitated war veterans and rising middle class socio-economic conditions. The Europeans took a socialized “cradle to grave” path of medical provision such as The Beveridge Plan in Great Britain (Starr, 1982, p. 280). Despite the efforts of both the Roosevelt and Truman Administrations to socialize medicine from education through tertiary care in the Social Security Acts of 1935 and 1940, as well as legislation proposed in the early to mid-1950s, socialization of programs by the government was politically infeasible (Starr, 1982). The consumer costs of medical care ascended after WWII. The science and technology of medicine, the cost of labor, medical facilities and equipment, and the short supply of physicians contributed to an exponential increase in costs (Rothstein, 1987). The second half of the twentieth century found the consumer and government financing these rising costs (Barton, 2007). Driving the consumer finance vehicle was commercial insurance. Driving government finance was policy and legislation to assist consumers unable to obtain employer sponsored health insurance (ESHI) and grants to expand the health and medical care infrastructure (Barton, 2007; Longest, 2006).

Private and Employer Sponsored Commercial Health Insurance

According to Barton (2007), private health insurance began as provisional support income in case of disability (p. 117). Dating back to 1850, health insurance included a death benefit to assist families with burial costs, a very lucrative business for insurance companies for 100 years up to WWII (Starr, 1982). Vast industrial expansion after WWII, together with soaring medical care costs, created a vortex of consumer, industry, and provider demand for government assistance. While the Truman Administration struggled with proposals for a consolidated health system to include national comprehensive health insurance, Congress accommodated industry employers' cost in providing ESHI by exempting employer paid insurance premiums as a taxable benefit to employees (Feldstein, 2006). By foregoing federal tax revenue from the ESHI federal mandate, the government essentially financed a significant portion of health insurance to a large majority of the working population, while promoting health insurance businesses in the private sector. Although part-time workers and employees of companies with less than 100 employees did not benefit under this legislative mandate, by 1997, coverage under ESHI included 76% of full time workers and 21% of part time workers (Barton, 2007).

ESHI expanded to embrace most contingent health interactions of hospital care with medical care such as physician, physical and occupational rehabilitation, mental health, dental, and vision services. This caused a shift in the role of insurance from managing health risk to providing affordable access of health services to most people (Barton, 2007). Those excluded from the explosive growth of ESHI were the poor, the aged, disabled, unemployed, retired, and the unemployable segments of the population, until the Social Security Act amendments of 1965 (SSA, 1965). ESHI precluded subsequent Public Sponsored Health Insurance (PSHI) initiatives proposed by the Johnson administration in 1965, the Nixon administration in 1971, the Ford administration in 1975, the Carter administration in 1978, the Clinton administration in 1994, and finally, the Obama administration in 2010 (Feldstein, 2006; Longest, 2006; Starr 1982). All these initiatives, except the most recent Obama administration's Patient Protection and Affordable Care Act (PPACA) as amended by the Health Care and Education Reconciliation Act (HCERA) of 2010, failed for various policy and political reasons where Congress divided legislative support by financing specific providers and programs of existing PSHI (SSA, 1965 - Johnson).

Medicare and Medicaid

Medicare arose from the ashes of previous PSHI legislative failures. As the Republican administration of Eisenhower waned, the election of 1960 brought in the progressive ideas of John F. Kennedy, as president, and the legislative acumen of Vice-President Lyndon B. Johnson. President Kennedy supported PSHI but preferred it to be included in a more comprehensive program to address the needs of the poor among "Great Society" programs (Starr, 1982, p. 369). In 1965, the "landmark" health care legislation of the century was passed as Public Law 74-271, Title XVIII, Health Insurance for the Aged (Medicare); and, Title XIX, Grants to the States for Medical

Assistance Programs (Medicaid). Consequently, legislation from 1965 to 1980 included legislation that expanded the payment of individual care for those covered under the three forms of national health insurance: Medicare, ESHI, and Medicaid.

Expansion of PSHI as a Local Solution

National PSHI, as a panacea for the uninsured, while rationally attractive, was politically and financially unacceptable. The prevailing theories of pooling public funds with an option for private funds for employers, or expansion of existing PSHI programs such as Medicare, Medicaid, and SCHIP, were politically more palatable than a comprehensive one-size-fits-all plan (Ku & Broaddus, 2008; Luft, 2007). DeNavas-Walt, Proctor, and Smith (2007), Hadley, Holahan, Coughlin, and Miller (2008), and Seymour (2007), pointed out that only 18% to 30% of uninsured Americans did not qualify for government programs and made less than $50,000 per year in median family income, which number between 8.2 and 13.9 million people. According to Seymour (2007), while 14 million people appear more manageable compared to 45 million, the ethnic, age, gender, race, region, and economic status diversity may render a national health insurance plan with fixed benefit coverage, like that for Medicare, ineffective.

Currently, the number of uninsured Americans has increased from 44.8 million in 2005 to 45.7 million in 2007 (DeNavas-Walt et al., 2007). Hispanics comprise 33% of the total number of uninsured. Of the total Hispanic population, 32.1% are uninsured. The uninsured percentage of Hispanics is higher than any other ethnic or racial group in the United States (pp. 21-23). The uninsured get less medical care and have more health problems than the general population (Bovbjerg & Ullman, 2001). The government and the public generally view a lack of health insurance as a means of financial risk that leads to significant debt and personal bankruptcy (Lambrew et al., 2005). Recent research conducted on racial/ethnic health service disparities, finds that costs of healthcare exacts a national, state, and local financial toll. This cost exacerbates the concentration of social and demographic disadvantageous conditions in predominantly Hispanic communities (Bradley & Busch, 2006; Davis, Schoen, Schoenbaum, Doty, Holmgren, Kriss, & Shea, 2007; DeNavas-Walt, Proctor, & Smith, 2008; Heymann, Nunez, & Talavera, 2009; Ross, Kaiser Commission on Medicaid and the Uninsured [Kaiser], 2007). Yet, a national PSHI solution appears to be inappropriate for the unique characteristics of the predominantly Mexican American population along the United States-Mexico border (Boda, 2007). While different studies have produced different kinds of information on Mexican American medical service affordability and accessibility as a whole, none explains how a single payer national health insurance plan ameliorates the problem for Mexican American populations (Heymann et al., 2009). The factors contributing to this problem are cultural values, ethnic discrimination, immigration status, and level of family size, income, education, and employment with expensive, high deductible/co-payment or no health insurance.

Prevailing theories on providing public health insurance options for the uninsured include insurance access theory (Holahan & Cook, 2005) which holds that the type and amount of medical care is strongly related to insurance access; health inaccessibility theory (Schoen, Osborn, Huynh, Doty, Peugh, & Zapert, 2006) which posits links between health outcomes, low health disparity, and insurance accessibility; health affordability theory (Collins, Doty, Davis, Schoen, Homgren, & Ho, 2004), and complex border trade theory (Boda, 2007; Escobedo & Cardenas, 2006), all suggesting strong relationships between Mexican Americanincome disparities, the lack of medical care, the lack of financial security, accessibility to low cost cross border medications (without physician prescription), and low cost health care providers.

This study was based on three theories:

1. The insurance access theory (Holahan , & Cook, 2005), as applied by Ross, Bradley, and Busch (2006) indicating that health insurance coverage plays a critical role in medical service accessibility.
2. Financial and resource burden theory (Taylor, Cunningham, & McKenzie, 2006) purporting that privately sponsored community efforts can relieve a significant financial burden from the community safety nets and public financing.
3. Health inaccessibility theory (Livingston, Minushkin , & Cohn, 2008) suggesting that twenty-five percent of United States Hispanics do not seek primary and preventive care controlling for factors of income, need, health status, and employment.

The study used these theories and the quantitative method described below and in Chapter 3 to examine if the local government's utilization of PSHI to manage uninsured health care improved member health outcomes.

Purpose of the Study

The study examined the relationship of health outcomes between continuous, PSHI subsidized outpatient physician office visit care, and uninsured emergency care utilization for a financially disadvantaged, Mexican American population in El Paso, TX

Methodology

Predominant theories on providing public health insurance options for the uninsured including Insurance access theory (Holahan , & Cook, 2005), Health inaccessibility theory (Schoen et al., 2006), Health affordability theory (Collins et al., 2004), and Financial and resource burden theory (Taylor, Cunningham , & McKenzie, 2006), among others discussed in Chapter 2, primarily utilize quantitative designs. This study used a quantitative unobtrusive, longitudinal, one group pretest-posttest design (OGPPD) (Babbie, 2010; Katzer, Cook, & Crouch, 1998; McNabb, 2008; Trochim & Donnelly, 2007). This relational study examined the utilization of health care services prior to and following the introduction of a PSHI to improve individual health of financially disadvantaged Mexican Americans in El Paso.

The El Paso County Hospital District (EPCHD) developed a countywide indigent managed care PSHI. The research population was financially indigent Mexican Americans in El Paso, on the border of the United States and Mexico. Demographically, El Paso (pop. 609,415) is predominantly Mexican American (80%), maintaining close cultural characteristics with neighboring Mexico. Over 57% of the population is non-native born while 26% of whom have less than a high school education and the majority having achieved a high school diploma (ACS, 2008). Median household income in 2008 was $32,124. Over 36% of the population remained uninsured since 2004 (Combs, 2009; Strayhorn, 2005).

The PSHI health claims data, derived from the billing of providers to the health plan for payment, contained participant data that included all demographic and personal information including age, gender, medical treatment procedures, and diagnosis information. These elements constituted the Posttest data. The EPCHD hospital social workers captured patient data where patients continuously utilized the hospital's service location resources (physician clinics, emergency room, and other hospital outpatient and inpatient locations) for acute episodes related to chronic conditions (for one example, wound infections that do not heal due to a diabetic condition). Social workers facilitated the patients' application for the PSHI and financially qualified the patients for participation. EPCHD data included demographic and personal information including age, gender, Diagnosis Related Groups (DRG), and medical treatment procedures. These elements constituted the Pretest data. The data derived from the PSHI claims database correlated to the same patients in the EPCHD database prior to PSHI membership. As explained further in Chapter 3, the study data de-identified private health information of the patients after correlation of the patients for pre and posttest comparisons.

The study determined the health outcome effects for the financially disadvantaged and uninsured population of Mexican Americans in El Paso. By using the PPD design, the study measured the strength of the relationship between medical outcomes of episodic treatment for chronic disease with the PSHI managed care program's continuous outpatient treatment outcomes on a population previously uninsured. The study correlated the extent of the impact that health insurance had on medical outcomes.

Research Questions

This study examined the relationship between continuous, PSHI subsidized outpatient care, and uninsured inpatient, outpatient and emergency care utilization for a financially disadvantaged, Mexican American population in El Paso, TX

The research questions (RQ) for this study follow:

1. Do chronic diabetic patients experiencing acute care episodes of illness contingent with their chronic conditions have better health outcomes (reduction or elimination of the top 10 comorbid conditions resulting in emergency room visits: hypertension, fluid, and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders [Fraze, Jiang , & Burgess, 2010]) when enrolled in a PSHI MCO than those who continue to rely on a public hospital emergency room for care?

2. To what extent is the health outcome of chronic diabetic patients improved (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and triglycerides, with less frequency of comorbidity events) when enrolled in a PSHI MCO and receiving continuous clinical outpatient care in comparison to those enrollees who go to a public hospital emergency room for acute episodes of illness contingent with their chronic condition?

This study answered the RQs by using a quantitative method approach. For the RQs, the study used a quantitative pretest-posttest design (PPD) (Babbie, 2010) to examine the utilization of health care services prior to and following the introduction of a managed care PSHI.

Theoretical Basis and Conceptual Framework

The background section showed that the United States federal and state governments rely heavily on high levels of employment and robust economies for government policies encouraging employer sponsored health insurance (ESHI) coverage for the vast majority of Americans. For instance, favorable tax treatment such as tax credits and deductions for health expenses including health insurance premiums for employers and individual tax payers, historically and presently provide financial sustainability for a national private health care industry. Employment disadvantaged citizens are able to tap into PSHI through Medicare, Medicaid, Workers Compensation, community health safety net facilities, and providers, as well as a variety of other disability-related PSHI programs (Taylor et al., 2006).

However, national recessions since the 1965 advent of Medicare and Medicaid, most recently in 2000 and 2008, caused unemployment to increase with a subsequent decrease in ESHI coverage (Holahan & Cook, 2005). Holahan and Cook (2005) found that as ESHI decreases, the population of the uninsured increases, mostly absorbed by safety net providers and PSHI. In the period of 2000 – 2004, most of those absorbed by PSHI were children from SCHIP expansion, but adults were absorbed as well by expanded government assistance programs. Notwithstanding the exchange of ESHI and

PSHI, the number of uninsured has steadily increased from the mid-1990s to the present. The United States state and federal government reliance on insurance to cover affordable access to medical care ultimately suggests that with increasing numbers of uninsured, PSHI expansion is necessary to avoid declines in community health that may further exacerbate or contribute to a potential declining economic condition. While economic conditions relate to increases and declines in the uninsured, the ethnic composition of the uninsured population remains consistent. One third of the uninsured are Hispanic, the largest ethnic component of the uninsured population (DeNavas-Walt, Proctor, & Smith, 2008; Davis, Schoen, Schoenbaum, Doty, Holmgren, Kriss, Shea, 2007; Heymann, Nunez, & Talavera, 2009; Kaiser Commission on Medicaid and the Uninsured [Kaiser], 2007).

The theoretical basis for this study is that if the prevailing theory for the solution to ameliorate the potentially or currently detrimental health status of the uninsured is to provide a form of affordable PSHI, then a study of a highly uninsured MA population, consistent with the national ethnic make-up of the uninsured, should be generalizable to the national uninsured MA population of the uninsured. Since MAs make up 34% of the national uninsured population, treatments in the study, controlling for cultural characteristics such as dietary, language, occupational preferences, and general characteristics such as income, age, and education are generalizable to the national uninsured population.

Ultimately, the PTPD quantitative design that compares a specific chronic disease (diabetes) health status of an ethnically and financially consistent population before and after the introduction of a PSHI managed care program was able to reach conclusions regarding the results of the predominant theoretical solution.

The literature review in Chapter 2 indicates a widespread use of quantitative methodology to measure and test theoretical premises and foundations. Representative theories on providing public health insurance options for the uninsured indicated substantial evidence that the uninsured have better access with PSHI coverage. Health outcomes therefore, should generally improve with access and expanded service, publicly financed comprehensive coverage with little if any patient co-payment necessary for PSHI affordability for low-income populations (Collins et al., 2004; Holahan , & Cook, 2005; Schoen et al., 2006; Taylor, Cunningham, & McKenzie, 2006).

Operational Definitions

The following is a definition of terms used throughout this study:

Medical terminology appears throughout the study. The purpose of the study is the determination of improved health status within the framework for those individuals who possess a virulent and potentially dangerous chronic disease, diabetes. The following medical terminology is necessary to measure the level of disease status, the treatment plan, medical services provided, laboratory, and other tests that determine levels of disease control and mechanisms by which services rendered determining health status that suggests maintenance or further treatment.

Acute Care: defined as an office visit or hospitalization for acute illness that is curable and temporary unless the acute condition was contingent upon a chronic condition, such as retinopathy (eye disease) contingent upon diabetes. In this example, the retinopathy is chronic care.

Chronic Care: defined as an ongoing treatment for cardiovascular, diabetes or incurable long-term, debilitating disease such as cancer

Chronic Obstructive Pulmonary Disease: Chronic obstructive pulmonary disease (COPD) comprises three afflictions: chronic bronchitis, chronic asthma, and emphysema. Each affliction contains chronic obstruction of airflow in and out of the lungs. The obstruction is generally permanent and progressive over time (MedicineNet, 2010).

Claim Form Health Status: Financial records of providers contain health information to include provider identification, date of service, service provided, and diagnosis at the time of the visit, service location (i.e. hospital inpatient/outpatient, clinic outpatient, and emergency room), and facility location. Claim forms to insurance companies (see operational definition of Health Insurance Claim Form below) include this data and require a data link for medical service to primary and subsequent diagnoses in the financial record reflective of the medical record. Claim Form Health Status is the patients' medical conditions at the time the patient receives a medical service determined by the order of diagnoses in the financial record (Kongstvedt, 2004).

Congestive Heart Failure: Congestive heart failure (CHF) is a condition where the heart cannot deliver oxygen rich blood due to seriously affected pumping action. Congestive heart failure occurs due to diseases that weaken the heart muscle, diseases that cause stiffening of the heart muscles, or diseases that increase oxygen demand by the body tissue beyond the capability of the heart to deliver adequate oxygen-rich blood (MedicineNet, 2010).

Continuous Care Outpatient Medical Treatment: clinical outpatient visits with healthcare provider to monitor status of a chronic disease and manage episodic periods of detrimental disease effects

Current Procedural Terminology Code (CPT): a listing of descriptive terms and identifying codes developed by the American Medical Association (AMA) for reporting practitioner services and procedures to medical plans and Medicare (CPT, 2009).

Deficiency Anemias: When the red blood cell count or hemoglobin for men reaches a level, less than 13.5 gram/100 ml. and in women, less than 12.0 gram/100 ml, and a person is Anemic. Body chemical and vitamin deficiencies in iron, glucose-6-phosphate dehydrogenase (G6PD) and vitamin B12 can cause Anemia. The shortage of red blood cells in persons with Anemia reduces the blood's capacity to carry oxygen for vital organ functioning. Anemic persons lack energy and easily fatigue. They may also appear pale, feel chest (heart) palpitations, and become uncharacteristically short of breath. Chronically anemic children appear prone to infections and learning problems (MedicineNet, 2010).

Depression: Depressive disorders afflicted humans throughout recorded history. In the Bible, King David and Job suffered from this affliction. Depression, also referred to as clinical depression, portrayed in literature and the arts for hundreds of years, refers to a syndrome (group of symptoms) that reflects a sad and/or irritable mood exceeding normal sadness or grief. The sadness of depression appears with greater intensity and duration and by more severe symptoms and functional disabilities than is normal. Depressive signs and symptoms exemplify negative thoughts, moods, and behaviors with specific changes in bodily functions (i.e. crying spells, body aches, low energy or libido, eating, and weight problems). The functional changes of clinical depression, known as neuro vegetative signs, means that the nervous system changes in the brain cause many physical symptoms that result in diminished participation and a decreased or increased activity level. Adolescents who suffer from depression are at risk for developing and maintaining obesity. Depression increases risks for developing coronary artery disease, HIV, asthma, and many other medical illnesses including diabetes. Furthermore, it can increase the morbidity (illness/negative health effects) and mortality (death) from these and many other medical conditions (MedicineNet, 2010).

Diabetes Mellitus: Diabetes mellitus is diagnostic groups of metabolic diseases indicated by high blood sugar (glucose) levels; result from pancreatic deficiencies in releasing insulin to control the level of glucose in the blood. Normally, when the blood glucose elevates, insulin releases from the pancreas to normalize the glucose level. In patients with diabetes, the lack of insulin causes hyperglycemia. Diabetes is a chronic medical condition, which can be controlled but not cured.

Diabetes can lead to blindness, kidney failure, and nerve damage from wounds to small blood vessels, known as microvascular disease. Diabetes also contributes toward hardening and narrowing of the arteries (atherosclerosis) which leads to strokes and heart disease. Diabetes is the third leading cause of death in the United States after heart disease and cancer (MedicineNet, 2010).

Diabetes Diagnostic Status Tests: According to the American Diabetes Association, the following diagnostic laboratory tests are standard for providers to determine the health status of chronic diabetes patients (ADA, 2010c):

- *Glycohemoglobin (HgA1C):* The hemoglobin A1C test, also called HgA1c, glycated hemoglobin test, or glycohemoglobin is an important blood test used to determine how well diabetes is controlled. Hemoglobin A1C provides an average of blood sugar control over a 6- to 12-week period in conjunction with home blood sugar monitoring to make adjustments in diabetes medicines (Droumaguet, 2006).
- *Cholesterol:* Cholesterol is a form of fat carried through the body in two kinds of bundles, or lipoproteins. There are healthy levels of both (ADA, 2010).
    - *HDL:* High-density lipoproteins (HDL), or "good" cholesterol, helps remove cholesterol from the body. In general, the higher the HDL level, the better. Target HDL Cholesterol: Greater than 60 mg/dL.
    - *LDL:* Low-density lipoproteins (LDL), or "bad" cholesterol, can lead to a buildup of cholesterol in the arteries. In general, the lower LDL levels, the better. Reaching the LDL target is the most effective way to protect heart and blood vessels. Target LDL Cholesterol: Less than 100 mg. /dL.

-Triglycerides: Triglycerides are another kind of blood fat that raises your chances for a heart attack or stroke if your levels are too high. Target triglycerides: Less than 150 mg/dL.

Blood Pressure: Blood pressure is the force of blood flow inside blood vessels. Doctors record blood pressure as two numbers, such as 120/80. Both numbers are important. The first number is the pressure as the heart pulsates and pushes blood through the blood vessels. Health care providers call this the "systolic" pressure. The second number is the pressure when the vessels relax between heartbeats called the "diastolic" pressure (ADA, 2010b).

Healthy blood pressure: below 120/80

Early high blood pressure: between 120/80 and 140/90

High blood pressure: 140/90 or higher

Diagnosis: the process of determining by examination the nature and circumstances of a diseased condition and the decision reached from such an examination (Diagnosis, n.d.)

Diagnosis Related Group (DRG): A classification of patients by diagnosis or surgical procedure (sometimes including age) into major diagnostic categories (each containing specific diseases, disorders, or procedures) for the purpose of determining payment of hospital charges, based on the premise that treatment of similar medical diagnoses generate similar costs (DRG, 2008).

Fluid and Electrolyte Disorders: Electrolytes are chemical substances that conduct electricity through body fluids. Electrolyte and fluid balance in the body are necessary for the normal functions of cells and ultimately, organs. Common electrolytes measured by doctors in blood testing include but are not limited to sodium, potassium, chloride, and bicarbonate (MedicineNet, 2010).

Health Insurance Claim Form: defined as the federally defined data capture instrument completed by all providers to receive reimbursement from health insurance companies, third party administrators, and Managed Care Organizations (MCO). The claim form contains patient identification demographic information and diagnostic information necessary to determine reimbursement such as, provider identification, date of service, service provided, diagnosis at the time of the visit, service location (i.e. hospital inpatient/outpatient, clinic outpatient, emergency room), and facility location (Kongstvedt, 2004).

Health Status: is ordinal and refers to chronic or non-chronic.

Hypertension: High blood pressure (HBP) or hypertension refers to the measure of tension in the arteries. Arteries are blood vessels that carry blood through all the organs to and from the heart. Blood pressure measures in a ratio of systolic pressure where the heart pumps blood in the arteries and diastolic pressure where the heart “relaxes” after contraction. The systolic measure is the highest pressure exposed to the arteries while the diastolic is the lowest pressure. Normal blood pressure is below 120/80; blood pressure between 120/80 and 139/89 is called "pre-hypertension", and a blood pressure of 140/90 or above is considered high. Elevated blood pressure exposes health risk in the development of heart (cardiac) disease, kidney (renal) disease, hardening of the arteries (atherosclerosis or arteriosclerosis), eye damage, and stroke (brain damage). Complications associated with a diagnosis of HBP, therefore, clearly indicate the need to control it (MedicineNet, 2010).

Hypothyroidism: Hypothyroidism is a condition caused by abnormally low thyroid hormone production abnormally low thyroid hormone production. Disorders that result in hypothyroidism affect growth, development, and many cellular processes. Inadequate thyroid hormone has widespread consequences for the body (MedicineNet, 2010).

Medical Encounter (Inpatient, Clinical Outpatient, Emergency Room): A patient visit with a health care provider

Obesity: Obesity is a chronic condition defined by an excess amount body fat. While a certain amount of body fat is necessary for storing energy, heat insulation, shock absorption, and other functions, normal amount of body fat (expressed as percentage of body fat) is between 25%-30% in women and 18%-23% in men. Obesity is present when body fat exceeds these normal limits.

Body mass index (BMI) calculations also define obesity. The body mass index (BMI) is a person's weight in kilograms (kg) divided by their height in meters (m) squared. Since BMI describes body weight relative to height, it strongly correlates with total body fat content in adults. "Obesity" defines as a BMI of 30 and above (MedicineNet, 2010).

Obesity increases the risk of developing a number of chronic diseases including:

Insulin Resistance: Insulin transports blood glucose (sugar) into muscle and fat cells for energy. Insulin resistance (IR) occurs when insulin becomes ineffective or diminished in transporting glucose into cells. Fat cells are more insulin resistant than muscle cells so the prevalence of fat cells with diabetes diminishes insulin's ability and is an important cause of IR. IR is a pre-diabetes condition.

1. Type II (adult-onset) diabetes: The duration of diabetes increases the risk of type 2 diabetes.
2. High blood pressure (hypertension): Obese patients more commonly present with hypertension than non-obese adults.
3. High cholesterol (hypercholesterolemia).
4. Stroke (cerebrovascular accident or CVA).
5. Heart attack.
6. Cancer.
7. Gallstones.
8. Gout.
9. Osteoarthritis.
10. Sleep apnea.

Peripheral Vascular Disorders: Peripheral vascular disease (PVD) refers to artery and vein diseases located outside (peripherally to) the heart and brain. There are many causes of peripheral vascular disease, also referred to as peripheral arterial disease (PAD) which is a condition that develops when the arteries that supply blood to the internal organs, arms, and legs become completely or partially blocked as a result of atherosclerosis (MedicineNet, 2010).

Preventive Medical Service: defined as a medical office visit to assess health status and receive care to prevent chronic debilitating disease (e.g. diagnosis and treatment for high blood pressure).

Renal (Kidney) Failure: The kidneys are two organs located side-by-side on each side of the spine in the abdomen toward the back and function as blood filters and disposing of blood waste products. The kidneys also balance fluid and electrolyte levels, control blood pressures, and stimulate red blood cell production. Kidney failure can occur from an acute situation or from chronic problems. Chronic renal failure develops over months and years. The most common causes of chronic renal failure relate poorly controlled diabetes, poorly controlled high blood pressure, and chronic glomerulonephritis (MedicineNet, 2010).

Self-Perceived Health Status (SPHS): defines a self-reported indicator of physical and emotional health and well-being. Widely used by researchers, SPHS suggests what individuals believe and state is their level of wellness (Logie, 2008).

Uninsured: defined as dispossessed of a health insurance policy without regard to the plan type, coverage or length of time without health insurance

Assumptions, Limitations, Scope, and Delimitations

Assumptions

One objective of PSHI is that insurance will remove financial obstacles for beneficiaries to seek preventive and maintenance health services, thereby avoiding or managing chronic conditions (CEA, 2009; Livingston et al., 2008; Ross et al., 2006; Taylor et al., 2006). Quantitatively, measuring data such as the progression of diagnosis in a health record indicates the improvement or maintenance of a patient's health condition. In addition to the patient health record, this study utilized PSHI health insurance claim form (HICF) data received from physician providers who receive payment from MCOs by completing HICF (Appendix A). For data collection purposes, MCOs record the diagnosis in order of the reason for treatment of a patient that initiated a claim for payment. For instance, if the patient visits a physician for diabetes management, the primary diagnosis may be "diabetes" with contingent coding to indicate whether the condition was "controlled" or "uncontrolled." All other chronic diagnoses will be listed but in secondary positions. However, if the same patient visited the physician for flu-like symptoms, the primary diagnosis might be "influenza" with the secondary diagnosis as "diabetes, controlled" (Decision Health, 2009; Appendix B). The PSHI under study specifically enrolls patient members with chronic disease diagnoses that have visited the EPCHD hospital and physician service locations for treatment of a condition that indicated a PSHI-qualified chronic condition. This study assumes that the patients visited these EPCHD service locations for illnesses or injuries contingent to the chronic condition that preceded enrollment in the PSHI MCO.

Health care providers are required by federal and state laws as well as contractual agreements to submit HICF for medical services on the level they were provided and for the reasons stated on the claim form. Most formal contractual arrangements between MCOs and providers allow for periodic audit of medical charts with claim forms to ensure accuracy of the data submitted on HICF. The study assumes that health care providers submit health care claim forms to MCOs honestly and accurately.

Limitations

Self –perceived and self-reported health status categorizes respondents as “healthy” or unhealthy” regardless of the presence of a chronic health condition. Self-perceived health status is important to determine if a prospective PSHI beneficiary would seek continuous health services if their self-perceived health status is “healthy” even though chronic conditions may be present (Logie, 2008). Although the claims data may indicate a patient’s chronic condition is controlled or well managed, the self-perceived health status of the patient may be different from the data indications on the HICF or the laboratory results suggest. This study will not examine whether patients feel healthy, only if the claims, laboratory, and medical record data indicated improved health since the patients’ enrollment in the PSHI.

In this quantitative study, the dependent variable is Mexican American Hispanic families in El Paso, TX, who qualify for enrollment in the PSHI. Previous studies generalized Hispanics into one ethnic minority with a common culture (Boda, 2007; Valdez, Giachello, Rodriguez-Trias, Gomez, & De La Rocha, 1993). However, this population variable narrows to Mexican American due to political and policy issues with Mexican immigration and larger, more cohesive population groupings nationally (DeNavas-Walt et al., 2007). The United States-Mexico border location of El Paso consists of an 80% Mexican American population with various income levels and immigration status that may not be wholly generalizable to other national Hispanic ethnic groups such as Cuban, South American, Caribbean Islands, and Puerto Rican (ACS, 2008). Mexican Americans are culturally unique to social and language customs from Mexico that may vary from other Hispanics from other countries of original immigration.

Patients arrive at emergency rooms for various reasons and degrees of illness or injury. This study is limited to patients who arrive in the EPCHD service locations who are uninsured, meet financial requirements to qualify for the PSHI, arrive for treatment for conditions contingent upon a diabetic chronic condition such as foot and skin complications, heart disease, neuropathy, stroke, hypertension, kidney disease, eye complications, and stress among others (ADA, 2010d; Appendix C). Patients who have diabetes and arrive in the EPCHD service locations for conditions other than those associated with diabetes, that did not meet the financial qualifications, were covered by a private health insurance plan, ESHI, Medicare, Medicaid, CHAMPUS or SCHIP were not included in this study.

Scope and Delimitations

Prevailing theories on health disparities of the uninsured suggest that provision of low cost PSHI improves health outcomes. The study examined the relationship between continuous PSHI subsidized physician clinic outpatient care, and higher cost emergency care utilization for a financially disadvantaged, Mexican American population in El Paso. The scope of this study also encompassed the measurement of MA patient health outcomes in El Paso prior to and after receiving membership and particpation in a community sponsored PSHI in all service locations available.

This study was delimited by those uninsured MA patients seeking EPCHD service location care and subsequently offered and accepted PSHI membership for contingent care related to diabetes, a chronic and mostly incurable disease. The type of care, visit reason, and diagnosis were variables in the pretest and posttest portions of this quantitative study.

Significance of the Study

The literature portrays prolific research about the uninsured by multiple demographics from different perspectives in the last two decades. DeNavas-Walt et al. (2007) has annually analyzed poverty in America including the uninsured, since the early part of this decade. However, four circumstances make this study uniquely relevant to public policy and democratic governance today:

1. The Obama administration made national health insurance reform a top legislative priority and Congress passed enabling legislation known as the Patient Protection and Affordable Care Act (H.R. 3590, P.L 111-148) (PPACA), combined with a separate reconciliation bill (H.R. 4872) intended to expand health care coverage to 32 million uninsured Americans by 2019 (CEA, 2009; Marquez, Mitchell, & Crytzer, 2010).
2. The United States Congress and health, professional, and insurance associations negotiated criteria to make publicly funded insurance a national affordable reality (Alonso-Zaldivar, 2009).
3. Preventive and maintenance health services are a primary objective of public health insurance initiatives (Fielding, Tilson, & Richland, 2008).

4. No study has tested the strength of the relationship between possession of PSHI and health outcomes among its enrolled patients with the exception of the frequency of visiting emergency rooms for adverse health events.

The uninsured population is a heterogeneous group without consistent demographics. They reach across sectors not affected in the same ways (DeNavas-Walt et al., 2007; Hadley et al., 2008; Seymour, 2007). While the literature acknowledges the uninsured tend toward health and wellness disadvantage, the study of uninsured propensity to behave in a predictable way with the introduction of the public insurance variable is unlikely without determining a consistent population group with shared cultural and behavioral values. Impoverishment and disadvantage of Mexican Americans as a dependent variable in this study meet three important considerations:

1. Mexican Americans on the southern United States border share cultural values with Mexico, due to proximity, more closely than other Mexican American communities north of the border (Boda, 2007).
2. Many cultural characteristics of Mexican Americans carry over in the first through third generations from immigration (Pew Hispanic Center, 2002).
3. Mexican-Americans make up the largest segment of the Hispanic ethnic population in the United States. All Hispanics make up the largest percentage of the nationally uninsured population (DeNavas-Walt et al.., 2007; PEW, 2002; Valdivieso, 1990). As a result, the study significantly relates to public policy effectiveness designed to address problems of the uninsured through

the application of PSHI enrollment promoting preventive and maintenance care for chronic medical conditions.

Goals of Research

The goals of this study were two-fold: (a) to determine the strength of the relationship between possessing individual public health insurance and obtaining preventive and maintenance care for those previously uninsured, and (b) to determine the effectiveness of a consumer-affordable public health plan option for the uninsured that improves and maintains patients' health and wellness.

Purpose of Research

The purpose of this quantitative study is to test the insurance access theory and financial and resource burden theory on impoverished Mexican Americans in and around El Paso, Texas.

Social Significance of Research

This study contributes to the body of knowledge by quantifying outcomes and effectiveness of a public managed care health plan targeted at primary and maintenance care for the financially disadvantaged El Paso, TX, Mexican American population with chronic diabetic conditions.

Summary and Transition

This study examines the relationship of health outcomes between continuous, low cost, PSHI subsidized outpatient care, and high cost uninsured inpatient and emergency care utilization for a financially disadvantaged, Mexican American population in El Paso.

Over the last century and prior to 1965, federal government attempts to form a cohesive national health care policy and system including education, professionals, pharmaceuticals, and institutions has failed. Congressional failure for health care systemization resulted in self-interested health professional and insurance associations' successful attempts to fragment legislation to benefit their individual groups. As a result, health care sectors of education and associations of medical services formed loose networks at cross-purposes.

The advent of Medicare and Medicaid in the entitlement amendments to the Social Security Act of 1965 bore the first vestiges of national health insurance (NHI) for specifically disadvantaged groups of the elderly, disabled, poor women, and children. As the base of employer sponsored health insurance (ESHI) grew with the economy, and NHI covered the disadvantaged groups, health care sector business expanded, and developed technologically, scientifically, and professionally, with compounded growth in costs. Health treatment and insurance cost growth drove ESHI participation to lower levels while further ostracizing uninsured individuals from procuring medical treatments. Since the early part of the 1990s to the present day, the federal government attempted health care cost control through regulation of industry, while NHI for anyone, other than the most disadvantaged, remained politically unpalatable.

Federal policy and the Obama administration targeted mandatory health insurance coverage as a means of medical service accessibility and affordability, theoretically leading to prevention of costly chronic disease. Currently, Hispanics comprise 33% of the total number of uninsured with a corresponding percentage (32.1%) of uninsured in the Hispanic population. Lost employment productivity and chronic indigent health care leads to Hispanic social and demographic disadvantage. While different studies produced information on uninsured Hispanic medical issues, none addressed the most common recommended solution, health insurance.

If the prevailing theories for the improved health outcomes for the uninsured is to provide a form of affordable PSHI, the theoretical basis for this study determines the strength of the relationship between the health outcomes of those insured with PSHI and those uninsured. The validity and reliability of the variables is enhanced by a culturally and economically consistent study population of the predominant ethnic composition of the uninsured population. Consequently, the financially disadvantaged and uninsured Mexican American population of El Paso, Texas, should be significantly generalizable to the national population of the uninsured.

The goals of this study were two-fold: (a) to determine the strength of the relationship between possessing individual public health insurance and obtaining preventive and maintenance care for those previously uninsured, and, (b) to determine the effectiveness of a consumer-affordable public health plan option for the uninsured that improves and maintains patients' health and wellness. This study contributes to the body of knowledge by quantifying outcomes and effectiveness of a public-sponsored managed care health plan targeted at primary and maintenance care for the financially disadvantaged El Paso Mexican American population with chronic diabetic conditions.

As examined in Chapter 2, the conceptual framework for the study relied primarily on the theories of Holahan and Cook (2005), Schoen et al. (2006), Collins et al.

(2004), and Taylor, Cunningham, and McKenzie (2006) that state the solution for Hispanic uninsured deteriorated health outcomes and its subsequent detrimental personal health and community issues is government provided health insurance. The researcher examined health outcomes from insured chronic disease management through existing public health insurance options for indigent Mexican American families, with records of medical services prior to and after the introduction of insurance. Ultimately, a PTPD quantitative design (Babbie, 2010) that compares a specific chronic disease (diabetes) health status of an ethnically and financially consistent population before and after the introduction of a PSHI managed care program, the researcher reached conclusions regarding the results of the predominant theoretical solution. Chapter 3 further enumerates instrumentation and data methods utilized in the study. Data results from 712 patients with 5,300 visits in various medical treatment locations pre and post insurance receipt are reviewed in Chapter 4. The results indicated whether health outcomes improve after receipt of insurance coverage, if health accessibility occurred in specific locations prior to and after receiving insurance coverage and if the location of medical treatment makes any difference in the insured health outcomes. Discussion takes place in Chapter 5 on the conclusions reached from the data results as well as recommendations for further research.

Chapter 2: Literature Review

Introduction

In this literature review, the research subject focuses on national system-wide, health insurance, and its establishment as the core element for a national health care system to maintain and improve individual health. Utilization of the following databases searched for literature that directly addressed the issues contained in research conclusions for health care system reform: EBSCO, OvidSP, Proquest, Academic Search Premier, Journal of the American Medical Association, and SocINDEX. Keywords and phrases used for the search included the following: *health care system reform; health system reform; federal government policy; health reform; economic health reform measures; health reform objectives; health reform measurement and standards; medical service affordability and accessibility changes; professional health association reform; public sponsored health insurance; county managed care organizations; government managed care organizations;* and *indigent health care insurance coverage.*

The purpose of the research was to test the strength of the relationship between PSHI and the patients' health outcomes before and after enrollment. The study tested the relationship through a pretest/posttest methodological design (Babbie, 2010) that measured individual diabetic patients' number, type, and health outcome of visits to the EPCHD service location as pretest variables with the patients' number, type, and health outcome of visits with PSHI enrolled patients' primary care physician as posttest variables. This study contributes to the body of knowledge by quantifying the strength and significance of the relationship between health insurance and health outcomes. The results of the study may affect local, state, and national government health policy, insurance administration with implications toward affordability and medical accessibility, clinical/physician medical practice administration and public hospital resource allocation.

Issue Background

One hundred fifty years of legislative and private initiatives to exercise regulatory and market control in the health care system have resulted in a fragmented system of providing medical services (Wagner, 2008). The major stakeholder sectors in health care such as physicians, nurses, laboratories, hospitals, nursing homes, pharmaceuticals, equipment, and supplies parsed into self-interested health-related associations seeking government support to protect markets and loosen sovereignty held primarily by physicians (p. 18). Employer sponsored health insurance (ESHI), which began in the early 20th century as a private employer benefit for some or all employees, grew in national congressional support for tax exemptions for individuals and corporations to encourage growth and development. By 1988, close to 74% of the United States population was covered all or part of a year by ESHI (Levit, Olin, & Letsch, 1992).

The entitlement amendments to the Social Security Act of 1965 created the nation's first national health insurance (NHI) in Medicare and Medicaid specifically designed for disadvantaged groups of the elderly, disabled, disadvantaged women, and children who were unable to obtain ESHI (Barton, 2007; Feldstein, 2006; Longest 2006). NHI in the form of Medicare, Medicaid, CHAMPUS, and other direct government subsidized health insurance provided medical accessibility and affordability for over

12.3% of the population (Levit et al., 1992). Together, ESHI and NHI covered over 86% of the population with health insurance by the late 1980s. The consequence of ESHI and NHI expansion supported by direct reimbursement or indirect tax exempt government subsidies was unprecedented growth in the health care sector economy.

Growth and development in health technology, hospitals, pharmaceuticals, and allied health professions occurred due to the demand from increased covered lives in the expansion of ESHI/NHI (Barton, 2007; Feldstein, 2006; Longest 2006). Between 1965 and 1990, the nation maintained healthy economic growth, controlled health care prices, insurance premiums, and employment. The government, through payroll taxes, provided NHI for the aged, disabled, poor, and the military. In addition, the federal government established a model for medical care accessibility and affordability through tax-exempt financing ESHI benefits (Fuchs, 1998). Concerned about "patient dumping", a term used to convey the idea that private hospitals will transfer uninsured or under-insured patients to public facilities, Congress passed the Emergency Medical Treatment and Labor Act of 1986 (EMTALA) requiring hospital emergency rooms to treat, or stabilize before transfer, everyone presenting themselves for care regardless of their ability to pay. Violation of EMTALA results in stiff monetary penalties and hospitals risk losing Medicare certification, a key component of hospital accreditation, to provide services to the public (Sultz, & Young, 2009). Consequently, if health care is accessible and affordable through the provision of insurance, then logically, the federal and state governments established a consumer health care model quintessential to the free enterprise system historically embraced by the United States (Barton, 2007; Fuchs, 1998;

Weissert & Weissert, 2006). Through health insurance, the United States established a system to maintain individual health.

Congressional Attempts to Control Spiraling Health Care Costs

From the early 1970s to the present day, the federal government attempted health care cost control against steadily rising costs, through regulation of the health care industry via payment regulations for physicians, hospitals, and nursing homes from Medicare, Medicaid, and other government NHI (Altman, Reinhardt, & Shields, 1998; Rice, 2002; Weissert & Weissert, 2006). Attempts at health care cost controls through legislative efforts to obtain NHI for the entire United States, have occurred since the Truman Administration in the 1950s. Altman et al. (1998) notes that NHI initiatives proposed by the Johnson administration in 1965, the Nixon administration in 1971, the Ford Administration in 1975, and the Carter administration in 1978 failed for various policy and political reasons. Fragmented Congressional support divided legislation by financing specific segments of proposals that benefit the legislators' constituencies. An example might be patent extension for a particular drug manufactured by a pharmaceutical firm in a legislator's congressional district or federal funding for care of a disproportionate share of Medicaid patients (Weissert & Weissert, 2006).

Since 1990, health sector development and growth led to flourishing increases in costs and prices of medical treatment and insurance premiums. Total health care sector expenditures as a percentage of Gross Domestic Product (GDP) grew from a rate of 9% in 1980 to 16.2% in 2008 (CMS, 2010). As a result, health insurance premiums increased and the cost of medical care steadily drew toward corporate budget limits and government deficits. Spiraling health care costs created a flurry of predominantly unsuccessful cost control legislation through Congress. All the health care legislation between the Health Planning Act of 1966 (CHP) through the American Health Security Act of 1993 intended to make health care less costly, insurance less expensive, and medical care accessible and affordable to all who need medical treatment (Sultz & Young, 2006; Weissert, & Weissert, 2009). Compartmentalized and fragmented health care cost control legislation stymied efforts for national universal and comprehensive public sponsored health insurance (PSHI) as sweeping reform for cost and quality controlled medical care until the 1992 Clinton Administration. By 1990, due to the high cost of medical care, health improvement meant ownership of a health insurance policy.

The Failure of the American Health Security Act of 1993

In 1993, health insurance was the backbone and critical ingredient for medical services. As health care financially succeeded, investments in health technology, infrastructure, research, pharmaceuticals, and medical procedures exploded. Consequently, the rate of growth in health spending outpaced the rest of the economy, as demonstrated above (Fuchs, 1994). Congressional efforts to control spending for two decades were ineffective and fraught with political influence. Increased costs in medical care and insurance, both public and private, drove down the proportion of persons with private health coverage from 83% in 1980 to 70% in 1991. The rate of growth of the uninsured became an increasing concern to the extent that majority consensus agreed on four points:

1. Universal insurance coverage for all citizens was necessary to control costs and improve health.
2. A legal government mandate was necessary to require coverage for all citizens.
3. Only the federal government could issue such a mandate.
4. A federal mandate was socially and legally acceptable (Altman et al., 1998; Weissert & Weissert, 2006).

Based on these assumptions and concerns and that health reform will lead to improved national population health, the Clinton Administration proposed sweeping health reform in the American Health Security Act of 1993 (AHS). AHS fundamentally proposed NHI legislation that included the following key elements:

1. Universal coverage for all citizens.
2. Payroll tax financing.
3. Subsidies for low-wage, unemployed, and retirees aged 55– 64.
4. Community rated premiums adjusted for local conditions.
5. Health alliance organizations to contract with private insurance companies and provide a menu of consumer health care plans.
6. Risk adjustment by paying providers for a patient care pool rather than fee-for-service.
7. Cost contained with price control authority with the health alliance organizations.

8. A National Health Board appointed by and responsible to the president of the United States interpreting congressionally determined benefits, risk adjustment development, and a system or price controls among other duties.

AHS faced fierce resistance in Congress, from health associations, insurance associations and the public (Sultz & Young, 2009). The literature extensively elaborates on the failure to pass and enact AHS through Congress. The President Clinton was politically weak from prior pressure on early legislative agenda items such as NAFTA and an economic stimulus program. The president had little political advantage and diminished influence with members of the majority party (even though both were Democratic) weakening party discipline further from changes in campaign finance rules. Finally, the sheer complexity of the health reform plan exceeded all legislation that preceded it (Altman et al., 1998; Weissert & Weissert, 2006).

Many believed that universal coverage through national health insurance reform was a dead issue for many years to come. However, the debate on AHS unlocked publicly unknown elements of the health care system that created complexity in medical insurance. Items revealed in the debate such as risk adjustment, premium costs, provider financial rewards to reduce sophisticated and expensive diagnostic tests and the roles of employment benefits relationship to corporate and individual tax treatment portrayed the complex relationship between health insurance and health care. The failure to enact AHS released a ferment of self-regulatory cost, contracting, and quality controls through the enterprise of Managed Care Organizations (MCO) (Altman et al., 1998). MCOs initially evolved from Health Maintenance Organizations (HMO) with highly restricted choices in health plans and providers to the Preferred Provider Organization (PPO) with less limited plans and provider networks: The more liberal the plan with extensive choices, the higher the cost. Under the theory of “less is more,” insurance companies became agents with the “power to influence patterns of care, staffing of hospitals, access to physicians, salaries and fees of providers, and other aspects of the delivery of healthcare,” where previously they were only agents to pay claims of self-insured employers (p. 241).

While MCOs initially succeeded in holding down the rate of growth in health care expenditures until 2004, their public market competition impact affected other areas such as:

1. Consumer price sensitivity to preference.
2. Reducing the price of health insurance premiums.
3. Increasing concern over quality of care.
4. Changing the formula for provider reimbursement.
5. Tightening access to care and made experimental treatments available to patients whose cure probability was low (Feldstein, 2006).

While MCOs successfully reduced cost, they did so by restricting access and services, simultaneously feeding the political opposition who favored an AHS type of plan. As public dissatisfaction grew and the rolls of the uninsured increased, the gap between quality of care/health improvement and the role of health insurance widened as more of the public viewed MCOs as managing costs over managing care (Altman et al., 1998; Barton, 2007; Feldstein, 2006; Sultz & Young, 2009).

The Uninsured

Numerous annual publications enumerate the fluctuating numbers of uninsured in the United States. Most notably, DeNavas-Walt et al. (2007) analyzed United States Census Bureau data to present a national report on the status of poverty in America that includes the relationship of poverty and low income to the condition of uninsured. A thorough review of the literature demonstrated that the uninsured population of the United States represents a gap in United States health care policy that, due to health and health insurance cost, prevents low-income citizens from obtaining medical services. In other words, the research indicated that a person's uninsured status placed medical service procurement unaffordable and inaccessibly out of reach. This predicament results in health disparities among this population, disproportionately among racial/ethnic minorities, because of their inability to maintain health and prevent disease (Smedley, Stith, & Nelson, 2008).

Consequently, this inequity caused a fragmented regulatory and business climate that heightened the health care industry's complexity, further complicating the ability to navigate the system to obtain care when ill, much less seek preventative care. Resulting inaccessibility, worsened by a blend of governmental and self-regulated professional associations' limits on the supply and training of medical, nursing, and allied health profession students, as well as government regulatory and financing constraints for medical education, incommensurately affects the uninsured population (Feldstein, 2006). Thus, inaccessibility and unaffordability is a self-fulfilling circle of democratic governance gone awry. As more legislation occurred to address the problem, even more legislation passed to protect medical professionals from financial risk. As providers received economic protection through legislation, the less accessible and less affordable medical care became. Thus, popular calls for health care system and health insurance reform, to alleviate the problems associated with the uninsured, raised the vision of government solutions for social change.

There is little evidence to suggest that the syllogistic national belief that providing health insurance to the uninsured will lead to improved health (Fuchs, 1998). When considering other determinate health factors such as the role of genetics, geographic environment, psychosocial circumstances, and personal behavior, possessing health insurance appears to be a minor determinate. However, there are those recognizably effective and inexpensive medical treatments for bacterial and viral infections as well as minor surgeries such as tonsillectomies and appendectomies that health insurance appears financially beneficial. In addition, the American protocols for treating more serious conditions correlate to routinely more expensive treatments than are provided by western nations like Canada that have national health insurance and choose to treat less expensively by using less expensive technology. Consequently, the United States shows better morbidity and mortality rates for these procedures (Fuchs, 1998, p.211) (i.e. cardiovascular disease where medicine may be used in Canada versus interventional procedures such as angiogram, angioplasty, and bypass surgeries in the United States)

Finally, substantial evidence suggests that populations with long-term chronic conditions requiring continuous medical treatment that have health insurance, access medical care significantly more than those who do not (Davis, Schoen, Schoenbaum, Doty, Holmgren, Kriss, Shea, 2007; DeNavas-Walt, Proctor, & Smith, 2008; Heymann, Nunez, & Talavera, 2009; Kaiser Commission on Medicaid and the Uninsured [Kaiser], 2007). Thus, United States government policy historically presumes that health insurance leads to accessibility, which further leads to affordable medical treatment for disease or illness, subsequently leading to better health outcomes (Foote, Virnig, Town, & Hartman, 2008).

Rising Populations of Uninsured

Because the research evidence suggests better health outcomes for the insured, the United States' uninsured population is a concern to its politicians, the United States health care industry, and those individuals without health insurance coverage who experience disparities in access and affordability. According to the United States Census Bureau, the percentage of Americans without health insurance shrank to 15.3% in 2007, from 15.8% in 2006 while the number of uninsured Americans decreased from 47 million in 2006 to 45.7 million in 2007 (DeNavas-Walt et al., 2008). In addition, while the number and percentage of people covered by private insurance and ESHI is insignificantly different from 2006 to 2007, the number of persons covered by government insurance increased almost one percent or 3 million people reflecting a burgeoning growth in the aged population (p. 20).

As stated in the Introduction, by 1988, close to 74% of the United States population was covered all or part of a year by ESHI while NHI in the form of Medicare, Medicaid, CHAMPUS, and other direct government subsidized health insurance provided medical coverage for over 12.3% of the population (Levit et al., 1992). While coverage for a part of the year calculates into the totals for 1988, the literature notes that coverage for part of the year can only count toward coverage if the health care accessibility and affordability needs of the insured address the medical needs of the patient during the coverage period. For those with chronic conditions, coverage for part of the year, may be as detrimental as being uninsured, if care for the chronic condition is interrupted or fragmented for an extended period of time exceeding primary or preventive care follow-up (Cohen, & Martinez, 2010). In the Levit et al. (1992) study, differentiated coverage for part of the year counted toward those covered through the entire year.

The data contrast 19 years later indicates a shift of inverse proportion in national coverage with ESHI dropping to 59.7% and government NHI coverage increasing to 27.8% (DeNavas-Walt et al., 2008). While total health insurance coverage remained consistent from a percentage standpoint, the uninsured became a national concern. Increased costs of medical care, technology, and pharmaceuticals indelibly linked health insurance with affordability and the ability to receive medical care (Sultz & Young, 2006; Weissert & Weissert, 2009). Thus, the uninsured, as shown by the research literature, became an increasingly vulnerable and disparate population.

Problems of the Uninsured

In a 2007 Gallup poll (Guadalupe, 2007) health care costs ranked highest in Americans' personal financial concerns because of health care expenditures rising at twice the rate of inflation and insurance premiums rising concurrently. In February 2007, the costs of health care ranked Number 2 as an overall concern among Americans, with the Iraq War as the only national issue ranked higher. Health care issues ranked higher than the economy in general, immigration, education, fuel/oil prices, national security, terrorism, the federal budget deficit, environment/pollution, international issues, Social Security, and Medicare (Carroll, 2007). Americans' dissatisfaction with the health care system and their perception of crisis, subsequently led to a popular perception that the federal government is responsible for ensuring that all Americans afford the opportunity to obtain health care coverage (The Gallup Organization, 2005). The responsibility for maintaining health is individual and the assurance that each individual has access to health care when a person's health diminishes becomes a concern for society because a healthy, productive population is a benefit for all who live in society (Wagner, 2007).

The general perception of the literature indicates that those without health insurance coverage are specifically disadvantaged in obtaining health and sick care due primarily to financial concerns. The uninsured obtain less and delayed medical care, more health-related problems and increased debt leading to expensive chronic conditions, placing public facilities with the responsibility of managing increasing costs to the community (Bovbjerg, & Ullman, 2001; DeNavas-Walt et al. 2008; Davis et al., 2007; Heymann et al., 2009; Kaiser, 2007). "The lack of coverage exacts a large personal financial toll, running up debt, and contributing to personal bankruptcy…[which] also results in billions of dollars in uncompensated care costs that get passed along through the health system" (Lambrew, Podesta, & Shaw, 2005, p. 119). Consequently, the costs of delivering care to those who cannot or will not pay for their healthcare, exacts a financial toll on the nation. The pervasive and persistent financial toll, especially pronounced in a present day and national post-recession economic recovery, falls on local communities politically pressured to increase taxes to pay for health care with uncertain medical outcomes (Brown & Stevens, 2006).

While political NHI initiatives devote attention to the disadvantages of the uninsured, the condition of being uninsured is both financial and medical, affordability and accessibility. The question arises: Is simply being uninsured a condition that contributes to an unhealthy population or are the uninsured and the insured populations' beneficiaries of the same medical outcomes? Bovbjerg and Ullman (2001) suggested that the uninsured get less medical care and have more health problems than the general population and that providing insurance would make people more likely to seek health care. Lambrew et al. (2005), referring to a review by the Institute of Medicine (IOM) found uninsured people have disadvantageous medical outcomes because of delayed or denied care. Treated differently once in the system, the uninsured pay more for medical care directly out-of-pocket than those who are insured. According to The Kaiser Foundation (Kaiser, 2000), lack of health insurance influences how people obtain medical care. Facts from the Kaiser Foundation (2000) research concluded adverse affects for the uninsured because almost 40% of uninsured adults do not receive recommended medical screenings and 20% skip care for serious medical problems. Uninsured children are 70% less likely to receive medical care for common conditions such as ear infections, which could likely lead to more serious health problems and are 30% less likely to receive treatment for injuries. Both uninsured adults and children are less likely to receive preventative care such as a medical check-up, prostate exam for men or a mammogram and Pap smear for women (Wagner, 2007).

Delaying or not seeking treatment can also lead to a higher rate of serious illness and avoidable health problems. The fear of the cost of care delays decisions to obtain tests for potentially serious illness (Kaiser, 2000). The uninsured incur a higher rate of hospitalization for sick care avoided with appropriate preventative care such as pneumonia and uncontrolled diabetes. In addition, uninsured patients with conditions such as various cancers arrived for care with the late stages of disease by not seeking early detection, leading to a higher rate of death among the uninsured compared to those with insurance (p. 2).

While the trends toward sickness and disease tend to increase with the uninsured, so the data indicates that insurance coverage follows a pattern of family income, meaning the likelihood of coverage increases with higher family income (DeNavas-Walt, Proctor, & Smith, 2007). The rate of family insurance coverage in 2006 for families with household income equal to or less than $25,000, was 75.1% while those families with annual household income equal to or greater than $75,000 had a rate of health insurance coverage at 91.5%. As stated above, if insurance equates to better health and having insurance equates to higher family income, one may conclude that better health is equivalent with higher incomes. Seymour (2007) pierces this logic derived from the DeNavas-Walt, Proctor, & Lee (2006) report from the United States Census Bureau by showing that while 17 million people with incomes over $75,000 per year indicate insurance affordability but chose not to purchase insurance. These data demonstrate that while insurance coverage may be related to higher family incomes, purchases are not made based on income only and do not necessarily correlate insurance coverage to better health overall.

Demographics of the Uninsured

According to the United States Census Bureau figures, the number of people uninsured in 2007 was 45.7 million or 15.3% of the total United States population DeNavas-Walt et al., 2008). While the percentage of uninsured in the United States has increased by a couple of percentage points since 1987 (from 12.9% to 15.3%), the number of uninsured has increased by nearly 15 million people, a significant cause for social concern over 20 years (p. 61).

The breakdown by race and ethnicity in these figures explains which groups are vulnerable to uninsured health risks.

Table 1

2007 United States Proportion of Uninsured by Race/Ethnicity

Race/Ethnicity	Uninsured #	% to Population	% to Total
Non-Hispanic White	20,548	10.44%	45.01%
Black	7,372	19.52%	16.15%
Asian	2,234	16.84%	4.89%
Hispanic	**14,770**	**32.09%**	**32.35%**
All Other	733	13.91%	1.61%
Total	45,657		100.00%

Note. Numbers in thousands. Data obtained from United States Census Bureau data “People without Health Insurance Coverage by Selected Characteristics: 2006 and 2007” http://www.census.gov/hhes/www/hlthins/data/incpovhlth/2007/p60no235_table6.pdf.

Table 1 indicates that Non-Hispanic Whites make up the largest proportion of the uninsured in number and percentage to the total population. However, the Hispanic proportion of uninsured to the Hispanic population is anomalous to the other racial/ethnic categories. The figures show that Hispanics have the highest percentage of uninsured to the total ethnic population, in a range 33% to 60% higher than all other categories. Although Hispanics rank second to Non-Hispanic Whites in total population and in the number of uninsured people, as a percentage of its own ethnic population, Hispanics rank far higher in uninsured proportion than any other racial/ethnic group. Also noted is the uninsured rate for the very small populations of American Indians and Alaska Natives whose uninsured rates were not statistically different from the rate for Hispanics (DeNavas-Walt et al., 2008, p. 21).

The Hispanic Uninsured

According to the latest United States Census Bureau survey for 2007, Hispanics represent the largest minority group in the United States with 47 million people (DeNavas-Walt et al., 2008). In addition, the literature projects that Hispanics of all races will comprise 29% of the population over the next 40 years (Livingston, Minushkin, & Cohn, 2008). As noted above, Hispanics disproportionately rank highest in uninsured, over any other ethnic population. However, the Hispanic population have a 35% probability of being uninsured in contrast to the 17.5% probability for the general population (Smedley, Stith, & Nelson, 2008). The probability of uninsured Hispanics, twice as likely as the general population, is statistically anomalous and sociologically a concern for government since syllogistically, insurance equates to access and affordability for health maintenance and improvement.

The sociological concern intensifies with the high prevalence of diabetes among Hispanic Americans than other racial/ethnic groups. Hispanic adults, in comparison to the United States population as a whole, show a lower rate of chronic disease except for diabetes (Livingston et al., 2008). The disproportionate propensity to be uninsured creates a widespread health hazard with a chronic disease like diabetes. The uninsured tend to lack a primary care provider, delay, or defer medical treatment, and tend toward incremental medical treatment for illnesses in public facilities (Lambrew et al., 2005). Safety net facilities are by definition, last resorts. Public safety net emergency rooms are ill equipped and under-funded to provide the appropriate medical protocols for consistent treatment of the fundamental root causes and health improvements of chronic disease (Bovbjerg & Ullman, 2001; DeNavas-Walt et al., 2008; Davis et al., 2007; Heymann et al., 2009; Kaiser, 2007).

Yet, theories suggesting that health insurance provided for the uninsured in order to access providers outside the “last resort” safety net may indicate improvement in medical outcomes for the uninsured Hispanics. While socioeconomic factors play a well-known role in affordability for medical treatment and health insurance, other unique socio-cultural factors and economic tendencies may also challenge Hispanics (Livingston et al., 2008). Hispanics have higher rates of obesity, a lack of ESHI, and work at blue collar and service-oriented jobs, which are less likely to offer ESHI. Almost 90% of uninsured Hispanic families are working, yet less than half (43%) obtain health insurance through employment and less than a third (30%) work for an employer who provides ESHI. Hispanics also have lower participation rates in PSHI, even when qualified, with 45 percent of all Hispanic families with incomes lower than the federal poverty level not enrolled in PSHI (Livingston et al., 2008; Smedley et al., 2008, p. 87).

More than a fourth (27%) of the Hispanic uninsured does not have a usual health care provider. Forty-one percent (41%) of people who do not have a primary care provider say they are seldom sick. The contrast of the uninsured who state they are seldom sick or prefer self treatment to the 28% that cite the lack of health insurance or the prohibitive cost of health care suggests that the sociological and behavioral factors of Hispanics is equally, if not more important, to consider in providing health insurance to Hispanic uninsured adults. Therefore, improved medical outcomes may not be simply factor of providing health insurance to the uninsured.

Diabetes Management and the Uninsured

Diabetes mellitus (diabetes) is a chronic, incurable disease caused by the body's inability to produce insulin, a hormone necessary to convert sugar and carbohydrates into glucose, used by blood cells to produce energy for daily living (ADA, 2010g). Type 1 diabetes, originally known as juvenile diabetes, predominantly diagnosed in people less than 20 years of age, is less common than the millions diagnosed with Type 2 diabetes. While 7.8% of the United States total population in 2007 was afflicted with diabetes in all forms, statistical percentages for racial/ethnic minorities indicated higher rates of illness (ADA, 2010h). Almost 12% (11.8%) of Mexican Americans have Type 2 diabetes. Mexican Americans, therefore, possess the second highest rate of diabetes among racial/ethnic categories second only to Puerto Rican Hispanics with 12.6% and with non-Hispanic Blacks coming in a close third place with 11.8% (ADA, 2010e).

Overall, diabetes is the seventh leading cause of death in the United States while contributing to 84% of the deaths from heart disease and stroke among people aged 65 years of age and older (ADA, 2010e, p. 2). Other debilitating complications from diabetes include high blood pressure, blindness, kidney disease, and Neuropathy (nervous system disorders) (p. 3). Although diabetes care is largely self-managed, unmanaged, and managed care costs billions. In the latest cost analysis in 2007, the United States spent $116 billion in direct medical costs and an additional $58 billion in indirect costs for disability, work loss, and premature death (p. 3). In 2008, almost one in five hospitalizations occurred from patients with diabetes. There were 7.7 million hospital stays at a cost of $83 billion that included comorbid conditions (associated with diabetes) that included cardiovascular and pulmonary disease in 5 out of 10 hospital admissions (Fraze, Jiang, & Burgess, 2010). Other common comorbidities in patients include fluid and electrolyte disorders, deficiency anemia, renal failure, and obesity (p. 2)

Public health professionals target diabetes since it is generally controllable and self managed to prevent debilitating side effects. However, diabetes' projected growth in the US from the current 1 in 10 United States adults with Type 2 ranges from one in three to five by the year 2050 (CDC, 2010). This expected growth may occur due to self-management risk factors such as poor dietary habits and lack of physical activity as well as factors that may exceed an individual's control such as accessibility and affordability of a primary and preventive care provider (p. 1).

As stated earlier in the Literature Review, substantial evidence suggests that populations with long-term chronic conditions requiring continuous medical treatment that have health insurance, access medical care significantly more than those who do not (Davis et al., 2007; DeNavas-Walt, Proctor, & Smith, 2008; Heymann, Nunez, & Talavera, 2009; Kaiser, 2007). While self-management of diabetes includes lifestyle choices within the individual's control, medication adherence is also important for controlling the disease (Yu, Yu, & Nichol, 2010). Medication costs for the uninsured impact adherence and ultimately a quality medical outcome. Medication and physician affordability is known to be associated with insurance status (insured versus uninsured) (Dusheiko, Doran, Gravelle, Fullwood, & Roland, 2010; McAdam-Marx, Field, Metraux, Moelter, & Brixner, 2010). Therefore, management of diabetes and improved medical outcomes may be at-risk for the uninsured.

Solutions for the Uninsured

NHI is a questionable panacea for the health problems of the uninsured. In 100 years of government resistance to NHI, the issue of an additional entitlement and its costs and impact on national welfare is central to the question of whether the United States government should fund national universal health insurance for all its citizens (Wagner, 2007). Unable to rely on fully funded NHI, communities with high-uninsured populations resort to alternative solutions to address the health needs for those with disadvantaged access or affordability (Hernandez, Fornos, Mika, Urbansky, & Villarreal, 2009; Taylor, Cunningham, & McKenzie, 2006). Evidence presented in the literature suggests that other, less comprehensive solutions for health-related problems of the uninsured may surpass a national solution. Programs such as health safety net providers, community based health coverage solutions and Health Savings Accounts indicate progress toward addressing access and affordability for the disadvantaged low-income families.

Health Safety Nets

A Health Safety Net (HSN) offers free or reduced cost care from local providers such as community supported hospitals (disproportionately public hospitals) and academic medical centers (Bovbjerg & Ullman, 2001). HSN facilities include participating physicians in ambulatory clinics, public hospital based clinics, and federally qualified health centers (FQHC). These facilities may be government subsidized and fund uninsured medical care costs by cross subsidizing care from the reimbursement of commercially insured patients (p. 248). Additional Medicare and Medicaid subsidies and local assistance programs also assist in the funding of care. The internal cross subsidies, locally taxing hospital districts and medical provider write-offs shoulder the predominant amount of care for the indigent uninsured. Families reporting no insurance at least one month prior to hospitalization paid only 15% of their medical costs. HSN medical provider write-offs covered the remaining 85% of the charges for their care (Luft, 2007). Despite the financial challenges, community health centers, FQHCs and other HSN programs have reduced expensive alternatives such as public hospital emergency rooms and ethnic/racial/financial health disparities for all acute care episodes (Rust, Baltrus, Ye, Daniels, Quarshie, Boumbulian, & Strothers, 2009; Shields, McGinn-Shapiro, & Fronstin, 2008).

Bovbjerg and Ullman (2001), citing the historic national unwillingness to fund NHI, discussed federal policy encouraging states and localities to fund health initiatives. The authors found local government and private funding capacity to be fiscally unsustainable to address all the health care needs of the uninsured populations. Consequently, the combination of local fundraising with federal matching funds and a reorganization of public entities with collaborative agreements between resources mentioned above, Bovbjerg and Ullman (2001) argued that providing health and sick care for the uninsured did not require full federal funding for universal coverage. Yet, Hall (2006) pointed to the two "crowd-out" objections to HSN expansion in relation to NHI. First, there is the economic crowd-out that diverts financial resources of governments to HSN rather than coverage with insurance and second, the political crowd-out that diverts legislative capital from developing a national health insurance network to designing, subsidizing, and supporting HSN networks (p. 10). As earlier acknowledged, these examples of political and economic crowd-out provide further evidence of NHI as the national core goal for medical affordability and accessibility.

Moreover, Wilensky and Roby (2005) contended that health centers, as an intricate part of HSN, provide care that is locally sensitive to the needs of the medically underserved, both educationally and financially vulnerable groups which remains vital to the national health care network. Both Bovbjerg and Ullman (2001) and Wilensky and Roby (2005) contended that NHI, as an instrument of accessibility to medical care, does not provide the factors of health center care that contributes to improved health outcomes. Elements that lead toward improved health outcomes in FQHCs are language competency, transportation, community outreach, and programs designed to promote accessibility and affordability for both the insured and uninsured. The literature suggests that FQHC expansion and suitable funding for disadvantaged groups can be a significant step toward ameliorating deleterious effects of the uninsured but not as a comprehensive solution without PSHI (Wagner, 2007).

Like Wilensky and Roby (2005), Bovbjerg and Ullman (2001) agreed that those with insurance use medical care more frequently than the uninsured and achieve better health outcomes in terms of reduced mortality. Thus, the authors indicate that PSHI matters for medical care accessibility and PSHI contributes toward subsidizing care in HSN. Whereas the HSN including FQHC is not a single, comprehensive alternative to universal coverage, the HSN is, in combination with the assorted federal financial assistance a viable and existing alternative while local government and agencies develop insurance coverage solutions for the most affected groups. A health insurance coverage expansion, therefore in combination with the fiscal strengthening of the HSN appears as a comprehensive alternative to NHI alone (Wilensky & Roby, 2005).

Community-Based Insurance Coverage Solutions

Initially and inevitably, the uninsured's first source of care is the local HSN resource. HSN direct access provides 63% of the care to the uninsured while community clinics provide another 19% of care (Blewett, Ziegenfuss, & Davern, 2008). Medical care in the local HSN raises increased public funding concerns in the community as the population of the uninsured rises, which in turn, creates the determination of local government to find solutions (Taylor, Cunningham, & McKenzie, 2006). Community strategies for addressing local financial concerns and care for the uninsured include what Livingston et al. (2006) labeled "brokered access," or categorically: a local safety net MCO, donated care models, discounted care models, and limited-benefit coverage (p. 11). The literature consistently posits that the primary vehicle for health care accessibility is health insurance. Without health insurance, the community health condition deteriorates and with health insurance, health outcomes improve (Blewett et al., 2008; Hernandez, Fornos, Mika, Urbansky, & Villarreal, 2009).

Local Access to Care Programs

Blewett et al. (2008) reviewed 47 local access to care programs (LACP) that provides brokered access in donated or discounted care models. These programs are not insurance programs but may include enrollment and offer free or discounted care. Non-insurance access programs do not generally involve reporting of services provided and the cost of care. LACP characteristics include the following:

1. Enrollment of membership.
2. Low income eligibility.
3. Defined benefits.
4. Limited provider network.
5. May include a contractual or understood agreement between LACP agency with local providers of care.
6. Non-profit, local agency administration of program.

In their study of LACP organizations, Blewett et al. (2008) concluded that LACPs contribute marginally to public sponsored uninsured care. Organization focus on preventive and primary care without a dependable source of specialist, catastrophic or institutional care places LACPs as supplemental, leaving HSN MCO insurance products as the core product for accessibility and affordability (p. 475).

Two common conditions in the type of local HSN managed care development are the distribution of the uninsured and the sustainability of public funding (Taylor et al., 2006; Shields et al., 2008). Generally, a HSN MCO exists in low populations of the uninsured with strong and secure funding sources from public local and state funding streams. LACP models along with limited-benefit coverage, on the other hand, occurred in areas with higher concentrations of uninsured and less secure funding streams (Taylor et al., 2006, p. w178). The consistent thread that weaves throughout the common conditions is the funding and expense. HSN MCOs are high cost, high risk while LACPs are less cost and lower risk. Therefore, HSN MCOs tend to prevail in low populations of uninsured with strong funding sources and LACPs in high populations of uninsured with less reliable funding sources in order to control cost and risk against the pool of public funding. However, the literature revealed the existence of HSN MCOs in communities with high uninsured and strong funding sources, a hybrid of the most common conditions (Bindman, Chen, Fraser, Yee,, & Ofman, 2009; Brown, & Stevens, 2006; Hernandez, Fornos, Mika, Urbansky, & Villarreal, 2009; Silversmith, 2010; Taylor et al., 2006).

Health Safety Net Managed Care Organizations

Taylor et al. (2006) found HSN MCO models in Boston, Massachusetts, Indianapolis, Indiana, and Lansing, Michigan. The authors found these programs with strong funding sources, local and state political support and established internal infrastructure well established to provide long-term care to their respective uninsured communities. Over periods of strong budget pressure and fiscal doubt, the political support and community pressure contributed viable reinforcement to maintaining budgets on these HSN MCOs. Notwithstanding the political and fiscal strength, these communities retain a smaller percentage of uninsured population than the national average with Boston at 6%, Indianapolis at 12%, and Lansing at 7%. The common conditions of low uninsured population and strong funding streams are congruent in these communities (Taylor et al., 2006).

The HSN MCO model studied by Brown and Stevens (2006) referred to the hybrid MCO, CarePartners in Portland, ME, where the uninsured enrolled if they did not qualify for Medicaid or SCHIP programs. Providers, unpaid for their services, subscribed to the program by dedicating a portion of their scheduled appointments. Primary care physicians were more likely to subscribe since CarePartners provided diagnostic services and medications that made compliance with a care plan more reliable. Specialist physicians were less likely to subscribe, with sluggish engagement due to their rural dispersion. The goal of CarePartners as the HSN MCO was to move patients with care needs from episodic direct access in HSN facilities to primary and preventive care in provider clinics (p. w155). Patients were slow to enroll because they felt that episodic care in the direct access environment was satisfactory to self-perceived health status. The question remaining and unanswered: Was direct access too easy and convenient or was CarePartners too difficult and expensive?

The Insurance Safety Net in the State of Minnesota

The HSN MCO programs in Minnesota, however, appear designed to financially and medically correspond to specific populations' economic and health conditions (Silversmith, 2010). By limiting direct access through an insurance safety net (ISN), the Minnesota program attempted to manage health care and cost through managed care insurance. There are four Minnesota ISN programs. First, there is Minnesota's version of the state Medicaid program called Medical Assistance (p. 40). State and federal matching funds (50% each) finance Medical Assistance. Generally eligible people are low-income, the aged, the disabled, and pregnant women.

The second program is MinnesotaCare for families with children whose household income is at or below 275% of federal poverty guidelines (FPG) and single adults and couples whose household income is at or below 250% of FPG. MinnesotaCare requires premiums from eligible participants depending on family size and income. These premiums range from $4 to $24 per month. The state funds 100% of MinnesotaCare but contributes all the funds to a designated "Health Care Access Fund" (HCAF) including the 2% state tax on medical providers' gross income (Livingston, 2010, p. 42). The tax provided 65% of total funding for MinnesotaCare. Beginning in 1995, federal matching funds provided 29% of funding for the HCAF while a 1% premium tax and premiums paid by MinnesotaCare enrollees contributed the remaining balance to the fund.

The third ISN program in Minnesota is the General Assistance Medical Care (GAMC) program which covers low-income adults without children and who do not qualify for Medical Assistance or MinnesotaCare. Over 70% of the enrollees in GAMC, have mental or substance abuse disorders (Livingston, 2010, p. 42). GAMC enrollees have higher health risks than most other ISN program enrollees, costing the State of Minnesota, more than twice the amount per enrollee than the other state programs. Minnesota government attempted to disband GAMC since 2009 but found serious apprehension among patients, health care advocates, and providers that expensive direct access to HSN facilities would result. While the state forestalled permanent dissolution of GAMC, the legislature continues to debate its existence by finding other ways to join GAMC enrollees into MinnesotaCare.

The fourth program in Minnesota is the Minnesota Comprehensive Health Association (MCHA) which is a private health plan contracted with the state to provide high risk coverage for those who are unable to obtain insurance due to pre-existing conditions or diagnosed with "45 presumptive conditions" (Livingston, 2010, p. 43). The state does not directly fund this program although various contributions made from the HACP and other state insurance fund pools supplemented the plan at various times. Funding for MCHA comes from premiums paid by the enrollees (at 101% - 125% of market value due to higher risk) and a tax on organizations that sell individual and group health insurance policies in the state. Interestingly, self-insurance plans cover 40% of Minnesotans. These plans are federally exempt from taxation by the state for MCHA; however, fully insured plans cover 27% of Minnesotans. The insurers of these plans pay 100% of the MCHA tax and ironically cause the coverage exclusion (pre-existing and presumptive conditions) that the state must cover through MCHA.

Consequently, with four ISN programs that cover 11% of Minnesotans and provides the leading reason for Minnesota to be ranked as the highest state in the country for the most adults under age 65 with insurance, can PSHI be correlated to high quality medical outcomes? In general, Minnesota ranks 12th in the nation for quality and performance in health care which includes a top ranking for one of the states with the least uninsured (Cantor, Belloff, Schoen, How, & McCarthy, 2007). While the literature indicates that there is some evidence to suggest that insurance provides access and access contributes to care, there is some evidence to indicate that possession of insurance promotes risk coverage to mitigate the cost of illness. The coverage for risk is the fundamental reason for insurance. In this respect, health insurance fulfills its original purpose but evidence suggests that improvement in health status occurs upon the manifestation of disease.

PSHI for the Uninsured

Two PSHI plans in the literature specifically target previously low income and working uninsured. Carelink in San Antonio (Bexar County), TX, and the San Francisco Health Plan (SFHP) in California have several similarities. The most prominent similarity is the program goal of PSHI managed care type insurance coverage for the indigent, uninsured, and working poor for improved access and more efficient health spending for improved health outcomes (Bindman et al., 2009; Hernandez et al., 2009).

Carelink is a financial assistance program created and funded by property tax revenues and patient premiums that works like a managed care organization to help subsidize the cost of healthcare services for local eligible residents (Hernandez et al., 2009). Carelink objectives follow:

1. Promote patient financial responsibility for their health care and program viability.
2. Provide a medical home for participants.
3. Make evidence-based health care decisions.
4. Pay providers on fee-for-service.
5. Assure patients receive medication.
6. Develop community partnerships providers, caregivers, and social service agencies (p. 70).

Ultimately, Carelink design promotes reduced cost and improved health outcomes. According to Hernandez et al. (2009), in a Texas county of 1.6 million inhabitants where 20 – 26 percent was uninsured in 1997, Carelink is not limited in managed care services. Offering enrollees' preventive care, primary care, specialty physician services, family planning, inpatient, and outpatient hospital services, health education, mental health services, emergency department, and pharmaceutical services, Carelink provides a broad array of services comparable to ESHI.

As a result, over 9 years of service, Carelink has been able to reduce costs:

1. Diverting patients from the emergency room (ER) to primary care.
2. Patients pay an affordable premium share and co-payments based on income.

3. Patients participate in pharmacy programs at significantly reduced or no cost.
4. Consistently see the same primary and preventive care provider in a medical home.
5. Reduce the need for specialty care through evidence-based medical decision making.
6. Assign case managers and nurse practitioners for patients with chronic diseases that do not require complex care.
7. Successfully negotiate fee-for-service reimbursement to providers for patients where there was none prior to Carelink (Hernandez et al., 2009, p. 81).

In terms of improved health outcomes, the Carelink program measured improved health through lower ER visits signifying less acute adverse health events, increased primary care visits from the establishment of patient medical homes, provider availability, and improved diagnostic test results as a product of improved access to health education and preventive care (Hernandez et al., 2009, p. 81-82). In terms of chronic disease, Carelink focused on primary care providing higher quality chronic disease management like diabetes to reduce hospital emergency room visits. Studies like Dusheiko, Doran, Gravelle, Fullwood, and Roland (2010) have shown primary care practices with quality programs for diabetes care reduced emergency admissions for short-term complications associated with the disease. These results suggest that provision of HSN MCO for the previously uninsured results in improved health outcomes for a predominantly Hispanic low-income population.

However, Hernandez et al. (2009) did not study the health status or practices of the participants prior to enrollment in Carelink. The authors simply measured health status from time of enrollment and rates of ER and primary care visits after plan implementation at the county and health science center medical facilities. In addition, the study neglected to explain why only 13% of the uninsured population enrolled in Carelink and if this correlates with the cost savings for county indigent and uninsured care.

Like Carelink, SFHP developed from the local and state health district's concern for the uninsured population health and access (Bindman et al., 2009). SFHP originally provided the coverage for the area's Medicaid Managed Care plan but later expanded to encompass the uninsured working families called the Healthy Workers (HW) program. Like Medicaid, the federal government funds 40% of the Healthy Workers program but unlike Medicaid, the other 60% is not funded by the state Medicaid program but is funded by the San Francisco Department of Public Health. The goal of the program is to provide health insurance to the previously uninsured and help support the community HSN. HW intended to increase access while reducing the costs of care through three main vehicles:

1. "E-referrals", a computer application used by primary care providers to authorize referrals to a specialty care provider (which increases care expense).

2. The use of health care teams to include nurse practitioners for aspects of chronic care that does not require complex medical decision making.
3. A capitation model for provider reimbursement (Bindman et al., 2009, p. 748).

While capitation reimbursement pays providers a set amount of money according to the number of members enrolled to a provider's panel, this model does not pay for services performed like fee-for-service (Kongstvedt, 2004).

The reimbursement models differ in HW and Carelink, yet most of the program goals and vehicles to achieve those goals are very similar. Carelink results and medical care are more comprehensive than HW due to Carelink's financial investment and cost sharing with the uninsured who are working. While Carelink also invested time, money, and effort in establishing medical homes for patients with primary care, preventive care, and health education, HW did not, resulting in compromised health from HW patients receiving medical care from multiple providers rather than an assigned medical home (Bindman et al., 2009, p. 750). Bindman et al. (2009) measured improved medical outcomes and cost savings primarily on reduced specialty physician referral from the use of the E-Referral system but did not quantify health status outcomes of HW participants to any reasonable extent. Yet, SFHP's HW plan demonstrates how established PSHI from local, state, and federal support, in any combination, can form the foundation with expansion to design health insurance plans to fit local medical needs of the uninsured. In addition, the literature suggests with these two plans as models, that the most successful local PSHI designs involve many forms of patient financial and medical decision-making participation.

While local PSHI health plans for the uninsured appear as promising solutions for the uninsured to receive affordable access and improved health outcomes, other non-insurance tools appended to health plans enhance patient responsibility for cost. Patient cost share, as demonstrated in the Carelink model, can supplement public funding for PSHI and personally involve previously uninsured patients in the course of insured medical care (Lave, Men, Day, Wang & Zhang, 2010). One of those tools in national widespread and growing use is Health Savings Accounts.

Health Savings Accounts

A health savings account (HSA) is a federally tax exempt saving and investment account that assists participants in covering patient financial share portions associated with high deductible health plans (HDHP) (Lave et al., 2010; Shiver & Ponton, 2005; Wagner, 2006). Insurers developed HDHPs in response to growing premiums for health insurance coverage. In order to stem the growth of premium costs, insurers increased deductibles to as high as $5,000 per year as well as co-payments to reduce the indemnity borne by the insurer. For those enrollees with HDHP, the insurance allays risk for catastrophic events while lowering premium costs for those with a healthy self-perceived status. The federal government allows HSAs to grow investment and saving for individuals who purchase ESHI that qualify as HDHPs and when they are linked as a package by an employer, they are known as consumer directed health care (CDHC) initiatives (Lave et al., 2010; Wagner, 2006).

HSAs (one component of CDHC linked to HDHP) are set up in a similar way to retirement accounts such as an Individual Retirement Account (IRA) where any person less than age 70.5 years may set money aside up to a maximum annual level of tax exemption (Bloche, 2007; Dash, 2006; Lave et al., 2010). The HSA account may be set up at a bank or investment firm and the savings invested in instruments that will yield additional income from higher stock value, interest income, or capital gains. Employers offering HSAs may use them as an employee benefit where the employer may offer matching contributions although this is not federally required.

Shiver and Ponton (2005) contended that as employers and investment firms become more involved and competition begins for the consumer to place their health care dollars into HSAs rather than insurance premiums, there is less need for federal government direct funding of insurance coverage for all the uninsured. In fact, the growth in employers offering CDHC and the number of employees choosing CDHC over higher premium PPO health plans with more provider choice and less patient cost share has nearly doubled between 2006 and 2009 (Lave et al., 2010)

Notwithstanding the potential for risk sharing among the previously uninsured, Minicozzi (2006) reported from an early definitive study on the impact of HSAs. The author studied data from the United States Treasury Department between 1996 (when Congress created the pilot project initiating tax preferred Medical Savings Accounts) and 2001. The study results showed that there were less than a quarter million units of HSAs and of those only 25% reported being previously uninsured (p. 256). Furthermore, Minicozzi (2006) enumerates three very important observations from the study:

1. Self-employed holders of MSA accounts were disproportionately high income.
2. The middle-aged were more likely than younger aged families to purchase MSAs, which is antithetical to the HSA theories proposed.
3. There may be an attractive "savings component" to MSAs that requires further study in the long term "before reaching a conclusion on HSAs' potential to build up sufficient balances to fund health expenses in retirement" (p. 267).

Bloche (2007) suggested additional definitive research into the applicability of CDHC and the necessity for patient medial decision making for the financially disadvantaged uninsured. In addition, the availability of lower cost health insurance associated with CDHC could prompt a modest reduction in the ranks of the uninsured as more healthy and wealthy Americans acquire HDHPs. On the other hand, as healthier enrollees drop comprehensive coverage options premiums may rise for those who are less healthy or have chronic conditions, known as risk segmentation, prompting some employees to drop coverage and perhaps add to the ranks of the uninsured (Lave et al., 2010). In fact, Lave et al. (2010)'s recent study of nine western Pennsylvania employer plans in 2006 and 2007, where given the choice of moving to CDHC from their traditional indemnity plans, healthier individuals and families chose CDHC. However, the authors also found that the proportion of healthy insured in both CDHC and PPO remained well-balanced indicating a lack of significant risk segmentation (p. 11).

From an affordability perspective, Bloche (2007) points out that HSAs are less affordable to the low-income uninsured workers since the tax advantages for those with lower marginal tax rates makes HSAs unattractive. The paradox of motivating affordability through tax incentives for the low income uninsured who can leverage their income to tax liability the least, emphasizes the possible inapplicability of CDHC as a solution for the uninsured. These conclusions indicate that HSAs and CDHC may be a weak alternative to other solutions for the uninsured and underinsured. However, HSA could be a benefit in cost sharing for PSHI to assist consumers with affordability in accessing health care providers with HSN MCO high deductible and co-payment plans.

Theoretical Foundations

The literature's chief theoretical foundations that health insurance contributes toward individual accessibility and this leads to improved health outcomes, relies upon four representative concepts of health management and insurance:

1. Insurance access theory (Holahan, & Cook, 2005), as applied by Ross, Bradley and Busch (2006) indicating that health insurance coverage plays a critical role in medical service accessibility.
2. Access, equity, and health outcome theory (Schoen et al., 2006) posits links between health outcomes, low health disparity, and insurance accessibility.
3. Health affordability theory (Collins et al., 2004) which finds a widely held belief among Americans that health care financing should be a shared responsibility of the individual, the employer, and the government.
4. Financial and resource burden theory (Taylor, Cunningham, & McKenzie, 2006) purporting that privately sponsored community efforts can relieve a significant financial burden from the community safety nets and public financing.

Insurance Access Theory

Using March supplements to the United States Census Bureau's Current Population Surveys (CPS) between 2001 and 2005, Holahan and Cook (2005) found a significantly increasing change in ESHI coverage chiefly among Whites. Using secondary data from quantitative survey research such as CPS has drawbacks such as getting a full sense of data meaning in the context of socio-cultural settings (Babbie, 2010). Indeed, Holahan and Cook (2005) discuss the limitations of the CPS survey in terms of how long the respondent was uninsured (p. w5-499). One of the limitations of secondary analysis of general population survey data is that the information is good for the moment the respondent answers the question and may not reflect an entire year. The authors state that the United States Census Bureau has qualified this issue as a "point-in-time estimate" (p. w5-499). This analysis limitation suggests that the uninsured may overstate as an annual count without an estimate of those covered partially through the year. However, as the authors state, CPS provides the most consistent measures of health insurance coverage changes from year-to-year due to very little change in the variables and survey choices (Holahan & Cook, 2005).

Holahan and Cook (2005) found that the rates of the uninsured increased together with employment changes and declines in real median income (pp. w5-498). In addition, although Whites had the greatest degree of uninsured increase, minority uninsured remained at rates exceeding Whites with 13.2% for Blacks, 34.3% for Hispanics, and 18.8% for all others (p. w5-506). These uninsured race/ethnicity rates are consistent with Table 1 above measured 3 years after this study indicating that racial/ethnic uninsured rates remain unchanged. This study also indicated the very high proportion of Hispanic uninsured leading to the health inaccessibility theory (Livingston, Minushkin, & Cohn, 2008) that 25% of United States Hispanics do not seek primary and preventive care controlling for factors of income, need, health status, and employment.

Another significant finding of the study indicated that while the overall uninsured population grew, child populations of uninsured significantly decreased due to the growth of the federal PSHI programs State Children's Health Insurance Program (SCHIP) and Medicaid expansions for child coverage in the 1990s (Holahan , & Cook, 2005, p. w5-507). Therefore, insurance access theory holds that a combination of tax credits and PSHI expansions, as enumerated and described above, comprise the most viable solutions for the reduction of uninsured populations.

While Holahan and Cook (2005) found that individuals making less than 200% of the federal poverty limit (FPL) made up over two thirds of the uninsured population, Ross et al. (2006) studied the significance of family income levels to receiving health care preventive services with and without insurance. The authors performed a cross sectional and bivariate analysis from data drawn from the 2002 Behavioral Risk Factor Surveillance System to study how higher income reduces the effects of lack of insurance in obtaining health services in cancer prevention, cardiovascular risk reduction, and diabetes management that contribute toward better health outcomes (p. 2027). Ross et al. (2006) concluded that the wealthy uninsured delayed medical treatment and avoided preventive care procedures consistent with low-income families. As a result, congruent with Holahan and Cook (2005), Ross et al. (2006) contended that expansion of insurance eligibility for all the uninsured, regardless of income, increases accessibility and leads to improved health outcomes.

Health Inaccessibility Theory

The access, equity, and health outcome theory holds that, unlike other developed countries with national PSHI, rewards for preventive care outcomes, quality measures, and payment for treatment of chronic disease and primary care, the United States spends more per capita but achieves less in terms of improved health outcomes (Schoen et al., 2006). Using a representative sample of primary care physicians in seven countries and using a quantitative four-page interview survey designed by the Commonwealth Fund and Harris Interactive the authors correlated the relationship of managing patient care with payment incentives to improve the quality of care (p. w557).

Schoen et al. (2006) found that health outcomes can improve along with affordability in the United States by national action on the following:

1. Emphasis on preventive and primary care through national PSHI standards of care.
2. Incentivize physicians by payments for care that results in improved or healthy outcomes.
3. Establishment of patient medical homes.
4. Expanded use of electonic medical records in a health information exchange (p. w570).

In this four-page questionaire survey of representative samples of randomly selected primary care physicians in Australia, Canada, Germany, the Netherlands, New

Zealand, United Kingdom, and the United States, the theory is tested outside of cultural and socio-economic characteristics to measure effects of health outcomes with managed care plans, PSHI or private. The literature reflects this theory as a solution for the deleterious effects from the uninsured after provision of health insurance access (Bindman et al., 2009; Blewett et al., 2008; Brown & Stevens, 2006; Hernandez et al., 2009; Silversmith, 2010; Taylor et al., 2006).

Health Affordability Theory

The health affordability theory stems from various studies showing a large majority of popular United States support for shared finance of medical care costs with health insurance (Collins et al., 2004). The quantitative methodology utilized to inform the study findings utilized a 25 minute telephone questionaire of a nationally representative sample of 4,052 adults over 19 years old and living in the United States (p. 33). The survey received a 50 percent response in accordance with standards from the American Association for Public Opinion Research.

Unprecedented medical cost increases in 2002 and 2003 along with higher insurance premiums, higher patient cost-share responsibilities, and United States employers' reduction of ESHI benefits spurred public interest into health care affordability. Collins et al. (2004) presented in the Commonwealth Fund Biennial Health Insurance Survey that the American public supported health care and health insurance reform that would make health insurance more affordable. The study further reflected popular support for redirecting federal tax cuts for health insurance to help pay for government sponsorship of a portion of providing health insurance to all citizens. Collins et al. (2004) found that health insurance should be fair and equitable through a minimum standard of coverage whether or not employers are required to provide health insurance. The authors concluded that the rising costs of health insurance and the rising risk of illness caused economic uncertainty leading to poor health and financial insecurity (p. 11).

Financial and Resource Burden Theory

Taylor, Cunningham, and McKenzie (2006) with their financial and resource burden theory found that increasing numbers of uninsured strains local safety nets, especially emergency rooms with a lack of continuous and long-term care for those disease afflicted uninsured members of the community (Taylor et al., 2006). The authors contend that national health insurance reform efforts had not produced solutions that directed health care resources to communities afflicted with specific long-term chronic disease that were expensive to treat as illnesses and are not medically controlled. The authors used the managed care safety net as the strongest local solution for PSHI where redirected tax dollars to PSHI and providers are enrolled and reimbursed closer to affordable Medicare or Medicaid standards (p. w174).

The study data and methodology used in the financial resource and burden theory derived from the Community Tracking Study (CTS) was conducted biennially by the Center for Studying Health System Change every 2 years (p. w174). The study also included over 150 interviews with health care respondents including health care program administrators and providers, safety net hospital executives, health systems, and local and state government representatives. Taylor, Cunningham, and McKenzie (2006) concluded that there were four general types of managed care safety net programs or PSHI: managed care safety net programs (such as those mentioned above in Boston, MA.; Indianapolis, IA.; Lansing, MI.; San Francisco, CA; Minneapolis, MN.; and San Antonio, TX), donated care models, discounted care models, and limited-benefit coverage.

Of all the programs listed, the financial and resource burden theory pointed out the most sustainable solutions for the long term are the PSHI managed care safety net programs (Taylor, Cunningham, & McKenzie, 2006, p. w181). The subsequent works of Bindman et al. (2009), Brown and Stevens (2006), Hernandez et al. (2009), Shields et al. (2008), and Silversmith (2010) provides supporting strength for the financial and resource burden theory.

Predominant Methodology Supporting Theoretical Foundations

The four theoretical foundations for this study and nearly all the literature that informs these foundations utilize quantitative methodologies. Survey instruments, both primary and secondary, predominate in the studies and investigations in the last 5 years. Babbie (2010), Katzer, Cook, and Crouch (1998), McNabb (2008), and Trochim and Donnelly (2007) address the types of quantitative design that result in significantly strong, correlative results. In studies measuring the effects dependent variables upon independent variables such as the relationship between the expense of insurance on those with lower income and effects of accessibility on those without health insurance, the prevailing research methodology was quantitative design.

The literature quantifying the number of uninsured, helping to define the national extent of the problem, used secondary analysis of data gathered from United States

Census Bureau surveys such as DeNavas-Walt, Proctor, and Smith (2008), or Taylor, Cunningham, and McKenzie (2006). Other literature extensively conducted primary survey analysis through telephone, in-person and mail surveys to examine the health disadvantages of the uninsured such as Collins et al. (2004) and Schoen et al. (2006). The literature that addressed the affects of PSHI on local communities used quantitative, quasi-experimental statistical reviews to analyze results (Bindman, Chen, Fraser, Yee, & Ofman, 2009; Brown & Stevens, 2006; Hernandez, Fornos, Mika, Urbansky, & Villarreal, 2009; Silversmith, 2010; Taylor et al., 2006). These quantitative results were derived from analysis of data in a format resembling pretest/posttest designs where types of visits were quantified prior to and after the introduction and enrollment of persons in the PSHI (Babbie, 2010). Consequently, as discussed in Chapter 3, the use of a quantitative, quasi-experimental One Group Pretest Posttest Design to determine the extent that health insurance affects health outcomes, appears consistent with the methodological models that prevails in the literature.

Synthesis of Theory

All theories described above relate to the provision of health care through health insurance coverage as opposed to government employment of health care providers, as the most effective means of delivery. While the costs of care weave a cautionary thread throughout the recommendations for public funding, the menu of services provided by local versus national PSHI appear designed to address the most common and debilitating diseases that pose the most egregious and attenuating effects upon the productivity of local communities. Medical disability detracts individual working potential, which calls for the need of government to extend the safety net from income support to health care.

In addition, in all theory, the PSHI formula includes more than a federal government, single source financing. Current theory consistently provides for a 3-way partnership of individual, employer, and federal/state support to provide insurance in many forms allowing for consumer choice based upon the individual's medical risk factors such as the chronic disease of diabetes. Funding for this coverage theoretically derives from a combination of individual, employer, and government support and depends upon the individual's risk factors and ability to provide for their own insurance cost support. The quintessential American principle of equal access and opportunity is pervasive in the theoretical struggle to provide universal health insurance, alternatively personal yet necessary to attain individual potential. Therefore, the theories described above, representative of the health care equal access and opportunity principle, tests the practicality of social exposure to provision cost; no small challenge in environments of economic fluctuations and government struggles to mandate insurance coverage.

Insurance access theory (Holahan , & Cook, 2005), as applied by Ross, Bradley, and Busch (2006) strongly indicated the need for insurance coverage to support the cost of care in the United States. The Access, equity, and health outcome theory (Schoen et al., 2006) addressed insurance benefit design with emphasis on disease prevention, primary care, provider incentives to promote health, and reward the use of technological innovation to maintain health and prevent disease. Localized examples of PSHI that partially or fully meet the theoretical standards of insurance access theory, and access, equity, and health outcome theory appear in the programs described above in the States of Massachusetts, Minnesota, and the cities of San Antonio, TX and San Francisco, CA

Health affordability theory (Collins et al., 2004) represents the pervasive national opinion, not without adversity, that health insurance and medical care, in general, are unaffordable for working Americans. Health insurance accessibility and affordability exists only to the extent that employers and insurance companies are mandated by law to provide it with a menu of commensurate services and shared finance among individuals, employers (when employed), and government. While costs are not government controlled since government has no national policy to employ health care providers (outside of the military, Bureau of Indian Affairs or Veterans Administration) or control the costs of instrumentation, supplies, and human resources, government can only control access to health insurance which is responsible for controlling costs through allocation and reward providers for health rather than the healing of disease.

Finally, financial and resource burden theory (Taylor, Cunningham & McKenzie, 2006) found that local PSHI and community programs such as Carelink in San Antonio, TX; the San Francisco Health Plans in California; and the Minnesota Comprehensive Health Association should provide the following cost reducing and health promotion benefits:

1. Promote patient financial responsibility.
2. Provide a medical home for participants.
3. Make evidence-based health care decisions.
4. Pay providers on fee-for-service to include health education.

5. Assure patients receive medication.
6. Develop community partnerships providers, caregivers, and social service agencies.
7. Divert patients from the emergency room (ER) to primary care.
8. Patients pay an affordable premium share and co-payments based on income.
9. Patients participate in pharmacy programs at significantly reduced or no cost.
10. Reduce the need for specialty care through evidence-based medical decision making.
11. Assign case managers and nurse practitioners for patients with chronic diseases that do not require complex care.

Theoretically, the literature indicated that local PSHI programs of health insurance requiring the participation of employers, individuals, and government to finance preventive and primary care for their employees and beneficiaries. These PSHIs employed medical evidence based programs of care for those with chronic, incurable disease to allow for equal access and affordability to maintain health and stamina for individual productivity and quality of life.

Overall and taken together, the literature recommended publicly sponsored solutions, financially shared among all participants, evidence based driven with results that ameliorate established chronic disease and prevent the manifestation of disease in the first place. The quantitative and qualitative methodology used in observations strongly suggests that expansion of PSHI will lead to improved health outcomes among its participants.

Summary and Transition

Historically, despite many attempts to socialize medicine or exert government control over health providers and care in the last 100 years, the initiatives and legislation failed. However, recently enacted national legislation such as The Patient Protection and Affordable Care Act of 2010 (PPACA) provides for landmark provisions partially listed below:

1. Priorities and measurement of quality health care.
2. Research on medical treatment outcomes on health.
3. Research on best practices for clinical protocols for safe and effective medical treatment.
4. The publication and dissemination for providers and consumers of the findings of research on quality outcomes, best practices, and safety.
5. Consumer disclosure of adverse medical events.
6. Patient medical homes.
7. Pay-for-performance initiatives that financially incentivize providers for positive and progressive medical outcomes (Furrow, 2010).

Irrespective of national health insurance reform efforts, local PSHI developed over the last 10 years or more particularly in the communities listed above.

The literature review established the following:

1. The percentage of the uninsured population is growing in the United States where it now resides at approximately 15%.

2. Uninsured individuals, regardless of income, receive less medical care and often delay treatment possibly leading to more serious chronic disease.
3. Uninsured individuals who become afflicted with disease or illness primarily seek treatment in public safety net emergency rooms where service cannot be denied by federal law.
4. Prevalent and representative theory on health care for the uninsured indicate that public funding for the provision of health insurance, particularly for low-income individuals, improves affordability and accessibility of the previously uninsured, and improves health outcomes.
5. Hispanics have been and continue to be the highest uninsured ethnic group in the United States.
6. Chronic diabetes, highly debilitating but medically controllable, is most prevalent among the United States Hispanic population and is growing.
7. Local managed care safety net PSHI such as CareLink in San Antonio, TX, indicates increased accessibility and affordability for a low income, predominantly Hispanic and previously uninsured population.
8. The studies of local managed care safety net PSHI indicates some indeterminate factors of improved health outcomes.

This study examined the relationship of health outcomes between continuous, PSHI subsidized outpatient care, and uninsured inpatient and emergency care utilization for a financially disadvantaged, Mexican American (MA) Hispanic population in El Paso, TX. The purpose of the study is to determine the strength of the relationship between the provision of PSHI in a previously uninsured, low-income, Mexican American population with chronic diabetes and improved health outcomes. Chapter 3, Methodology, defines specific data, location, process, and analytical method to determine factors and levels of strength in this relationship.

Chapter 3: Research Method

Introduction for Quantitative Study

As a conceptual framework, Chapter 1 ascertained that health insurance provision, as the prevailing solution for the detrimental health status potential of the uninsured, should contribute toward improvement of health outcomes. Chapter 2 established the historical background and current facts establishing that the uninsured delay or forego medical treatment due to issues of accessibility and affordability. Demonstration projects and established PSHI programs in several locations showed varying degrees of effectiveness in managing the health of enrolled participants and controlling costs to the community sponsoring these programs.

As noted in the Problem Statement, the Mexican American population along the Texas-Mexico border ranks nationally among the highest uninsured communities (Combs, 2009; Strayhorn, 2005). The uninsured obtain less and delayed medical care and more health-related problems leading to expensive chronic conditions, delegating publicly funded facilities with unfunded and possibly unpaid costs of care (DeNavas-Walt et al., 2008; Davis et al., 2007; Heymann et al., 2009; The Kaiser, 2007). Yet, prevailing theories to ameliorate uninsured health disparities do not indicate whether PSHI solutions for controlling the cost of care and managing enrollees for participation in medical treatment for chronic conditions, improve the health of the predominantly Mexican American enrolled population along the border (Boda, 2007; Livingston et al., 2008). Prior research identifies the need to scrutinize the role of preventive and primary care to lower costs, and improve individual and public health in highly uninsured communities (Ross et al., 2006).

Local government solutions include indigent managed care health plans (PSHI) that provide health maintenance, promotion, and disease prevention (Taylor et al., 2006). This study seeks to quantify participation and effectiveness of PSHI targeting Mexican-Americans to lower costs and improve individual health. This study will contribute to the body of knowledge related to public policy effectiveness designed to address problems of the uninsured through the promotion of preventive and primary care.

Predominant theories on providing public health insurance options for the uninsured including: insurance access theory (Holahan & Cook, 2005), health inaccessibility theory (Schoen et al., 2006), health affordability theory (Collins et al., 2004), and financial and resource burden theory (Taylor et al., 2006), among others discussed in Chapter 2, all utilized quantitative designs. This study used a quantitative unobtrusive, longitudinal, One Group Pretest-Posttest Design (OGPPD) (Babbie, 2010; Katzer, Cook, & Crouch, 1998; McNabb, 2008; Trochim & Donnelly, 2007). This relational study examined the utilization of health care services prior to and following the introduction of a PSHI to improve individual health of financially disadvantaged Mexican American (MA) in El Paso, TX.

The study determined the health outcome effects for the financially disadvantaged and uninsured population of Mexican Americans in El Paso. By using the OGPPD design, the study measured the strength of the relationship between the uninsured medical outcomes of episodic treatment for chronic disease with the PSHI managed care program's continuous outpatient treatment outcomes.

Research Questions

This study examined the relationship between continuous, PSHI subsidized outpatient care, and uninsured inpatient and emergency care utilization for a financially disadvantaged, Mexican American population in El Paso.

The research questions (RQ) for this study follow:

1. Do chronic diabetic patients experiencing acute care episodes of illness contingent with their chronic conditions have better health outcomes (reduction or elimination of the top ten comorbid conditions resulting in emergency room visits: hypertension, fluid, and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders (Fraze, Jiang, & Burgess, 2010) when enrolled in a PSHI MCO than those who are uninsured and rely on a public hospital emergency room for care?
2. To what extent is the health outcome of chronic diabetic patients improved (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and triglycerides with less frequency of comorbidity events) when enrolled in a PSHI MCO and receiving continuous clinical outpatient care in comparison to those enrollees who go to a public hospital emergency room for acute episodes of illness contingent with their chronic condition?

Research Design and Approach

The quantitative OGPPD method is the most common in health and social science studies such as pharmaceutical clinical trials or classroom teaching methods (Babbie, 2010; Katzer et al., 1998; McNabb, 2008; Trochim & Donnelly, 2007). The OGPPD takes one sample group for a study and measures for the presence of selected variables in a pretest before introduction of the treatment or dependent variable. After the introduction of the treatment, the posttest measures the effects of the treatment on the same group. This simple design presents problems for internal validity such as single-group threat, history, maturation, and experimenter expectation (Abrahams, n.d.; Trochim & Donnelly, 2007). Consequently, a common method to eliminate threats to internal validity is adding a control group. The control group, with comparable characteristics to the program group, does not receive the dependent variable or treatment.

Many clinical trials are non-equivalent groups design (NEGD), which includes a control group not receiving treatment and a group that does receive treatment. Thus, in testing a new medication in a clinical trial, a randomly selected group, in an experimental design, within a specific disease population, the control group receives a placebo and the program group receives the test medication while neither group’s participants knows if they are receiving the placebo or the test medication. Studies conducted on both groups determine the effects on the outcome for each group and between groups (Babbie, 2010; Katzer et al., 1998; McNabb, 2008; Trochim & Donnelly, 2007). Ideally, this experimental design removes most internal validity problems.

However, this study measured the correlative strength of the relationship between medical care received prior to and after receiving PSHI and subsequent health status improvement in a quasi-experimental time-series design (Babbie, 2010). Since the data for the variables described below derived from databases recording treatment that occurred in the past and the study observed statistical data over time after the treatment, the unobtrusive nature of the examination eliminated the need for a control group (Katzer et al., 1998; Trochim & Donnelly, 2007). Thus, the study used a quasi-experimental, unobtrusive, OGPPD time-series design.

Population and Sample

Demographically, El Paso (pop. 639,346), located in far West Texas on the border with Mexico and New Mexico, is predominantly Mexican American (82%) maintaining close cultural characteristics with neighboring Mexico. Over twenty six percent (26.3%) of the population is foreign born twice the percentage of the United States population, likely owing to El Paso's close proximity to the United States' border with Mexico. Educationally, 25.3% of the population has less than a high school education, 21.9% have a bachelor's degree or higher, and 52.8% with education limited to a high school diploma or GED. Median household income is $37,836 in 2010 and over 28.1% of the population uninsured, 47.9% with private health insurance, and 31.7% with public coverage since 2008 (ACS, 2010; Combs, 2009).

The uninsured of El Paso primarily receive care from the area's local safety net providers, including the El Paso County Hospital District (EPCHD) (operating as the University Medical Center of El Paso Hospital [UMCEP]), Texas Tech University Health

Sciences Center (TTUHSC) clinics, and non-profit federally qualified health center (FQHC) clinics Centro de Salud Familiar La Fe, Centro San Vicente Family Health Center, and the Project Vida Health Center, located throughout the 1,058 square miles of El Paso County (Combs, 2009; Standard & Poor's, 2009). Originally formed in 1915, the El Paso County General Hospital, UMCEP, as a wholly owned facility of the EPCHD, contains 327 licensed beds and is the only Level 1 Trauma Facility certified within 300 miles surrounding El Paso. EPCHD is run as a political subdivision of the State of Texas and is run by a "Board of Managers" who are appointed by the El Paso County Commissioners. The County Commissioners Court are authorized by the State of Texas to levy taxes and issue bonds on behalf of the EPCHD for the care of indigent patients for the County of El Paso (Standard & Poor's, 2009).

In 2000, EPCHD formed a captive insurance company called El Paso First Health Plans Incorporated (EP1). EP1 is a non-profit HMO incorporated to carry Medicaid Managed Care, SCHIP, and any other government funded or subsidized managed care plans in order to cost-effectively direct patients to the El Paso First Health Network of safety net providers as listed above (Texas Department of Insurance, 2010). Health Care Options (HCO) is the indigent care managed care organization formed by EP1 and integrated into the EPCHD charity programs in 2003, designed primary and preventive care programs for adult uninsured patients whose income fell at or below 100% of the Federal Poverty Level (FPL) (Begley, Agrawal, & Draper, 2005).

Since April 2004, HCO has built up enrolled and covered lives specifically from emergency room and hospital district physician clinic visits to UMCEP for those meeting the financial qualifications and appear to meet the chronic disease criteria that HCO is designed to address (El Paso First Health Plans, 2010). EP1 enrollment grew for all programs between 2003 and 2009 to 57,532 covered lives with hospital patient days of 22,673 and 4,251,353 medical encounters for both inpatient and outpatient provider visits (Texas Department of Insurance, 2010). As of November 2010, EP1 covered 82,262 lives, 12,597 of them in HCO (16%). Of these total covered lives in HCO, 1,343 active enrollees with a health insurance claim (form) (HICF), had a primary diagnosis of diabetes (11% of HCO enrollees). An additional 356 active HCO enrollees had a HICF with a non-primary diagnosis of diabetes, suggesting that the condition for which the patient was seen, related to diabetes (C. Smallwood, personal e-mail communication, November 24, 2010).

Diabetes is more common in the Upper Rio Grande Valley around El Paso, Texas than any other region in the State of Texas with 8.1% of the population in 2006 (Combs, 2009). The research population included low-income Mexican Americans in El Paso, Texas, who were once uninsured, visited the EPCHD hospital district emergency room (ER) or outpatient clinic with an adverse condition related to diabetes and were subsequently enrolled in the EPCHD indigent PSHI known as HCO with a health insurance claim with a primary diagnosis of diabetes (*n*=1699). As enumerated below, HCO agreed to provide the population from its HICF database, EPCHD IT agreed to provide the pre and posttest visits of this population for an eighteen month period prior to and post HCO enrollment and TTUHSC Health Information Technology (HIT - medical records) agreed to provide the pre and posttest visits to clinical physicians for an eighteen month period prior to and post HCO enrollment (C. Smallwood [HCO], personal e-mail communication, November 24, 2010; M. Watts EPCHD IT], personal communication, December 18, 2010; M. Romano [TTUHSC], personal communication, December 2, 2010). Each source of data agreed to provide the data after IRB approval and the execution of the appropriate Data Sharing Agreements. Non-Hispanic ethnicity and persons less that 19 years old were removed from the HCO database provided prior to transmission for EPCHD and TTUHSC matching. The study used the remaining population for testing.

Instrumentation and Materials

The EPCHD hospital social workers captured patient data where patients continuously utilized the hospital's emergency room for acute episodes related to chronic conditions (for one example, wound infections that do not heal due to a diabetic condition). The social worker facilitated the patients' applications for the PSHI and financially qualified the patients for participation. EPCHD data included demographic and personal information including patient name, address, city state zip, social security number, age, gender, diagnosis related groups (DRG), and medical treatment procedures.

The PSHI health claims data, derived from the billing of providers to the health plan for payment, contained participant data that included all demographic and personal information including age, gender, medical treatment procedures, and diagnosis information. When a HICF generates from a provider (hospital ER, ER physician, or clinical physician) to a PSHI, these elements record in the PSHI and provider databases. Health status records remain in the provider medical record but not in the HICF. For instance, while the vital medical statistics (blood pressure, weight, pulse, height) and laboratory measurements (glycohemoglobin, cholesterol, triglycerides) appear on a HICF for billing, results remain in the medical record only.

Databases

HICF, therefore, records data in three databases correlated to identify the treatment track in pretest and posttest of patients treated while uninsured subsequently enrolled in HCO and treated for care in various settings. The generation of a HICF signifies that treatment took place and medical tests and measurements performed for diabetes as a primary diagnosis. Patient identification and demographic information for the primary diabetes treatment tracking occurred from the following three databases:

1. EPCHD database: for pretest identification of uninsured patients with a primary diagnosis of diabetes or a secondary diagnosis of diabetes with a related adverse condition (hypertension, fluid and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders [Fraze, Jiang, & Burgess, 2010]).
2. EP1 HCO database: for posttest identification of previously uninsured patients treated in the EPCHD and TTUHSC service locations with a primary, secondary, or tertiary diagnosis of diabetes with a related adverse condition and subsequently enrolled in HCO and treated where a provider filed HICF with HCO.

3. TTUHSC medical records: for pre and posttest identification of treatment results, laboratory measurements, and number of clinical outpatient treatments.

Upon IRB approval (Walden and TTUHSC), HCO provided HICF and enrollment data securely and directly to EPCHD and TTUHSC as follows:

1. Patient name.
2. Patient address.
3. Patient city, state, and zip code.
4. Patient social security number.
5. Age.
6. Gender.
7. Race.
8. Ethnicity.
9. HCO enrollment date.
10. UMCEP assigned number (MRN).
11. TTUHSC assigned number (MRN).
12. Primary diagnosis.
13. Secondary diagnosis.
14. Tertiary diagnosis.
15. Visit type (inpatient, hospital outpatient/ER, and clinical outpatient).
16. Visit location (UMCEP or TTUHSC).
17. Procedure code (office visit, illness or injury treatment).

Populating the Databases

The HCO data file compiled by HCO personnel who normally have access to these records as part of their employment responsibilities. HCO confirmed the first compilation of the data file H_0 in accordance with the TTUHSC IRB Approval (Appendix E) and the EPCHD Data Sharing Agreement (Appendix G) on September 20, 2011. HCO transferred this file through encrypted FTP protocols to EPCHD UMCEP health information technology (HIT) office for matching on all service location treatment dates up to eighteen months prior to and after the HCO enrollment date (HCO data element #9). The HCO data #1- 6 and 10 matched with UMCEP patient data:

1. Age.
2. Gender.
3. Race.
4. Ethnicity.
5. HCO enrollment date.
6. UMCEP assigned number (MRN).
7. Primary diagnosis.
8. Secondary diagnosis.
9. Tertiary diagnosis.
10. Service location visit type.
11. Visit location.
12. Visit date.
13. Procedure code (office visit, illness, or injury treatment).

14. Laboratory claim service dates.

15. Laboratory tests ordered.

UMCEP HIT personnel, who normally have access to these records as part of their employment responsibilities, compiled the EPCHD data file (D_{1}). UMCEP HIT personnel transferred the D_1 data file through secure and encrypted FTP protocols to the researcher after redacting the PHI.

When HCO completed the first compilation of the D_0 data file to EPCHD, EPCHD transferred D_0 to a secure data file through encrypted FTP protocols to TTUHSC HIT office for matching on all clinical outpatient treatment dates up to eighteen months prior to and after the HCO enrollment date (HCO data element #5). The HCO data #1-13 matched with TTUHSC patient data. TTUHSC HIT medical records personnel, who normally have access to these records as part of their employment responsibilities, compiled the record into a secure and encrypted network EXCEL file. TTUHSC Medical Records personnel recorded patient visit data for vital signs and laboratory test results to compile the third (D_2) data file. Upon matching, TTUHSC HIT personnel filed the D_2 data file into an internal and secured directory arranged for the researcher after redacting all personal health information for each patient. The EPCHD HIT personnel coded the HCO data file with a randomized number to replace patient assigned numbers (for verification back to the identified file if needed), thus allowing for de-identified health status data for pretest and posttest comparison.

Coding the Databases

After patient matching of the D_0 data to pre and posttest visits, vital sign, and laboratory results from UMCEP and TTUHSC, the D_1 and D_2 files securely transferred to the researcher. While patients in the HCO database did not duplicate, the patients had more than one visit to UMCEP and TTUHSC both in the pre and post enrollment periods. The following coding methodology preserved the continuous time series design of the variables:

1. Patient name: Since the *N*=712 as the patient population, 712 numbers were available in a series beginning with 001 through 712. Patients in the HCO database compiled randomly, not in alphabetical or numerical order, so EPCHD assigned numbers randomly to each patient.
2. The analysis considered the health status of each patient at each visit, so while patients visited multiple times and appear duplicated, each visit date and visit number allowed verification of non-duplication for pre and post enrollment. Therefore, the visit dates coded as follows:

a. (-18) through (-1) -- eighteen months to one month prior to enrollment

b. (0) month of enrollment

c. (1) through (18) -- one to eighteen months post enrollment

3. The service location coded as follows:

a. 1 -- hospital non-ER

b. 2 -- non hospital clinical outpatient

c. 3 -- hospital emergency room

4. Health Status coded according to the Health Status Matrix (HSM) in Appendix D:

a. -5 = Very Poor Health

b. -4 = Poor Health

c. -3 = Moderately Poor Health

d. -2 = Somewhat Poor Health

e. -1 = Health at-risk - Poor

f. 0 = Health at- risk – Chronic Condition (diabetes)

g. +1 = Health at-risk – Good

h. +2 = Somewhat Good Health

i. +3 = Moderately Good Health

j. +4 = Good Health

k. +5 = Very Good Health

Variables

The two research questions in this study follow:

1. Do chronic diabetic patients experiencing acute care episodes of illness contingent with their chronic conditions have better health outcomes (reduction or elimination of the top ten comorbid conditions resulting in emergency room visits: hypertension, fluid and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders (Fraze, Jiang, & Burgess, 2010) when enrolled in a PSHI

MCO than those who are uninsured and rely on a public hospital emergency room for care?

2. To what extent is the health outcome of chronic diabetic patients improved (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and Triglycerides with less frequency of comorbidity events) when enrolled in a PSHI MCO and receiving continuous clinical outpatient care in comparison to those enrollees who go to a public hospital emergency room for acute episodes of illness contingent with their chronic condition?

Variables for Research Question 1

Research Question 1 (RQ1) asks to what extent a diabetic person's health outcomes improve or not with the provision of PSHI when the person was previously uninsured. The status of health outcome, in this regard, depends upon insurance status. Therefore, the dependent variable is insurance status and the independent variables include the patient's health status, age, gender, race, ethnicity, and income. Since the PSHI (HCO) enrolled families with no more than 100% of the federal poverty guidelines, the sample population already controls for income. The sample population included persons enrolled with a race/ethnicity component of "Hispanic" which controlled for race/ethnicity. Therefore, the variables for RQ1 identify as follows:

1. Dependent variable : Enrolled insurance status (U_t and E_t) where U_t equals the number of months not enrolled and E_t equals the number of months enrolled in the PSHI not exceeding 18 months prior to or post-enrollment.

2. Independent variable 1: Health status (see below and Appendix D for coded health status).
3. Independent variable 2: Age (see below for grouping).
4. Independent variable 3: Gender.
5. Independent variable 4: Time (18 months prior to enrollment and 18 months post-enrollment).

Risk Assessment Coding for Dependent Variable 1: Health Status

A diabetic person's health status varies quantitatively by the results measured from vital statistics, laboratory test results, and diagnosis at the time of the person's examination. The combination of examination data indicates a person's health status so that a provider can determine health outcomes from a course of treatment. If, for instance, a patient's health status does not improve, a physician may determine that a different course of treatment is necessary to take the risk of disease progression to a minimum. Therefore, the level of health status determination resulted from a weighted scoring of risk assessment as shown in Appendix D.

The medical history variable health status score was not available in any existing model. These scores were therefore determined using clinical decision rationale to purposively aid in the interpretation of meaningful results (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal interview communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal e-mail communication, January 6, 2011).

Risk Assessment Coding for Independent Variable 2: Age

The Framingham Heart Risk Study (FHRS) for 10-year risk for coronary heart disease (CHD) (Levy & Wolf, 2010) provided quantitative information on the risk factor of age and CHD. While common observation may suggest that disease risk naturally progresses with age, published risk assessment calculation provides quantified risk categories that progress with age. Consequently, the measurement of the relationship between insurance coverage and improved health must control for the increasing, natural but quantified risk graduation of diabetic factors with age. The FHRS model for age groupings are as follows:

1. 30 – 34 < 1%
2. 35 – 39 < 1%
3. 40 – 44 = 2%
4. 45 – 49 = 5%
5. 50 – 54 = 8%
6. 55 – 59 = 12%
7. 60 – 64 = 12%
8. 65 – 69 = 13%
9. 70 – 74 = 14%

The adjusted age categories for this study group differently because HCO has no enrollees with Medicare coverage (persons aged 65 and over) and the risk percentages above, increase significantly between the following groups:

1. 20 – 39

2. 40 – 54
3. 55 – 64

Controlling for the Effects of Time with Independent Variable 5

The Greek playwright Menander (CA 300 B.C.E.) wrote, “Time is the healer of all necessary evils” later transfigured into “Time heals all wounds” (Gill, 2011). However, in the chronic cases of diabetes, patients’ health degenerates over time and some patients do not respond as well to treatment as others who receive the same type and frequency of treatment. In other words, health outcomes may improve, but the patient with diabetes may never experience excellent health.

Therefore, time must be included as an independent variable so the study can control for time. In order to control for the effects of time, the study used a period for examination both eighteen months prior to enrollment and eighteen month after enrollment in PSHI when measuring for health status. Clinical models for the effective treatment of chronic diabetes indicate there is sufficient time for the patient to improve health status over an 18-month period (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal interview communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal e-mail communication, January 6, 2011).

Variables for Research Question 2

Research Question 2 (RQ2) asks to what extent a diabetic person’s health outcomes improve, or not, with the provision of PSHI when the person was previously uninsured and care predominantly took place in a continuous clinical outpatient setting in comparison to a hospital emergency room. The status of health outcome, in this regard, depends upon insurance status and location of care. Therefore, the dependent variable is insurance status and the independent variable of service location adds to the RQ1 list of health status, age, and gender. As in RQ1, since the PSHI (HCO) enrolled families with no more than 100% of the federal poverty guidelines and with a race/ethnicity component of "Hispanic", the sample population controlled for income and race/ethnicity. Therefore, the variables for RQ2 identified as follows:

1. Dependent variable: Enrolled insurance status (E_T) where E_T equals the number of months enrolled in the PSHI not exceeding 18 months post-enrollment.
2. Independent variable 1: Health status (see below and Appendix D for coded health status).
3. Independent variable 2: Age (see above for grouping).
4. Independent variable 3: Gender.
5. Independent variable 4: Service location (clinical outpatient or emergency room).
6. Independent variable 5: Time (18 months post-enrollment).

Data Analysis

The researcher took the PHI de-identified files D_1 and D_2 and coded the dependent and independent variables. The databases converted into the SPSS statistical analysis software for subsequent analysis of central tendencies and regression analyses. The regression analyses tested the significance of the relationship between variables using

ANOVA (analysis of variance), correlation, and measurement of standard deviation around the means of each measurement.

Both research questions required a test of the strength of the relationship between clinical health status and PSHI enrollment controlling for Age, Gender, Time, and Service Location. Therefore, a bivariate correlation analysis appeared most appropriate to answer the research questions (Babbie, 2010; McNabb, 2008; Trochim & Donnelly, 2007). According to Trochim and Donnelly (2007), a correlation analysis by definition, mathematically measures the strength of the relationship between variables by calculating a Coefficient of Determination (R^2) where R equals (p. 271):

$$\frac{N\sum xy-\left(\sum x\right)\left(\sum y\right)}{\sqrt{\left[N\sum x^2-\left(\sum x^2\right)\right]\left[N\sum y^2-\left(\sum y\right)^2\right]}}$$

Where:

N= number of score pairs

$\sum xy$ = sum of the products of paired scores

$\sum x$ = sum of x scores

$\sum y$ = sum of y scores

$\sum x^2$ = sum of squared x scores

$\sum y^2$ = sum of squared y scores

McNabb (2008) provides “Interpretation Guidelines for Correlation Values” as follows (p. 205):

0.00 = No relationship

0.01 – 0.19 = Weak relationship

0.20 – 0.39 = Low but definite relationship

0.40 – 0.59 = Moderate relationship

0.60 – 0.79 = Strong relationship

0.80 – 0.99 = Very strong relationship

1.00 = A perfect positive or negative relationship

By using these guidelines for the correlation values, the following hypotheses are applicable for RQ1:

H_0 – There is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between health improvement and insurance status controlling for age and gender over time.

By using these guidelines for the correlation values, the following hypotheses are applicable for RQ2:

H_0 – There is little (low) or no relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

The regression analysis showing the correlation between health status and month of enrollment charted in a scatterplot like the example in Figure 1:

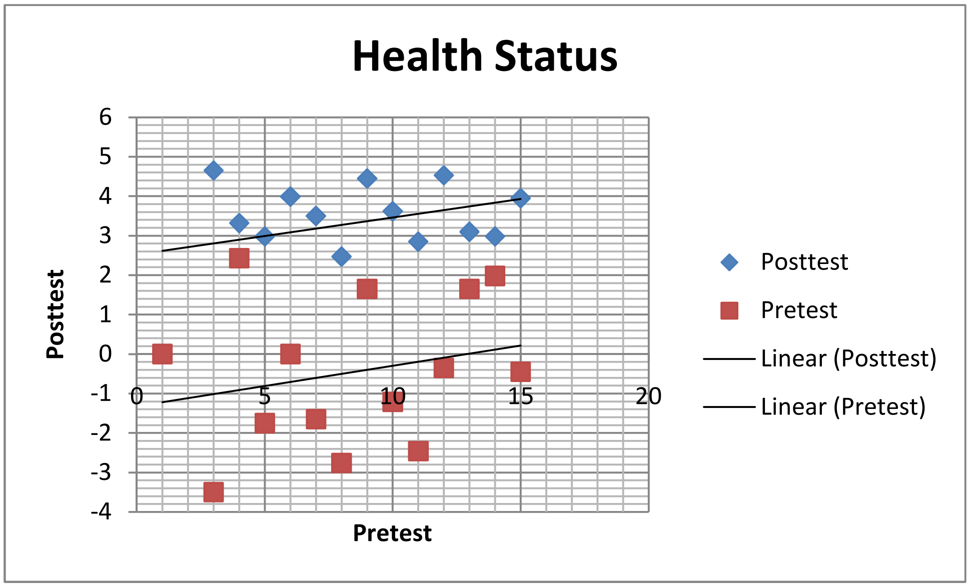


Figure 1. Health status scatterplot chart showing example of how cases plot graphically for analysis.

The data provided pre and posttest linear regression analysis that indicated the significance and strength of the relationship between health status and health insurance provision with multiple models for perspective controlling for age, gender, and time.

Methodology Appropriateness

The research questions logically required a test of the relationship strength between having or not having insurance coverage and having or not having an improvement of clinical health status. Thus, the OGPPD design, commonly used in pharmaceutical and procedural clinic trials, appeared the most appropriate.

While self-perceived health status, requiring patient surveys and/or focus groups, could provide information regarding the uses of insurance after having been uninsured or shed light on the complexities of accessibility and affordability in the relationship of health insurance and health outcomes, the research question in this study quantitatively speak only with the voice of clinical data (Lange & Piette, 2005). Consequently, as demonstrated by risk calculation models established by Lange and Piette (2005), Levy and Wolf (2010), and Wells, Jain, Arrigain, Yu, Rosenkrans and Kattan (2008), the clinical data sufficiently provided the health status of the patient for the purposes of this study.

Thus, qualitative methodology or any other quantitative process other than the OGPPD in this study was less or ineffective in answering the two research questions.

Threats to Validity and Reliability

Reliability defines as a quality measurement methodology, suggesting that same data collected each time in repetitious observations of the same phenomenon produce consistent results (Babbie, 2010, p. 150; Knoke, Bohrnstedt, & Wee, 2002, p. 409). Theoretically, concepts based on immeasurable data or data measured with little accuracy or evidence is unreliable (Katzer, Cook, & Crouch, 1998).

Validity is the extent to which a variable's measurement accurately reflects a concept as true or fact (Babbie, 2010; Knoke, Bohrnstedt, & Wee, 2002; Trochim & Donnelly, 2007). Threats to validity include construct (expectation among "systems of theoretical relationships"), conclusion (relationship between cause and effect), content (variable relationship to the meaning of the measurement), external (generalizability to other persons, places and times), and internal (causal relationships) threats to affiliations among the dependent and independent variables (Babbie, 2010, p. 154; Trochim & Donnelly, 2007).

Reliability of Variables

The published endocrine risk models and existing clinical trials consistently use the clinical data included within this study's health status matrix to determine clinical health status risk over time (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal interview communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal e-mail communication, January 6, 2011). In other words, from a standpoint of reliability, the data elements necessary to determine health status for Independent Variable 1 in both research questions, are historically included in diabetes research and for future research in other samples or other populations to determine health status. The reliability for Dependent Variable 1 therefore, appears strong.

Independent Variables 2 and 3, age and gender respectively for both RQs, matched by EP1 HCO, EPCHD UMC, and TTUHSC. These are self-reported variables for hospital and clinical registrations and PSHI enrollment, which verify by government document such as driver's licenses, passports or other means of picture identification. The Independent Variable 4 for RQ2, service location derived from the data obtained from the source locations, who must define location of service (hospital emergency room, other hospital location, and clinical outpatient) in all HICF submitted to EP1 HCO. The Independent Variable 5 for both RQ1 and RQ2 used a 36 month window for treatment, eighteen months prior to HCO enrollment and eighteen months post-enrollment. Thus, reliability is strong for all variables in both RQs.

Frequency of medical treatment visits are not the scope of the study and the use of time simply provided enough for the patient to respond to treatment provided under both health insurance and while uninsured. As mentioned in variable descriptions, clinical models for the effective treatment of chronic diabetes indicated there is sufficient time for the patient to improve health status over an 18-month period. Although the clinical models indicate health improvement is possible, the extent of that improvement is indeterminable (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal interview communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal e-mail communication, January 6, 2011).

Construct Validity

Construct validity, addresses the logical relationship among variables (Babbie, 2010). In this study, RQ1 asked for the extent of the relationship between health insurance and improved health for low-income Hispanic diabetics. RQ2 asked for the extent of the relationship between improved health statuses achieved from services received in a clinical outpatient setting compared to the hospital emergency room while having insurance for the same group. In preparation for these measures, certain theories developed on how health status relates to other variables. Consequently, for RQ1 to maintain construct validity a statistically significant relationship established between health insurance and health status. For RQ2, a statistically significant relationship established between health status and care provided in a primary care setting and care provided in an emergency room setting. Although a statistically significant relationship established for both RQs, the correlative strength of these relationships still varied.

Chapter 2 indicated that insurance access theory, indicated the need for insurance coverage to support the cost of care and thereby motivate the insured to seek care rather than avoid care (Holahan & Cook, 2005; Ross, Bradley, & Busch, 2006). The access, equity, and health outcome theory addressed insurance benefit design with emphasis on the primary and preventive care setting to improve health status (Schoen et al., 2006). Localized examples of PSHI that partially or fully meet the theoretical standards of insurance access theory and access, equity, and health outcome theory appear in the programs described above in the states of Massachusetts, Minnesota, and the cities of San Antonio, TX, and San Francisco, CA. Consistent with these theories, the financial and resource burden theory found that local PSHI and community programs such as Carelink in San Antonio, TX; the San Francisco Health Plans in California; and the Minnesota Comprehensive Health Association provided low cost and health promotion benefits for low-income populations who were previously uninsured (Taylor, Cunningham, & McKenzie, 2006).

Thus the literature points to local PSHI programs of health insurance that employ medical evidence based programs of care for those with chronic disease allowing for equal access and affordability to maintain health and stamina for individual productivity and quality of life. The literature recommends publicly sponsored solutions, financially shared among all participants, evidence based driven with results that ameliorate established chronic disease and prevent the manifestation of disease in the first place. The quantitative and qualitative methodology used in observations strongly suggested that expansion of PSHI leads to improved health outcomes among its participants. As a result, the RQs in this study tested the extent to which these theories in the literature relate health insurance to health status outcomes. The construct validity therefore, appeared strong.

Conclusion, Content, and Criterion-Related Validity

Conclusion validity refers to the degree that conclusions in the study relate to cause and effect or how the data relationships relate reasonably (Trochim & Donnelly, 2007). This study did not attempt to establish a cause and effect relationship between insurance and health outcomes. As a correlational study, the RQs design to establish the strength or weakness of the relationship between insurance and health status outcomes. Since the literature posits that those persons with insurance coverage have better outcomes due to improved access and affordability, this study is limited to testing the correlative relationship, not the cause and effect. In order to establish cause and effect, the study would delve into the subjects' reasons for enrolling in insurance and their attitudes toward the effect of insurance to open up accessibility and affordability to themselves and families. The study of cause and effect must therefore take a different approach to study those seeking healthcare after behavior reflecting that providers did not prefer to visit with uninsured patients. Consequently, this study utilized existing data that estimated health outcomes prior to and after the introduction of insurance. The threat to conclusion validity of cause and effect subsequently minimized.

Content validity refers to the degree to which a measure like health status in this study accurately covered the range of meaning for a person's health as very poor to very good health (Babbie, 2010). The health status matrix (HSM) (Appendix D) represented the largest threat to content validity and specifically, criterion-related validity, in this study. Within the HSM, the threat to criterion-related validity existed due to the tool's reliance on laboratory tests and vital signs recorded in the medical record associated with the patient at the time of care. These tests, taken together, assign a health status value from very poor health to very good health. This HSM does not exist in the literature and is not representative of what a medical doctor or provider may cognitively assume as the patient's health status if asked. However, as stated in the Methodology description above, risk calculation models established by Lange and Piette (2005), Levy and Wolf (2010), Wells et al. (2008), and other correlation studies by Behan et al. (2010), used the clinical data to assess health risk. Vital signs (body temperature, blood pressure, weight [BMI]), clinical diagnoses and laboratory tests (glycohemoglobin, cholesterol [LDL and HDL], and triglycerides) clearly indicated health risk. If health risk is high due to the results of this criterion, then health status interpreted by these same results. Therefore, for interpretive purposes of this study, vital signs, diagnosis, and laboratory results aids in interpreting meaningful results of health status (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal interview communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal e-mail communication, January 6, 2011). As a result, the content and criterion related threats to validity minimize.

Internal Validity

Internal validity concerns the causal relationship between the dependent and independent variables (Trochim & Donnelly, 2007). The study found a correlation between health insurance and improved health outcomes but did not necessarily indicate that having insurance caused patients to improve or not improve health outcomes. The study methodology design measured the strength of the relationship between enrollment in a PSHI and health outcomes and did not suggest a direct causal relationship, simply a possible contributing factor.

As stated in Chapter 2, substantial evidence suggested that persons requiring continuous medical treatment and have health insurance, access medical care more easily and frequently than those who do not (Davis et al., 2007; DeNavas-Walt, Proctor, & Smith, 2008; Heymann, Nunez, & Talavera, 2009; Kaiser, 2007). Self-management of disease including lifestyle choices and medication adherence within individual control is also important for controlling disease and ultimate medical outcomes (Yu, Yu, & Nichol, 2010). Therefore, personal health management and improved medical outcomes may be at-risk for the uninsured but there is little evidence to suggest a direct causal relationship. Consequently, the threat to internal validity minimized without the suggestion of a causal relationship between health insurance and improved medical outcomes.

External Validity

External validity addresses the generalizability of the study results to other populations (Trochim & Donnelly, 2007). Trochim and Donnelly (2007) suggested that a threat to external validity is a concern only when there is establishment of a causal relationship. While this study did not establish a causal relationship between health insurance and improved health outcomes, consideration for the measure of strength occurred when examining other PSHI products and claims of improved health outcomes in other populations. The reason for this occurrence is due to the prevalence in the literature suggesting that provision of health insurance to previously uninsured populations should alleviate problems of accessibility and affordability, lowering the risk of poor health outcomes.

The threat to external validity in this study existed in the focused nature of the study and methodology parameters. As established in Chapter 2, the insured is a vast and diverse group in various geographic locations, a variety of race/ethnic background including income and disease groups. Many uninsured have no known disease but simply lack access or desire to purchase health insurance. Mexican Americans in West Texas on the United States-Mexico border, financially disadvantaged, low-income, and suffering from a chronic, long term and debilitating diabetic condition was the focus of the study. The choice of this group for the study occurred due to the long-term health implications for not seeking primary, preventive care and because, without the presence of PSHI, the possibility of obtaining health insurance was remote, at best. Ultimately, the study will focused on the most at-risk group, most likely to be uninsured in other areas of the nation and most prone to chronic disease (Dusheiko, Doran, Gravelle, Fullwood, & Roland, 2010; McAdam-Marx, Field, Metraux, Moelter, & Brixner, 2010). From this perspective, the strength of the correlation of PSHI enrolled health insurance and improved medical outcomes the study sustained external validity.

Feasibility and Appropriateness

The subjects of the study were contained with HICF and enrollment data in the HCO database. The HICFs include the billing documents that denote service, location, diagnoses, dates of service sent to HCO by service providers (physicians and hospitals) and the remaining 17 elements listed above in the Instrumentation section of Chapter 3.

HCO confirmed using its own human resources to obtain the data and transmitted the D_0 data file securely through secure file transmission protocol to the UMCEP HIT department upon IRB approval documentation and a Data Use Agreement. HCO showed that out of 12,388 active enrollees, 1,343 active members generated service with a claim with diabetes as a primary diagnosis and an additional 356 active enrollees with diabetes as a secondary or tertiary diagnosis. The study had interest in those with claims where diabetes is a secondary or tertiary diagnosis since the patients treatment may be a contingent illness due to diabetes. All HCO members had a medical service visit to an EPCHD UMC location and met financial requirements that indicate family income is equal to or less than 100% of federal poverty guidelines (FPG) (C. Smallwood, personal e-mail communication, November 24, 2010). As a result, the total number (N) of subjects in the D_0 data file was 736 for the HCO enrollment period between March 1, 2009 and August 31, 2009. The D_0 data run was culled using Hispanic ethnicity indicator from the enrollment file or a Hispanic surname from the HICF data so the subject number resulted with $N = 712$.

The D_1 data file consisted of pre and posttest data from EPCHD service locations. This file contained 3,697 visits by the 712 patients contained in the D_0 data file. The D_2 data file consisted of pre and posttest data from TTUHSC service locations. This file contained 1,303 visits by the 712 patients contained in the D_0 data file. Combined, the study reviewed 5,000 visits by 712 patients who were pre and post enrolled in the 36 months between September 1, 2007 and February 28, 2011. The PHI-eliminated files after coding for health status merged into SPSS for statistical analysis. The D_0 data file and any other data containing PHI remain at the data sources in secure data storage.

Informed Consent and Ethical Considerations

The three fundamental issues and ethical considerations regarding human subject's research are Risk, Informed Consent and Privacy and Confidentiality (CITI, 2010). In this study's OGPPD design, the data from three medical sources are HICF information from HCO and medical records data from EPCHD UMC ER and TTUHSC clinics. While no surveys, interviews or direct subject content was necessary to conduct this methodology for analysis and answer the two RQs, minimal risk to privacy and confidentiality of private health information (PHI) existed in the process.

Risk

CITI (2010) describes three general categories of risk in social and behavioral sciences: invasion of privacy, breach of confidentiality, and study procedures. Invasion of privacy involves accessing PHI without the subjects' knowledge or consent. Breach of confidentiality occurs when information obtained by researchers can cause harm to subjects if the collected information releases outside the research setting. Finally, study procedures can cause subject harm simply by participating in the study.

Clearly, this study used PHI to measure health status before and after PSHI enrollment. Patient name, address, city, state, zip code, social security number, medical record numbers, and all vital signs, diagnoses, and laboratory test results are PHI used in answering both RQs. Patient names and demographics used to identify subjects receiving services in the pre and posttest took place in order to link the same patient to the three sources of data, HCO, EPCHD UMC, and TTUHSC clinics. However, as stated above in the Feasibility and Appropriateness section, all names and demographics including social security numbers were removed into de-identified data files by replacing identifying information with random number assignment by the data sources prior to transfer to the researcher. All data collection occurred though data source personnel who normally have access to the PHI information in their respective institutions. The PHI de-identified data files held minimal risk to the human subjects' clinical data remaining in these files.

Privacy, Confidentiality, and Waiver of Informed Consent

With de-identification of PHI, risks to breach of confidentiality minimized with the PHI data redacted from the D_1 and D_2 files. There appeared little, if any social or psychological harm to human subjects by participating with data-only in this study. The investigator requested and received a waiver of informed consent to the Institutional Review Board (IRB) for the following reasons (Appendix E):

1. PHI was redacted from the data files to be used in analysis by the data sources; the study posed minimal risk of harm to human subjects.
2. Personnel with confidentiality agreements with their respective institutions collected the PHI data and who normally have access to the requested information.
3. The subjects did not directly participate in the study since the data use was from secondary collected medical service data posing minimal risk to social or psychological harm.

4. Conducting the study could not reasonably occur if informed consent were required for all 712 participants.

Overall, the social significance of the study has a high value while the risks to privacy, confidentiality, and harm appeared minimal.

Summary

The problem statement showed how the Mexican American (MA) population along the Texas-Mexico border ranks nationally among the highest uninsured populations. The low-income uninsured population experiences health service disparities that local government attempts to address through PSHI solutions. While uninsured, low-income MA and chronic diabetic patients who suffer from comorbid medical conditions frequently seek medical care through the EPCHD UMC service locations. Once enrolled in HCO, the local PSHI encouraged patients, through opportunities for access at low out of pocket expense, to receive medical care in clinical environments more conducive to primary and preventive care at EPCHD and TTUHSC.

The resulting research questions inquired: To what extent do health outcomes change with medical treatment before and after receiving HCO PSHI enrollment and to what extent do health outcomes change by service location (ER compared to clinic) after HCO PSHI enrollment? Controlling for age, gender, family income, and ethnicity, does health insurance contribute to improved health outcomes as the literature theoretically suggests in Chapter 2?

In order to answer the RQs, the study used the quantitative One Group Pretest and Posttest Design (OGPPD) methodology used most commonly in health and social science studies and areas such as pharmaceutical clinical trials in medicine (Babbie, 2010; Katzer et al., 1998; McNabb, 2008; Trochim & Donnelly, 2007). While many OGPPD methodology, especially in clinical trials engage a non-equivalent group design (NEGD), which includes a control group, this study used one group who already received services in both the pretest and posttest environments. By including the one group, the researcher monitored health status from services provided up to 18 months prior to and after enrollment by obtaining vital signs, diagnosis, and specific laboratory test results.

The instrumentation of the design methodology included three sources of data:

1. EP1 HCO for claims data on 712 enrolled patients filed to them by TTUHSC clinic providers and EPCHD service locations pre and post enrollment.
2. EPCHD for 3,697 patient visits prior to and post HCO enrollment and clinical data related to those visits.
3. TTUHSC clinics for 1,303 patient visits pre and post HCO enrollment and clinical data related to those provider visits in a primary and preventive care setting.

The independent variable is the enrollment status of the subject. The dependent variables are health status, age, and gender. The independent variables of family income and ethnicity are already included in the subject selection of enrolled participants. For RQ2, in order to determine the extent of health outcome by service location, the study added this dependent variable.

A data correlation analysis, by definition used for mathematical measurement of relationship strength between variables, determined the results for RQs 1 and 2 with the following hypotheses:

For RQ1:

H_0 – There is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between health improvement and insurance status controlling for age and gender over time.

For RQ2:

H_0 – There is little (low) or no relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

As indicated in the threats to validity and reliability sections, the variables were reliable and valid with minimal threat to construct, content, conclusion, criterion-related, internal, and external validity. Data collection occurred from all three data sources: EP1 HCO, EPCHD UMC, and TTUHSC clinics. The data sources provided staff and permission with IRB approval from TTUHSC and Walden University in addition to data use agreements from TTUHSC and EPCHD. The data sources removed PHI to create de-identified data files through random number association, prior to transmission to the researcher for subsequent coding and analysis.

Chapter 4: Results

Introduction

Chapters 1 through 3 established historical background, current facts about the uninsured delaying or foregoing medical treatment from issues of accessibility and affordability and the research design necessary to determine the strength of the relationship between possessing PSHI and health outcomes. While a number of demonstration projects in various national locations indicated that PSHI programs control costs for enrolled participants in their care, none conclusively established that enrollee health outcomes improved from possessing and using PSHI.

Reiterating the problem statement, the Mexican American population along the Texas-Mexico border ranks nationally among the highest uninsured communities (Combs, 2009; Strayhorn, 2005). The uninsured obtain less and delayed medical care and more health-related problems leading to expensive chronic conditions, delegating publicly funded facilities with unfunded and possibly unpaid costs of care (DeNavas-Walt et al., 2008; Davis et al., 2007; Heymann et al., 2009; Kaiser, 2007). Yet, prevailing theories to ameliorate uninsured health disparities do not indicate whether PSHI solutions controlling the cost of care and manage enrollees for participation in medical treatment for chronic conditions such as diabetes, improve the health of the predominantly Mexican American enrolled population along the border (Boda, 2007; Livingston et al., 2008). Prior research identified the need to scrutinize the role of preventive and primary care in order to lower costs and improve individual and public health in highly uninsured communities (Ross et al., 2006).

Local government solutions include indigent managed care health plans (PSHI) that provide health maintenance, promotion, and disease prevention (Taylor et al., 2006). This study quantified participation and effectiveness of PSHI targeting Mexican-Americans to lower costs and improve individual health. This study contributes to the body of knowledge related to public policy effectiveness designed to address problems of the uninsured through the promotion of preventive and primary care.

Predominant theories on providing public health insurance options for the uninsured including insurance access theory (Holahan, & Cook, 2005), health inaccessibility theory (Schoen et al., 2006), health affordability theory (Collins et al., 2004), and financial and resource burden theory (Taylor et al., 2006), among others discussed in Chapter 2, all utilized quantitative designs. This study uses a quantitative unobtrusive, longitudinal, one group pretest-posttest design (OGPPD) (Babbie, 2010; Katzer, Cook, & Crouch, 1998; McNabb, 2008; Trochim & Donnelly, 2007). This relational study examined the utilization of health care services prior to and following the introduction of a PSHI to improve individual health of financially disadvantaged Mexican American (MA) Hispanics in El Paso, TX.

The study determined the health outcome effects for the financially disadvantaged and uninsured population of Mexican Americans in El Paso. By using the OGPPD design, the study measured the strength of the relationship between the uninsured medical outcomes of episodic treatment for chronic disease with the PSHI managed care program's continuous outpatient treatment outcomes.

Research Questions

This study examined the relationship between continuous, PSHI subsidized outpatient care, and uninsured inpatient and emergency care utilization for a financially disadvantaged, Mexican American population in El Paso, TX.

The research questions (RQ) for this study are:

1. Do chronic diabetic patients experiencing acute care episodes of illness contingent with their chronic conditions have better health outcomes (reduction or elimination of the top ten comorbid conditions resulting in emergency room visits: hypertension, fluid and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders (Fraze, Jiang, & Burgess, 2010) when enrolled in a PSHI MCO than those who rely on a public hospital emergency room for care?
2. To what extent is the health outcome of chronic Diabetic patients improved (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and triglycerides with less frequency of comorbidity events) when enrolled in a PSHI MCO and receiving continuous clinical outpatient care in comparison to those enrollees who go to a public hospital emergency room for acute episodes of illness contingent with their chronic condition?

Research Design and Data Procurement

The study used a quantitative OGPPD method as described in Chapter 3, the most common in health and social science studies such as pharmaceutical clinical trials or classroom teaching methods (Babbie, 2010; Katzer et al., 1998; McNabb, 2008; Trochim & Donnelly, 2007). In this study, the cases of patient visits with a primary, secondary, or tertiary diagnosis of diabetes were contained in the databases of the PSHI (Health Care Options, a product of El Paso First Health Plans, Inc.). Therefore, the OGPPD design set out to examine the health status of those enrolled with chronic diabetes after patients enrolled and prior to enrollment. This was accomplished using source data from claims filed to the PSHI from the health providers who treated these patients at the hospital for procedures (University Medical Center of El Paso hospital inpatients and outpatients), at the hospital Emergency Room, and at the physician clinical offices (Texas Tech University Health Sciences Center--El Paso).

The PSHI and the hospital are both subsidiaries of the El Paso County Hospital District (EPCHD). EPCHD has a research affiliation agreement with Texas Tech University Health Sciences Center El Paso (TTUHSC). The Data Use Agreements from EPCHD and TTUHSC relied upon the TTUHSC Institutional Review Board to determine the study's fitness to obtain patient data from both institutions. The Walden University IRB also relied upon the TTUHSC IRB approval to allow the study to proceed. Consequently, the researcher applied to the TTUHSC IRB requesting a limited data set (LDS) of secondary patient data (visit dates, visit location, laboratory results, vital signs, and diagnosis) in early June 2011.

The LDS required patient private health information (PHI) in order to locate medical records at the hospital and clinic locations. Thus, the application to the IRB included a waiver of patient authorization to release the secondary data due to the number of subjects in the population (1699) and the low probability of harm to research subjects of LDS information used in the study. In addition, to grant this waiver, the TTUHSC IRB required that data sources redact PHI prior to releasing the LDS to the researcher for data analysis. The TTUHSC IRB required EPCHD and TTUHSC data sources to assign random number assignments to the cases so the researcher can determine cases belonging to the same person. The researcher obtained TTUHSC IRB approval notification on August 18, 2011 (Appendix E) and subsequent Walden IRB approval notification to proceed with obtaining research data on August 22, 2011 (Appendix F). EPCHD executed a Data Use Agreement with the researcher on July 20, 2011 effective subsequent to TTUHSC IRB approval (Appendix G). TTUHSC executed a Data Use Agreement with the researcher on August 11, 2011, also subsequent to TTUHSC IRB approval and the Walden IRB approval to proceed with research (Appendix H).

Data File D_0

The initial data request to the three data sources, El Paso First Health Plans, Inc. (PSHI), UMC, and TTUHSC occurred on August 27, 2011 with specific instructions on time frames, case identification, and data transmission (Appendix I). The PSHI compiled the first data file (EP1 D_0) on September 20, 2011 and securely transferred the file to UMC and TTUHSC on the same date. The PSHI notified the researcher that the files transmitted and UMC and TTUHSC confirmed receipt.

The EP1 D_0 file contained 712 patients enrolled between March 1, 2009 and August 31, 2009. This six month time frame allows the UMC and TTUHSC data sources to compile the number and health status records of all visits eighteen months prior to and post enrollment dates. The EP1 D_0 file produced 42% of the patients out of the total population of 1699 enrollees with a primary or secondary diagnosis of diabetes (C. Smallwood, personal e-mail communication, November 24, 2010). UMC began working on the D_1 (UMC D_1) file for all inpatients, hospital outpatients, hospital clinical outpatients, and emergency room visits for the 712 patients on September 20, 2011. TTUHSC began working on the D_2 (TTUHSC D_2) file on the same day.

Data File D_1

The UMC D_1 file with redacted PHI transmitted to the researcher on October 11, 2011. This file contained 4,109 total pre and post enrollment visits at various locations at UMC. After deleting cases for persons less than 20 years of age and non-Hispanic, 3997 cases remained with the following composition:

Table 2

Case Data Frequency Distribution by Medical Treatment Location

Data Description	Total D_1 File	% to Total	% Loc to Total
Pre-enrollment non-ER hospital	100	11%	
Post-enrollment non-ER hospital	848	89%	
Total non-ER hospital (Code 1)	948	100%	24%
Pre-enrollment clinic hospital	281	11%	
Post-enrollment clinic hospital	2208	89%	
Total clinic hospital(Code 2)	2489	100%	62%
Pre-enrollment ER	25	4%	
Post-enrollment ER	535	96%	
Total ER (Code 3)	560	100%	14%
Total pre-enrollment	406	10%	
Total post-enrollment	3591	90%	
Total	3997	100%	100.00%

D_1 Data File Central Tendency

D_1 Service Location Frequency Distribution Central Tendency All Cases

The central tendency of the service location data indicates that 62% of medical treatment visits occur in the physician's office (Table 2; Figure 2). Data File D_1 case frequency distribution shows a marked and consistent visit service location of hospital clinic as the predominant distribution in this variable. This indicates a pronounced preference of service location away from the emergency room and in the hospital physician clinic. Overall, this frequency is a reasonable expectation when considering the spike of visits post enrollment to physician offices as opposed to pre-enrollment.

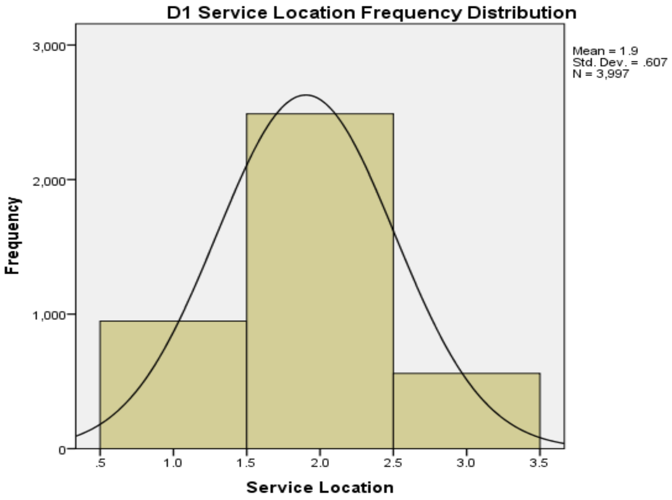


Figure 2. Bar graph showing service location frequency distribution in D_1 data file.

D_1 Service Location Frequency Distribution Central Tendency Pre/Post-Enrollment

Data File D_1 case frequency distribution and central tendency for pre-enrollment cases shows a preference for service location of category 2 physician office as the predominant distribution in this variable with a very small number of ER visits compared to the clinic and non-ER hospital locations (Table 3; Figure 3).

Table 3

Service Location Frequency Pre-Enrollment

Code (description)	Frequency	%
1 (Non-ER Hospital)	101	24.9
2 (Physician Office)	279	68.7
3 (Emergency Room)	26	6.4
Total	406	100.0

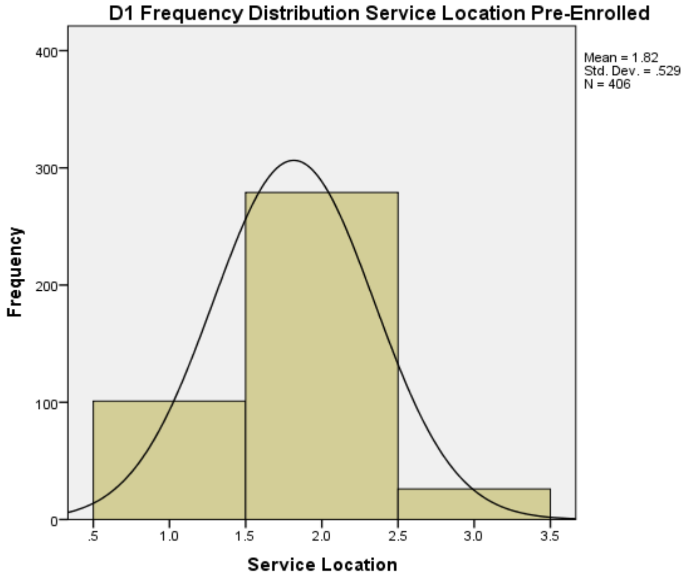


Figure 3. Bar graph showing service location frequency distribution for pre-enrollment cases in D_1 data file

This indicates a pronounced preference of service location away from the emergency room and in the hospital physician clinic. An apparent consistency appears in the data and graphic displays between the total pre and post-enrollment case percentages to the percentages by location in non-ER related hospital medical treatment locations (Table 4; Figure 4).

Table 4

Service Location Frequency Post Enrollment

Code (description)	Frequency	%
1 (Non-ER Hospital)	847	23.6
2 (Physician Office)	2210	61.5
3 (Emergency Room)	534	14.9
Total	3,591	100.0

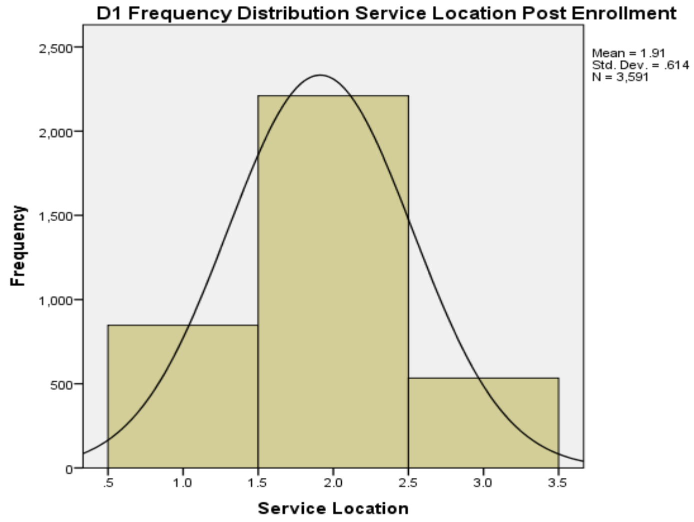


Figure 4. Bar graph showing service location frequency distribution for pre-enrollment cases in D_1 data file

However, each medical treatment location, emergency room, hospital non-emergency location, and hospital clinic location shows a compelling increase in treatment frequency post-enrollment. Ten percent (10%) of total case visits took place prior to PSHI enrollment where 90% took place post enrollment. This result appears compatible with the insurance access theory (Holahan & Cook, 2005) as described in the literature review. This theory holds that health insurance coverage plays a critical role in medical service accessibility. The apparent increased volume suggests that accessibility increased ten-fold.

The Frequency Distribution by medical visit location relates to another theory cited in the Literature Review. Financial and resource burden theory (Taylor, Cunningham, & McKenzie, 2006) purports that privately sponsored community efforts can relieve a significant financial burden from the community safety nets and public financing. As indicated in the literature review, health safety net managed care organizations (HSN MCO), such as the PSHI under study here and those studied by Brown and Stevens (2006), Cantor et al. (2007), Hernandez et al. (2009), Livingston (2010), Silversmith (2010), and Taylor et al. (2006) suggests a cost saving motivation. One of the primary reasons for establishing a HSN MCO is the reduction in cost by moving treatment location from an expensive ER to a clinical physician office location.

The data findings here indicate that ER visits comprised only 6.4% of pre-enrollment visits while hospital clinic visits comprised 68.7%. While the frequency of all visits increased considerably post enrollment, ER visits increased to 15% post enrollment and hospital clinic visits dropped to 62%. In fact, out of total ER cases, only 4% were pre-enrollment, and 96% were post enrollment. This data suggests that the patients' choice of treatment location and the providers' accessibility leaned toward the ER considerably more post enrollment than Taylor et al. (2006) advanced. The next step after discovering the surprising lack of ER visits on pre-enrollment time and an increase during the post-enrollment period is to run a correlation between the enrollment periods, determine the strength and significance of the relationship between service location and pre/post enrollment.

D_1 Gender Category Frequency Distribution Central Tendency All Cases

The gender category distribution for all cases seeking medical treatment at all locations shows an approximate 69% share, a considerable majority, by females. Sandman, Simantov, and An (2000) noted in a Commonwealth Fund survey on men's and women's frequency for medical treatment visits that 1 out of 4 men did not seek medical treatment in a given year while the rate for women was less at 1 out of 10. While men appear not to seek treatment regularly for preventative care, they also appear not to seek treatment for potentially life threatening conditions nearly as often as women (p. iv – v). Table 5 and Figure 5 appear to support Sandman et al. (2000) with twice as many females seeking medical treatment than males in this population sample.

However, a contrast occurs when examining the separate data on pre and post enrollment. Table 6 and Figure 6 indicates a remarkably higher distribution frequency for males on pre-enrollment treatment, than after receiving insurance in the post enrollment periods as indicated in Table 7 and Figure 7. The relative consistency of the entire data file and the post enrollment data file may be due to the 1:9 pre enrollment to post enrollment ratio of medical visits in the total data file D_1. While general medical visit frequency appears to rise considerably after receiving insurance coverage for females, male visit frequency appears to drop after receiving insurance while female visit frequency increases. However, when examing histograms of male and female post enrollment frequency in Figure 8 and 9 the distribution of service visit frequency for both males and females shows a very slight difference with a consistent and prominent spike in visit frequency in the first 3 months after insurance enrollment for both genders.

Table 5

Gender Category Frequency All Cases

	Frequency	Percent	Cumulative Percent
Female (0)	2,753	68.9	68.9
Male (1)	1,244	31.1	100.0
Total	3,997	100.0	

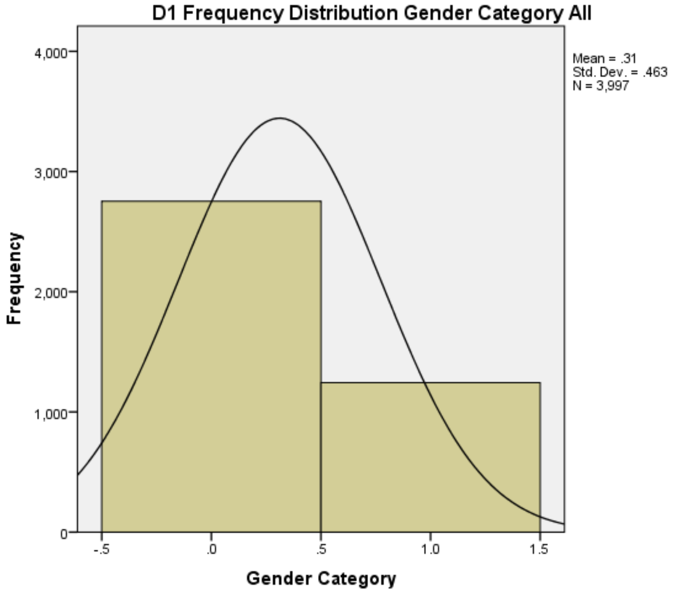


Figure 5. Bar graph showing gender category frequency distribution all cases in D_1 data file.

Table 6

Gender Category Frequency Pre-Enrollment

	Frequency	Percent	Cumulative Percent
Female (0)	242	59.6	59.6
Male (1)	164	40.4	100.0
Total	406	100.0	

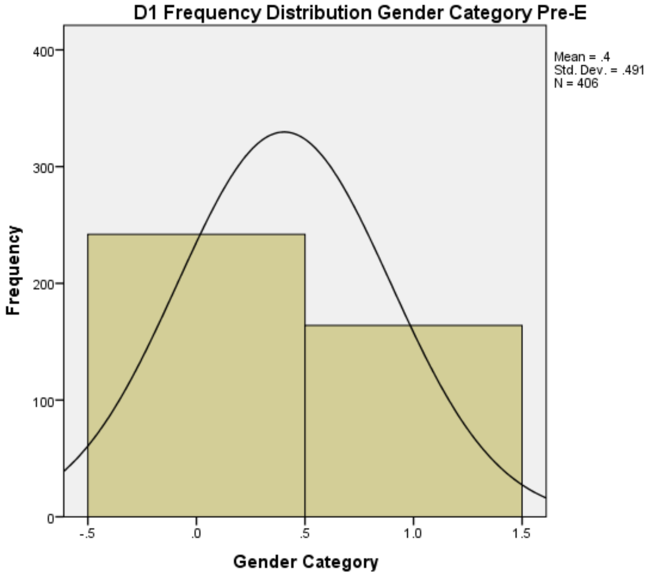


Figure 6. Bar graph showing gender category frequency distribution pre-enrollment in D_1 data file.

Table 7

Gender Category Frequency Post-Enrollment

	Frequency	Percent	Cumulative Percent
Female (0)	2,511	69.9	69.9
Male (1)	1,080	30.1	100.0
Total	3,591	100.0	

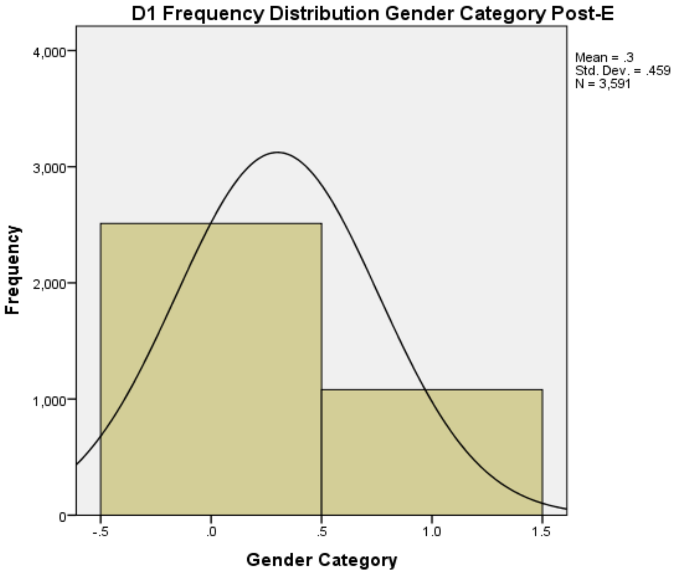


Figure 7. Bar graph showing gender category frequency distribution post enrollment in D_1 data file.

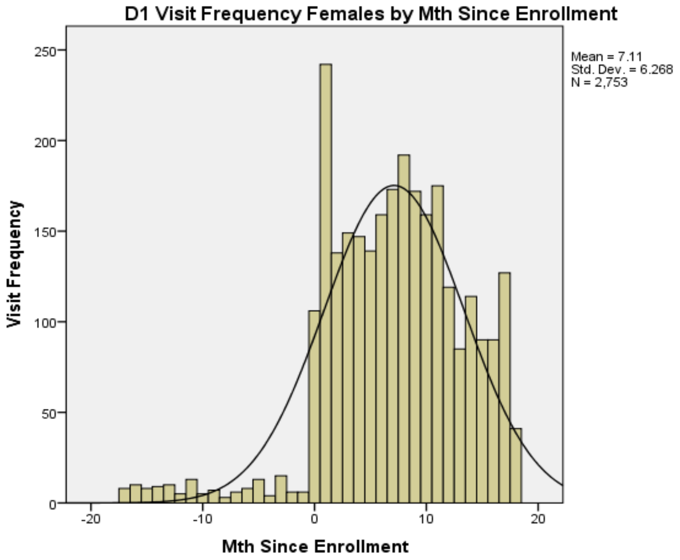


Figure 8. Bar graph showing gender category frequency distribution females in D_1

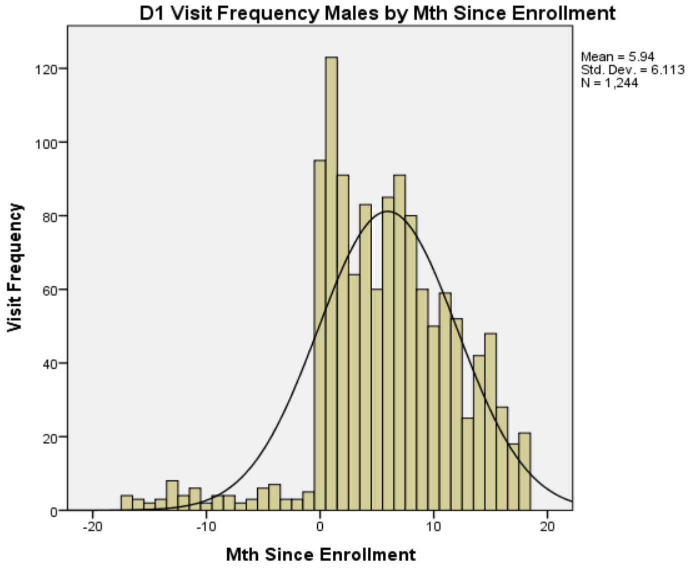


Figure 9. Bar graph showing gender category frequency distribution males in D_1

D_1 Age Category Frequency Distribution Central Tendency All Cases

The study methodology determined three categories for age: 20 – 39 years for category 1, 40-54 for category 2, and 55 – 64 years for category 3. The categories do not contain an equal number of years. The risk models cited in Chapter 3 commonly used to differentiate the associated risk of heightened acuity by age of persons with diabetes determined the composition of ages.

Upon examination of the age category data, central tendency toward the ages between 40-54 and older consistently appeared in total and in pre and post enrollment (Tables 8 – 10; Figure 10 – 12).

Table 8

Age Category Frequency All Cases

	Frequency	Percent	Cumulative Percent
1 (20-39)	424	10.6	10.6
2 (40-54)	1,674	41.9	52.5
3 (55-64)	1,899	47.5	100.0
Total	3,997	100.0	

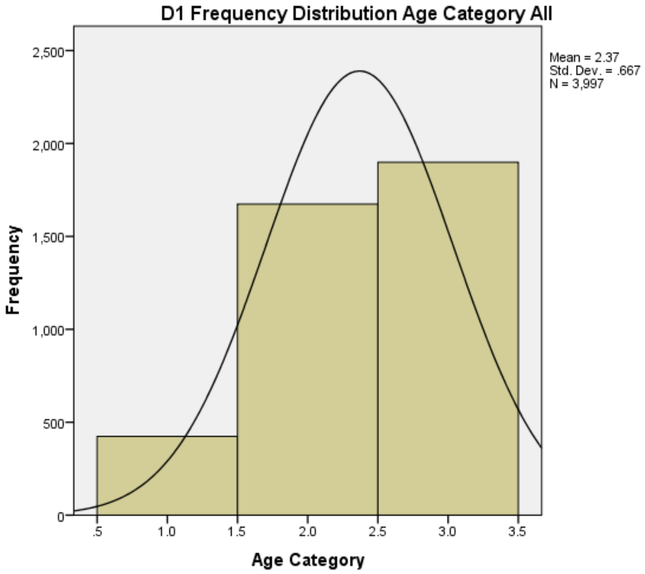


Figure 10. Bar graph showing age frequency distribution for all cases in D_1

Table 9

Age Category Frequency Pre-Enrollment

	Frequency	Percent	Cumulative Percent
1 (20-39)	40	9.9	9.9
2 (40-54)	172	42.4	52.2
3 (55-64)	194	47.8	100.0
Total	406	100.0	

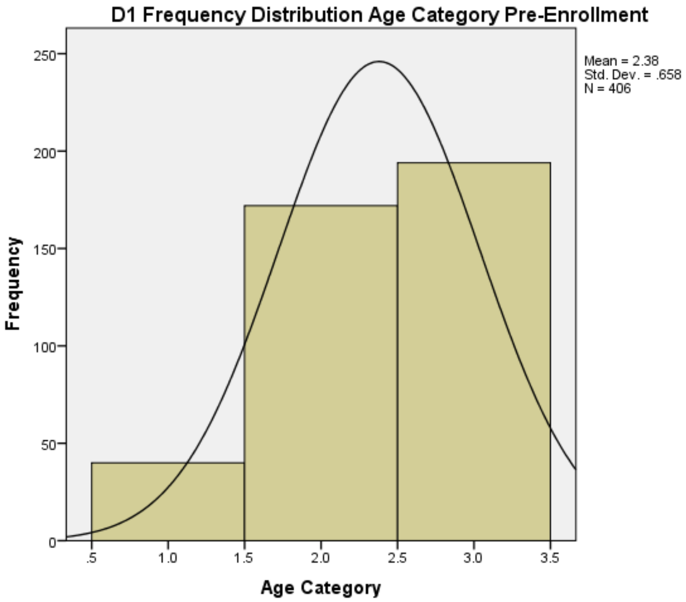


Figure 11. Bar graph showing age frequency distribution for pre-enrollment cases in D_1

Table 10

Age Category Frequency Post-Enrollment

	Frequency	Percent	Cumulative Percent
1 (20-39)	384	10.7	10.7
2 (40-54)	1,502	41.8	52.5
3 (55-64)	1,705	47.5	100.0
Total	3,591	100.0	

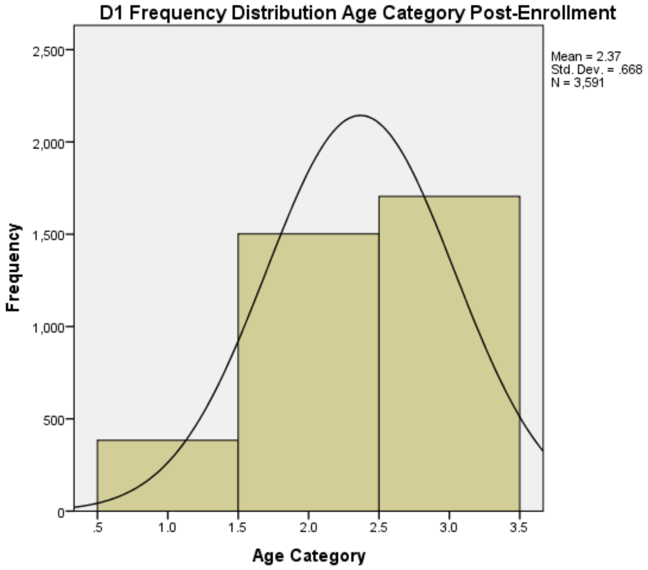


Figure 12. Bar graph showing age frequency distribution for post enrollment cases in D_1

Determination of central tendency by age category alone indicated that medical visit frequency occurs considerably more often with persons in the older age brackets than in the younger. This result also suggests that health status of persons in the older age brackets may correlate negatively, especially with the degenerative nature of diabetes.

D_1 Health Status Frequency Distribution Central Tendency All Cases

The Health Status code in all data files appears as follows according to the Health Status Matrix (HSM) in Appendix D:

a. -5 = Very Poor Health
b. -4 = Poor Health
c. -3 = Moderately Poor Health
d. -2 = Somewhat Poor Health
e. -1 = Health at-risk - Poor

f. 0 = Health at- risk – Chronic Condition (diabetes)

g. +1 = Health at-risk – Good

h. +2 = Somewhat Good Health

i. +3 = Moderately Good Health

j. +4 = Good Health

k. +5 = Very Good Health

The coding therefore creates a negative score for poor to very poor health and a positive score for good to very good health. The health status code is an interval measurement as opposed to an ordinal measurement such as age category, gender category, and service location (Trochim & Donnelly, 2007). An interval measurement indicates that there is meaning between the intervals of -5 (very poor health) to +5 (very good health). Consequently, when measuring central tendency of health status, the mean (average of all scores), median (the middle point of all scores), and mode (most frequently appearing score) may be between -3 and -4 which means that the overall scores indicate that the patient population health status is between moderately poor health and poor health (p. 266).

The Health Status independent variable is a key statistic for answering the research questions. The mean and median for all cases indicated -1.5 or health status equivalent to health at-risk poor to somewhat poor health for all cases. The standard deviation for the total D_1 data file is 1.04 from the mean (Figure 13). Trochim and Donnelly (2007) stated that this measure indicates the dispersion of health status categories around the mean so that health status of all cases in the D_1 data file varies from health at-risk with a chronic condition to somewhat poor health. The coding criteria in the data methodology require at least a negative score when the diagnosis for the visit reflects a contingent diabetic condition. As a result, by mere fact of the visit, most cases will not be visiting a hospital location (clinic, location, ER) without an illness negatively affecting the case's health status score.

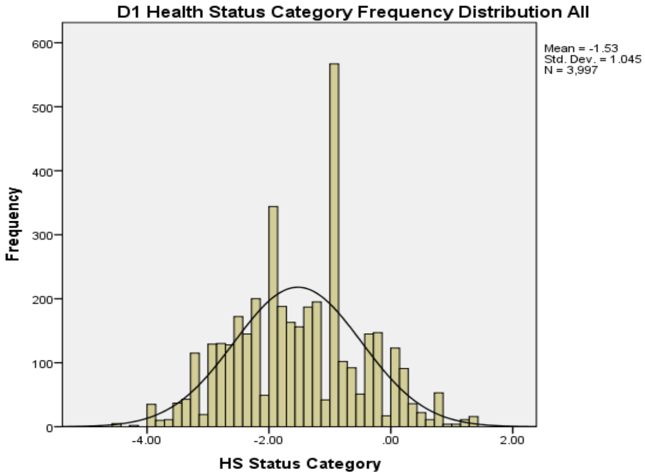


Figure 13. Bar graph showing health status frequency distribution for all cases in D_1

Pre and post enrollment data show nearly identical health status category frequencies with pre enrollment health status mean and median at -1.54 and -1.5 respectively and post enrollment mean and median health status at -1.52 and -1.5 respectively. This is graphically demonstrated in Figures 14 and 15. Both spikes in graphs for pre and post enrollment are categorized within the range of health at-risk poor health status.

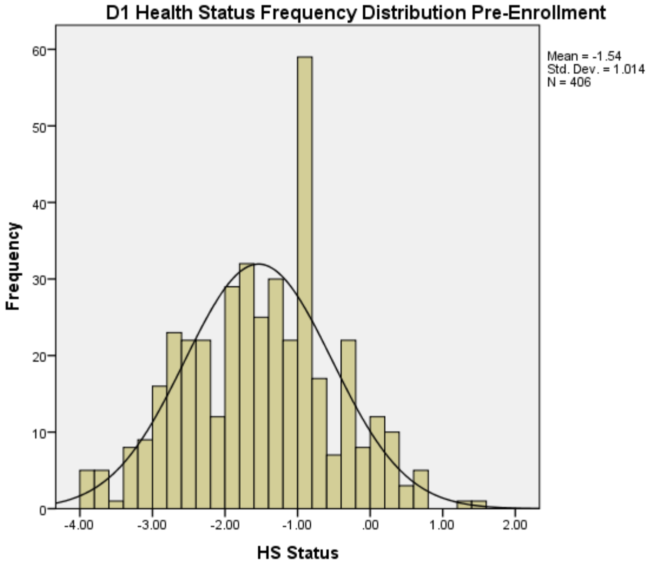


Figure 14. Bar graph showing health status frequency distribution for pre-enrollment cases in D_1 data file.

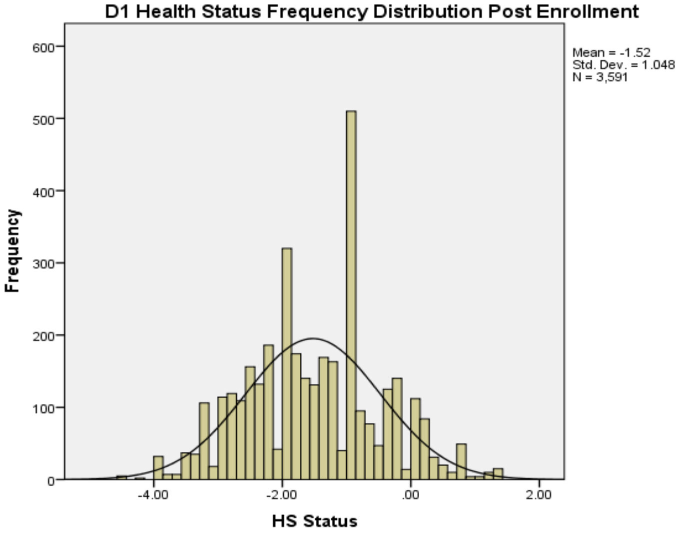


Figure 15. Bar graph showing health status frequency distribution for post enrollment cases in D_1 data file.

Summary of Central Tendency of Independent Variables

Descriptive statistics such as central tendency describe the cases according to mean and median for purposes of generalizability. The central tendencies of the cases in the D_1 sample population describe the average case as female, between the ages of 40 to 55 years old, most frequently making medical service visits to the physician's office with health at-risk poor to somewhat poor health due to complications from diabetes. The central tendencies of the cases in the D_1 file consistently show little variance in central tendencies between the pre and post enrollment data.

Nationally, according to the National Diabetes Information Clearinghouse (NDIC, 2011), 51% of diabetics are male while 49% are female. The D_1 data file shows 38% male and 62% female. The sample population making medical visits to providers appears skewed toward females which is consistent with Sandman et al. (2000) that show males seek care much less frequently than females. Data on medical visit frequency by gender for Mexican American Hispanics seeking treatment could not be located. While national statistics on service location and visit frequency could not be located, service location in the ER as a place of service appeared as an issue in all applicable theories in terms of costs, not frequency of visits. The D_1 data file showed 14% of all visits in the ER, 24% in other hospital locations (laboratory, outpatient procedures, and inpatients), and 62% in physician offices.

Regression Analysis and Correlation of the Dependent and Independent Variables in the D_1 Data File

Research Question 1 asked if chronic diabetic patients experience better health outcomes when enrolled in a PSHI MCO than not enrolled. Research Question 2 asked the extent to which diabetic patients experience health outcome improvement after enrolled in a PSHI MCO in the hospital emergency room than in a physician office setting. The D_1 data file offered a good opportunity to answer both research questions and the only opportunity to answer Research Question 2. The D_1 data file is the only data containing emergency room visits when exploring health status among the participants who also visited hospital owned physician office clinics. The D_2 data file only contains TTUHSC physician office visits of the 712 cases provided by EP1.

A standard bivariate regression obtains correlation values measuring the strength of the explanatory relationship between health status and month of enrollment. The following hypotheses are applicable for RQ1 and RQ2 using the D_1 data file to obtain preliminary results:

For RQ1:

H_0 – There is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between health improvement and insurance status controlling for age and gender over time.

For RQ2:

H_0 – There is little (low) or no relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

D_1 Answer to Research Question 1

Figure 16 represents a scatterplot graphically demonstrating an initial view of the regression line of health status pre and post enrollment consolidated in the D_1 data file.

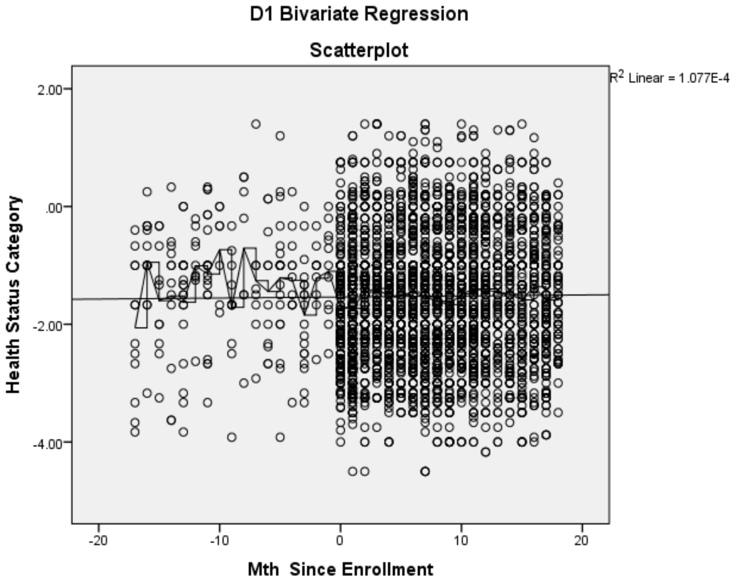


Figure 16. Scatterplot graph of standard bivariate regression analysis for RQ1 in D_1 data file.

Observations of the regression and interpolation lines of Figure 16 indicate little or no strength in the relationship of PSHI MCO enrollment to health status improvement. The regression line throughout the period of 20 months prior to and after enrollment indicates no change in health status. While visit frequency shows an apparently sharp increase from initial enrollment in the MCO controlling for age, gender, and service location, health status remained constant between somewhat and moderately poor health.

Table 11 is a partial correlation between the dependent variable of months since enrollment and the independent variable of health status controlling for the other independent variables of age, gender, and service location.

Table 11

Partial Correlation Logistic Regression of Health Status and Months Since Enrollment

		MSE	HS
Pearson Correlation	MSE	1.000	.010
	HS	.010	1.000
Sig. (1-tailed)	MSE		.256
	HS	.256	
N	MSE	3,997	3,997
	HS	3,997	3,997

Note. "MSE" is an abbreviation for months since enrollment and "HS" is an abbreviation for health status.

The standard deviation of the mean when comparing each measure affirms the null hypothesis that as time progresses, the health status outcome remains static and close around the mean despite the month of enrollment.

The result of this correlation shows that a significant relationship exists between the two variables; however, the strength of the relationship or the explanatory power between health status and month since enrollment is weak to nonexistent in Table 12. The R^2 calculation as explained in Chapter 3 indicates that although a relationship exists, the month of enrollment does not explain the health status outcomes, nor does the health status outcomes explain the month of enrollment (McNabb, 2008). This means that health outcomes do not appear to improve with PSHI MCO enrollment. The analysis of variance (ANOVA) in Table 13 affirms the null hypothesis (H_0) for RQ1 that there is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time at least according to the D_1 data with a significance factor of .515 (Pallant, 2007).

Table 12

Model Summary R^2

Model	*R*	*R^2*	*Adjusted R^2*	*SE*
1	0.01	.000	.000	6.243

Note. Predictors: (constant), health status, and dependent variable: month since enrollment.

Table 13

Analysis of Variance

Model		Sum of Squares	*df*	Mean Square	*F*	*Sig.*
1						
	Regression	16.772	1	16.772	.430	0.512
	Residual	155724.526	3995	38.980		
	Total	155741.297	3996			

Note. Dependent variable: month since enrollment, predictors: (constant), health status.

Comparing the means of each of the measures between both the dependent and independent variables and examining the consistency in the standard deviation from the mean for each measure further confirms the strength of the null hypothesis, as demonstrated in Table 14.

Table 14

Standard Deviation when Comparing Means of Months Since Enrollment (MSE) and Health Status

MSE	Mean	*n*	*SD*
-17	-2.0617	12	1.17611
-16	-.9477	13	.86358
-15	-1.5990	10	.98158
-14	-1.5183	12	1.22619
-13	-1.6250	18	1.04551
-12	-1.0067	9	.71849
-11	-1.1468	19	1.07480
-10	-.7329	7	.76236
-9	-1.7127	11	.96816
-8	-.7071	7	1.32929
-7	-1.2613	8	1.23977
-6	-1.4445	11	1.06794
-5	-1.2116	19	1.17152
-4	-1.2536	11	.92077
-3	-1.8450	18	.92391
-2	-1.2189	9	.65436
-1	-1.1000	11	.79689
0	-1.7172	201	.95493
1	-1.7289	365	.97834
2	-1.4542	229	1.02377
3	-1.3909	213	.97254
4	-1.5331	230	.96192
5	-1.4998	199	1.02425
6	-1.4551	244	1.06727
7	-1.5380	264	1.13706
8	-1.6100	272	1.00240
9	-1.6656	232	1.09653
10	-1.4788	209	1.00093
11	-1.4099	234	1.07090
12	-1.4010	171	1.06917
13	-1.4708	110	1.06209
14	-1.4907	156	1.08114
15	-1.5853	138	1.23478
16	-1.3625	118	1.10671
17	-1.5878	145	1.04675
18	-1.5094	62	.89299
Total	-1.5255	3997	1.04484

D_1 Answer to Research Question 2

Figure 17 represents a scatterplot graphically demonstrating an initial view of the regression line of health status post-enrollment for the emergency room service location only in the D_1 data file. Figure 18 is a scatterplot of the same criteria except for the service location of physician office clinical outpatient.

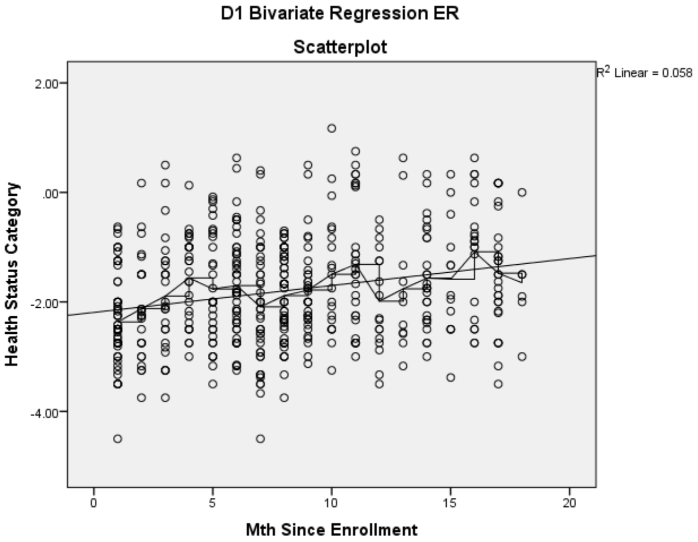


Figure 17. Scatterplot graph showing standard bivariate regression of ER cases for RQ2 in D_1 data file.

Observations of the regression and interpolation lines of Figure 17 indicate weak strength in the relationship of PSHI MCO enrollment to health status improvement for patients treated in the emergency room. The regression line throughout the period of 20 months after enrollment indicates slightly improved health status from a low moderately poor health to a high somewhat poor health classification.

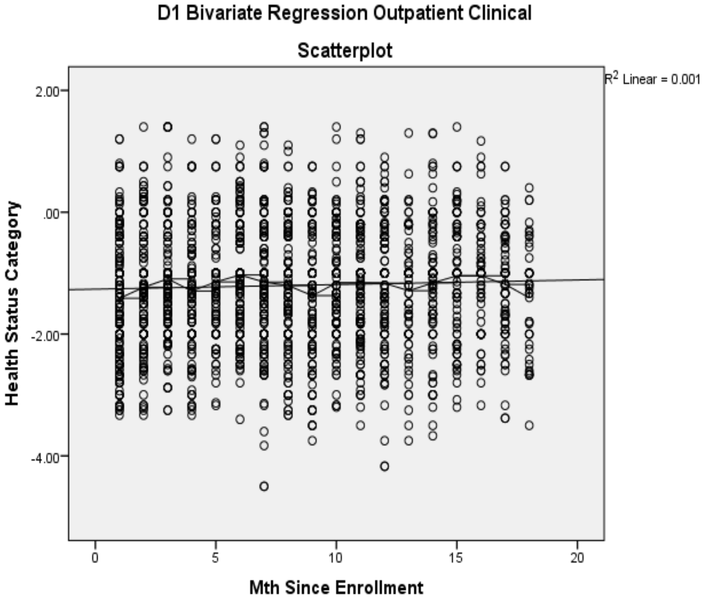


Figure 18. Scatterplot graph showing standard bivariate regression of outpatient clinic cases for RQ2 in D_1 data file.

Observations of the regression and interpolation lines of Figure 18 indicate little or no strength in the relationship of PSHI MCO enrollment to health status improvement for patients treated in the physician office outpatient clinical service location. The regression line throughout the period of 20 months after enrollment indicates no change in health status. While visit frequency shows, an apparently sharp increase from initial enrollment in the MCO controlling for age, gender, and service location, health status remained constant at somewhat poor health.

Table 15 represents a Pearson Correlation between the dependent variable of months since enrollment and the independent variable of health status for the emergency room service location while Table 16 represents the same correlation for the physician office outpatient clinical location.

Table 15

Pearson Correlation of MSE with HS for Emergency Room Visits D_1

Emergency Room Visits		MSE	HS
Pearson Correlation	MSE	1.000	.240
	HS	.240	1.000
Sig. (1-tailed)	MSE		.000
	HS	.000	
n	MSE	534	534
	HS	534	534

Note. "MSE" is an abbreviation for the dependent variable months since enrollment and "HS" is an abbreviation for the independent variable health status.

Table 16

Pearson Correlation of MSE with HS for Clinic Outpatient Visits D_1

Clinic Outpatient Visits		MSE	HS
Pearson Correlation	MSE	1.000	.038
	HS	.038	1.000
Sig. (1-tailed)	MSE		.000
	HS	.038	
n	MSE	2210	2210
	HS	2210	2210

Note. "MSE" is an abbreviation for the dependent variable months since enrollment and "HS" is an abbreviation for the independent variable health status.

While both correlations indicate a statistically significant relationship, only the post enrollment emergency visits show moderately weak explanatory strength that post enrollment health care improves health outcomes (Table 17). Physician Office post enrollment medical treatment, like the results of the consolidated D_1 file indicates little or no strength in the relationship of PSHI MCO enrollment to health status improvement (Table 18).

Table 17

Model Summary for R^2 Emergency Room Service Location

Model	*R*	R^2	*Adjusted* R^2	*SE*
1	0.24	.058	.056	4.720

Note. Predictors: (constant), health status, dependent variable: months since enrollment.

Table 18

Model Summary for R^2 Clinic Outpatient Service Location

Model	*R*	R^2	*Adjusted* R^2	*SE*
1	0.038	.001	.001	4.874

Note. Predictors: (constant), health status, dependent variable: months since enrollment.

Again, as in answering RQ1, comparing the means of each of the measures between both the dependent and independent variables and examining the consistency in the standard deviation from the mean for each measure further confirms the strength of the null hypothesis as demonstrated in Table 23. The standard deviation of the mean when comparing each measure affirms the null hypothesis that as time progresses, the health status outcome remains static and close around the mean, although less so in the ER than in the outpatient clinical environment, despite the month of enrollment.

Table 19

Standard Deviation when Comparing Means of the Independent and Dependent Variables

MSE	Mean	*n*	*SD*
-3	-2.3300	1	NA
-2	-1.6700	1	NA
0	-2.1904	24	.87328
1	-2.3673	73	.74849
2	-2.1215	26	.93902
3	-1.8935	26	1.07142
4	-1.5618	28	.80227
5	-1.7647	32	1.01123
6	-1.7016	50	.92973
7	-2.0907	43	1.10394
8	-1.8855	55	.76921
9	-1.7835	34	.82880
10	-1.4945	20	1.12338
11	-1.3136	28	1.19139
12	-1.9865	17	.94090
13	-1.7618	11	1.22421
14	-1.5658	26	.90702
15	-1.5854	13	1.09362
16	-1.0858	19	1.10018
17	-1.4756	27	1.05240
18	-1.6500	6	.97724
Total	-1.8300	560	.98957

The R^2=.058 for the emergency room service location and R^2=.001 for the clinic outpatient service location indicates that although relationships exist in post enrollment visits of both emergency room and physician office, the month of enrollment does not explain the health status outcomes for physician office visits. The month of enrollment has moderately weak explanatory power for health status improvement in the emergency room (McNabb, 2008). This means that health outcomes appear to improve with PSHI MCO enrollment slightly better in the emergency room than in the physician office.

The ANOVA in Tables 24 and 25 affirms the hypothesis (H_0) for RQ2 that there is little (low) or no relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time (Pallant, 2007).

Table 20

ANOVA of Emergency Room Service Location

Model		*SSR*	*df*	Mean Square	*F*	*Sig.*
1	Regression	725.962	1	725.962	32.581	.000
	Residual	11854.055	532	22.282		
	Total	12580.017	533			

Note. Dependent variable: months since enrollment, and predictors: (constant), health status.

Table 21

ANOVA Clinic Outpatient Service Location

Model		*SSR*	*df*	Mean Square	*F*	*Sig.*
1	Regression	75.118	1	75.118	3.162	0.075
	Residual	52445.699	2208	23.753		
	Total	52520.816	2209			

Note. Dependent variable: months since enrollment, and predictors: (constant), health status.

Once again, as done with the ANOVA for the entire D_1 file to answer RQ1 and for the ER to answer RQ2, the comparison of means for each measures between the dependent and independent variables was calculated. Examining the consistency in the standard deviation from the mean for each measure, further confirms the strength of the null hypothesis as demonstrated in Table 22.

Table 22

Standard Deviation when Comparing Means of the Independent and Dependent Variables for the Emergency Room Service Location for RQ2

MSE	Mean	*n*	*SD*
-17	-1.6189	9	.95964
-16	-.7625	12	.57200
-15	-1.6378	9	1.03297
-14	-1.2544	9	.66873
-13	-1.1607	14	.57623
-12	-.9763	8	.76188
-11	-1.0124	17	.99087
-10	-.7329	7	.76236
-9	-1.5625	8	.69613
-8	-.5750	6	1.40490
-7	-.8540	5	1.33251
-6	-1.4445	11	1.06794
-5	-.9665	17	.94275
-4	-1.2290	10	.96675
-3	-1.5500	12	.93095
-2	-1.1625	8	.67576
-1	-1.1000	11	.79689
0	-1.2922	106	.92151
1	-1.4135	226	.94794
2	-1.2320	164	.93317
3	-1.0939	143	.90289
4	-1.2941	151	.90286
5	-1.1431	101	.93196
6	-1.0309	140	.94411
7	-1.1463	168	1.06872
8	-1.2040	138	.99468
9	-1.3692	131	1.04094
10	-1.1604	136	.88269
11	-1.1595	150	.95786
12	-1.1663	123	1.04346
13	-1.2892	77	.98192
14	-1.1596	93	1.04306
15	-1.0444	84	1.03146
16	-1.0422	72	.93105
17	-1.1849	72	.90836
18	-1.4063	41	.95234
Total	-1.2042	2489	.96384

The standard deviation of the mean when comparing each measure affirms the null hypothesis that as time progresses, the health status outcome remains static and close around the mean despite the month of enrollment.

Data File D_2

The TTUHSC D_2 file with redacted PHI transmitted to the researcher on December 21, 2011. This file contained 1,303 total pre and post enrollment physician office visits at TTUHSC after deleting cases for persons less than 20 years of age and non-Hispanic. The D_2 data file contained the following pre and post enrollment percentages as enumerated in Table 23:

Table 23

Case Data Frequency Distribution by Pre and Post Enrollment

Data Description	Total D_2 File	% to Total
Total pre-enrollment visits	166	13%
Total post-enrollment visit	1,137	87%
Total Cases	1,303	100%

The D_2 data nearly match the service visit frequency on a percentage basis to the D_1 data file (89% post enrollment and 11% pre-enrollment) although the D_2 data file contained only one-fourth of the D_1 data file service visits. The D_2 file contained the compilation of physician office location only to assist in determining the answer to RQ1 to determine the extent to which medical outcomes improve after receiving PSHI but strictly in a physician office setting in comparison to the hospital locations of clinic, emergency room, and inpatient/outpatient hospital. Central Tendencies and a Bivariate Regression Analysis allow for affirmation or nullification of the D_1 RQ1 results. D_2

cannot affirm or nullify the RQ2 results since there are no emergency room visits in the TTUHSC D_2 data file.

D_2 Data File Central Tendency

As indicated by Tables 24 and 25, and Figures 19 through 21, central tendency almost mirrors the findings in the D_1 data file. The age categories, consistent with the D_1 data, service visits are predominantly in age categories 2 and 3 for ages 40 through 64. Although, unlike the D_1 data, the D_2 data shows very few service visits in age category 1 (less than 2%) and there are fewer age category 2 while an increased number of visits from those in category 3. This shift in age toward physician office visits may reflect the desire for frequent accessibility and lower cost than emergency medicine care while reaching toward the age for Social Security and Medicare. This will be a question for further research in Chapter 5.

Table 24

Service Location Frequency Distribution by Age Category in D_2 Data File

	Frequency	%	Cumulative Percent
Age 20-39 (1)	22	1.7	1.7
Age 40-54 (2)	431	33.1	34.8
Age 55-64 (3)	850	65.2	100.0
Total	1303	100.0	

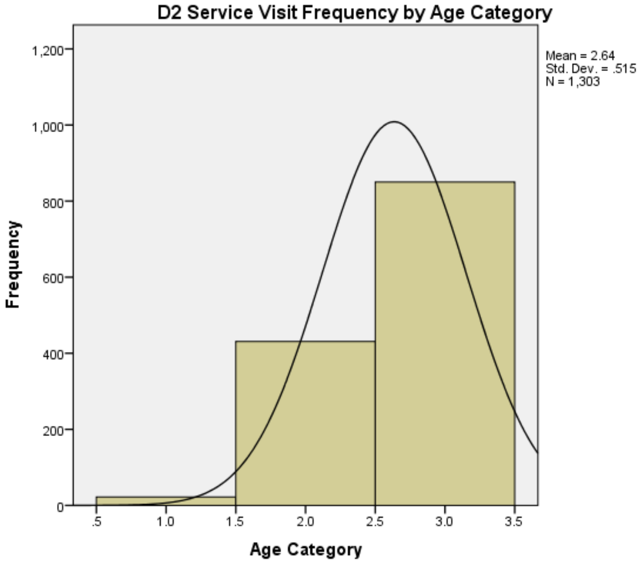


Figure 19. Bar graph showing service visit frequency by age category in the D_2 data file.

Service visit frequency is predominantly female more than 2:1 with 70% female to 30% males.

Table 25

Service Visit Frequency Distribution by Gender Category in D_2 Data File

	Frequency	%	Cumulative
Female (0)	906	69.5	69.5
Male (1)	397	30.5	100.0
Total	1303	100.0	

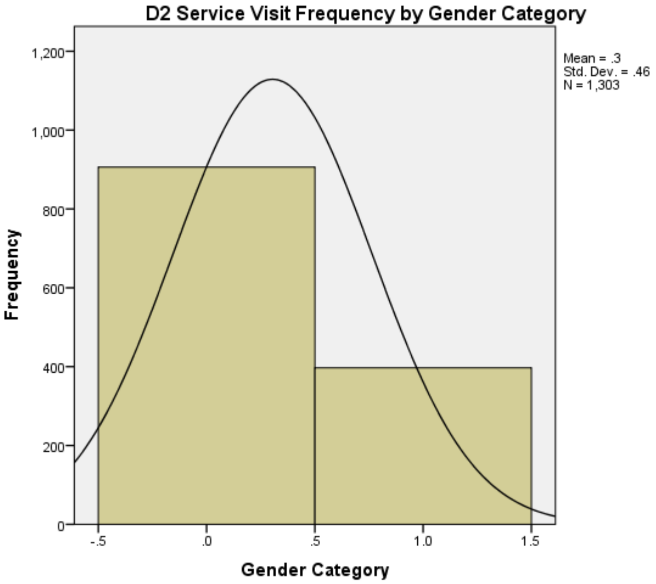


Figure 20. Bar graph showing service visit frequency by age category in the D_2 data file.

Mean and median health status (Figure 22) for D_2 is -.7480 and -1.0 respectively showing that health status is less severely ill with those making physician office visits in contrast to hospital visits. Mean health status is between health at risk – chronic condition and health at risk – poor.

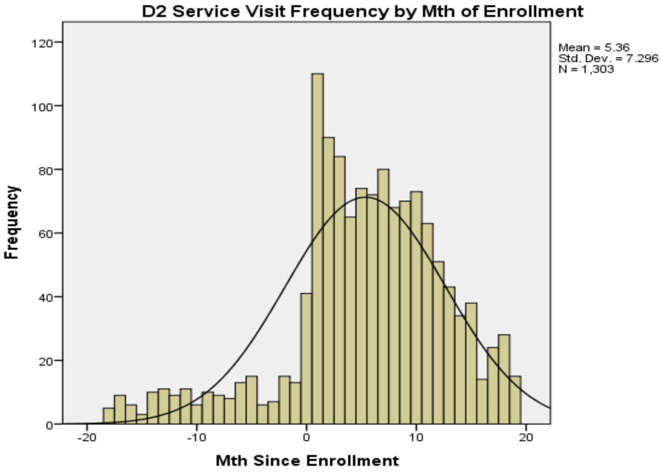


Figure 21. Bar graph showing service visit frequency distribution by months since enrollment in D_2 data file.

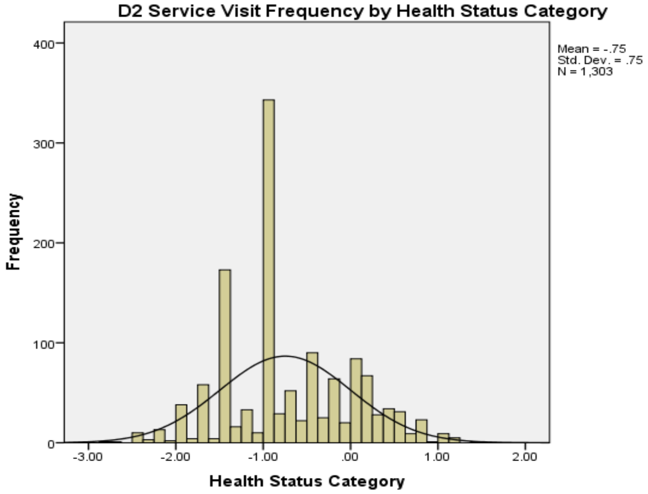


Figure 22. Bar graph showing service visit frequency distribution by health status in D_2 data file.

Summary of Central Tendency of the D_2 Data File Independent Variables

As a result, the central tendency of the D_2 file indicates the average patient is 55 to 64 years of age, female and who is in health at-risk poor to somewhat poor health. D_2 central tendency data analysis also shows a marked increase in service visit once obtaining PSHI. This observation again is consistent with the D_1 data file and the results of the analysis for the physician office location. The mean office location frequency is in the 5th to 6th month after receiving PSHI. Again and consistent with the D_1 data file, the pronounced jump in service visit frequency suggests that PSHI contributed toward medical service affordability but as indicated by the D_1 data file, D_2 consistently shows no improvement while controlling for time.

Regression Analysis and Correlation of the Dependent and Independent Variables in the D_2 Data File

Research Question 1 asks if chronic diabetic patients experience better health outcomes when enrolled in a PSHI MCO than not enrolled. Research question 2 asks the extent to which diabetic patients experience health outcome improvement after enrolled in a PSHI MCO in the hospital emergency room than in a physician office setting and cannot be answered using D_2 since there are no data for emergency room visits in D_2. The D_2 data file offered a good opportunity to answer RQ1 and affirm or nullify the results from answering RQ1 with the D_1 data file.

A standard bivariate regression obtains correlation values measuring the strength of the explanatory relationship between health status and month of enrollment. The following hypothesis is applicable for RQ1 using the D_2 data file to obtain preliminary results:

For RQ1:

H_0 – There is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between health improvement and insurance status controlling for age and gender over time.

D_2 Answer to Research Question 1

Figure 23 shows a scatterplot graphically demonstrating an initial view of the regression line of health status pre and post enrollment consolidated in the D_2 data file.

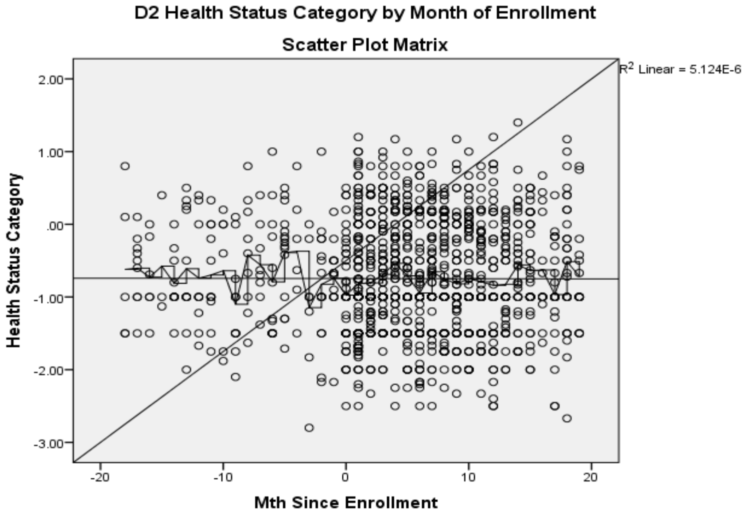


Figure 23. Scatterplot graph showing standard bivariate regression of the independent and dependent variables for RQ1 in D_2 data file

Observations of the regression and interpolation lines of Figure 4.12 indicate little or no strength in the relationship of PSHI MCO enrollment to health status improvement for the 1303 visits in the D_2 data file. The regression line throughout the period of 20 months prior to and after enrollment indicates no change in health status. While visit frequency shows, a pronounced and apparent increase from initial enrollment in the MCO controlling for age, gender, and service location, health status remained constant at somewhat poor health.

Table 26 is a partial correlation between the dependent variable of months since enrollment and the independent variable of health status controlling for the other independent variables of age, gender, and service location.

Table 26

Partial Correlations of Health Status and Months since Enrollment Controlling for Time

		MSE	HS
Pearson Correlation	MSE	1.000	-.002
	HS	-.002	1.000
Sig. (1-tailed)	MSE		.467
	HS	.467	
n	MSE	1303	1303
	HS	1303	1303

Note. "MSE" is an abbreviation for the dependent variable months since enrollment and "HS" is an abbreviation for the independent variable health status.

The result of this correlation between month since enrollment and the health status category shows that a significant relationship exists between the two variables as it does in the D_1 data file. Again, the strength of the relationship or the explanatory power between health status and month since enrollment is nonexistent as indicated in Table 33. The R^2 calculation as explained in Chapter 3 indicates that although a relationship exists, the month of enrollment does not explain the health status outcomes, nor does the health status outcomes explain the month of enrollment (McNabb, 2008). This means that health outcomes in the D_2 data do not appear to improve with PSHI MCO enrollment.

Table 27

Model Summary for R^2 for RQ1 in D_2 Data File

Model	*R*	R^2	*Adjusted* R^2	*SE*
1	.002	.000	-.001	7.299

Note. Predictors: (constant), health status, dependent variable: months since enrollment.

Once again, as done with the ANOVA for the entire D_1 file to answer RQ1 and for the ER to answer RQ2, comparing means for each measure between the dependent and independent variables finds the consistency in the standard deviation from the mean for each measure.

Table 28

ANOVA for RQ1 in D_2 Data File

Model		*SSR*	*df*	Mean Square	*F*	*Sig.*
1	Regression	.355	1	.355	.007	0.935
	Residual	69301.834	1301	53.268		
	Total	69302.189	1302			

Note. Dependent variable: months since enrollment, and predictors: (constant), health status.

This consistency further confirms the strength of the null hypothesis. The standard deviation of the mean when comparing each measure affirms the null hypothesis that as time progresses, the health status outcome of medical visits only in the physician office, similar to each of the other locations, remains static and close around the mean despite the month of enrollment.

Summary of Data Analysis

To restate the problem, the Mexican American population along the Texas-Mexico border nationally ranks among the highest uninsured communities (Combs, 2009; Strayhorn, 2005). The uninsured obtain less and delayed medical care and more health-related problems leading to expensive chronic conditions, delegating publicly funded facilities with unfunded and possibly unpaid costs of care (Davis et al., 2007; DeNavas-

Walt et al., 2008; Heymann et al., 2009; Kaiser, 2007). Prevailing and predominant studies in the literature on providing public health insurance options for the uninsured (Collins et al., 2004; Holahan & Cook, 2005; Schoen et al., 2006; Taylor et al., 2006) used quantitative designs to show that the PSHI solution for low-income populations tend to ameliorate the accessibility issues. In terms of accessibility, or more precisely, utilization, the data analysis shows a marked spike in accessibility and utilization post enrollment with PSHI (Figures 7 and 8 controlling for age and gender; Figure 23 in the physician office setting only; and Figures 16 and 17 for all hospital and physician office locations). Although the data analysis shows support for the predominant theories on accessibility, the research questions focus on health outcomes before and after obtaining PSHI.

As the theories mentioned above point out and as one may reasonably suspect, as frequency of visits for the same patients with a chronic disease such as diabetes increase, the medical outcome of those visits over the long term should improve the health of the patients overall. Research Question 1 asked if health outcomes improve with the provision of PSHI. The bivariate regression analysis showed little or no relationship between health status and months of enrollment in both the D_1 data file for all hospital locations and confirmed in the D_2 data file for all physician office locations. The results of the regression analysis for both data files matching is compelling, especially considering that diagnoses for visits in all locations ranged from most if not all co-morbid conditions of diabetes in all locations (hypertension, fluid and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders [Fraze, Jiang, & Burgess, 2010]).

In addition, the purpose of the medical service visits up to 20 months prior to the initial PSHI enrollment were not necessarily for a co-morbid condition but for chronic disease maintenance and control. While those patients without a chronic disease might be classified as moderately healthy, those with diabetes are classified as health at-risk poor by the mere fact of their chronic condition. The expectation of the analysis was not necessarily where the patient might improve their health from moderately poor or very poor health to moderately good or very good health. The hypothetical expectation was that the patient's health outcomes would simply improve to some extent. However, the results affirmed the null hypothesis.

Research Question 2 addressed the health outcome of health improvement in chronic diabetic patients (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and triglycerides with less frequency of comorbidity events). A comparison was made between patients who were enrolled in a PSHI MCO and receiving continuous clinical outpatient care versus those enrollees who went to a public hospital emergency room for acute episodes of illness contingent with their chronic condition. Similar to the answer in RQ1, the results show a significant relationship but little if any improvement of health status by those who receive care in the emergency room to almost the same extent as those who receive care in a physician's office. Only 14.9% of patient visits in the D_1 data file received care in the emergency room after PSHI enrollment. Health outcome improvement over time remained almost constant. Therefore, the null hypothesis was confirmed for RQ2. Health outcomes of chronic diabetic patients has little if any improvement while receiving continuous care in a public hospital emergency room in comparison to those enrollees who received continuous clinical outptaitent care.

Overall, through multiple perspectives and controlling for time, age, and gender, frequency of service visits or accessibility, the data showed marked increases while health outcomes remained constant over a full 3-year period prior to and after the provision of PSHI. The interpretation of these findings, recommendations for further action, implications for social change, and recommendations for further research is discussed in the next Chapter 5.

Finally, it is important to note the predictive quality of regression analysis. This predictive quality suggests that the lack of strength between the linearity of the variable for month since enrollment and health status can generalize and repeat with other uninsured populations. The population sample in the D_1 data file of 3,997 patient visits alone suggests that repeated tests among populations in a one-group pretest posttest design likely will result similarly. As will be further discussed in Chapter 5, this study population had in common ethnicity, low-income, a low personal cost PSHI, and the diabetes chronic disease.

The nature of diabetes is degenerative which, without the proper care, tends to deteriorate health over time. The results of the D_1 data file, and as resulted in the D_2 data file, show health outcomes from the significantly increased number of patient visits over time. These results show the stabilization of mean variance standard deviation at each measure of time and health status. This may indicate that instead of deteriorating, the diabetes health outcomes had stabilized to health at-risk poor to somewhat poor health. While statistically and clinically not improved, health outcomes may be a positive result that the diabetes maintained at a manageable level where patients continued to function normally. While health outcomes did not clinically improve, this does not translate necessarily in a failure of public policy to provide health insurance to the uninsured. In terms of future national and community health policy and implications for social change, the idea of improved community health from the provision of PSHI must consider health outcomes clinically as well as self-perceived health outcomes and contributions toward living productive lives.

Chapter 5 continues the discussion for the maintenance of health status for chronic diseases and improved health status using preventive care and ameliorating acute conditions through a low-cost vehicle.

Chapter 5: Summary, Conclusion, and Recommendations

Overview

The Obama administration, together with Congress, intended to expand health care coverage to 32 million uninsured Americans by 2019 (CEA, 2009; Marquez, Mitchell, & Crytzer, 2010) by proposing and passing the Patient Protection and Affordable Care Act (H.R. 3590, P.L 111-148) (PPACA), combined with a separate reconciliation bill (H.R. 4872). The legislation passed in March 2010 and began a series of health care reform measures that decidedly changes the provision and payment for health care services over 10 years and for decades to come. As justification for the PPACA proposed legislation in 2009, the President's Council of Economic Advisors (CEA) encouraged public policy and legislation to expand public sponsored health insurance coverage to increase economic and health wellness for the uninsured, thereby increasing the national labor supply and the functioning of the labor market (CEA, 2009, p. 3). According to the CEA (2009), provision of inexpensive preventive and primary care, helps individuals avoid costly chronic conditions and provides better outcomes toward individual, and ultimately, community wellness. This study examined the effectiveness of one fundamental premise for national and statewide initiatives for health care reform, measuring the health outcomes of the uninsured after insurance provision.

As the problem statement posits, the Mexican American population along the Texas-Mexico border ranks nationally among the highest uninsured communities (Strayhorn, 2005). The literature shows that the uninsured obtain less and delayed medical care and experience more health-related problems leading to expensive chronic conditions, delegating publicly funded facilities with unfunded and possibly unpaid costs of care (DeNavas-Walt, Proctor, & Smith, 2008; Davis, Schoen, Schoenbaum, Doty, Holmgren, Kriss, Shea, 2007; Heymann, Nunez, & Talavera, 2009; The Kaiser Commission on Medicaid and the Uninsured [Kaiser], 2007).

As delineated in Chapter 2, Hispanics rank nationally as the highest uninsured ethnic group with over 33% (see Table 1). Mexican Americans comprise nearly 64% of all Hispanics (Stone & Balderrama, 2008). Social factors that contribute toward health disparities in the United States include level of education and income, poor housing and working conditions, unhealthy environmental issues such as air and water quality, along with inadequate or unaffordable supplies of food (CDC, 2011; Foege, 2010; Vega, Rodriguez, & Gruskin, 2009). One of the contributing factors for ethnic health disparities among Hispanics is the socio-economic condition of being uninsured. Vega et al. (2009) posited that Hispanics have high rates of uninsured because employers of Hispanics do not offer employer sponsored health insurance (ESHI) or individuals feel they do not need it because they feel healthy and insurance policies changed, offering fewer benefits and higher amounts of cost share with the patients (p. 107). These conditions may frequently occur on the border with Mexico, where Mexican health providers offer affordable acute care and where medications do not require prescriptions in many cases (Boda, 2007). The cross-border availability of inexpensive health care may contribute toward accessibility for this specific population of Mexican Americans that may not be available to other Hispanic communities farther away from the border. However, the rates of uninsured in the study population nearly match that of the national Hispanic population.

Yet, prevailing theories to ameliorate uninsured health disparities do not indicate whether PSHI solutions for controlling the cost of care and managing enrollee participation in medical treatment for chronic conditions, improve the health of the predominantly Mexican American enrolled population along the border (Boda, 2007; Livingston, Minushkin, & Cohn, 2008). Prior research identified the need to scrutinize the role of preventive and primary care to lower costs and improve individual and public health in highly uninsured communities (Ross, Bradley, & Busch, 2006).

Local government solutions have included indigent managed care health plans (PSHI) that provide health maintenance, promotion, and disease prevention (Taylor, Cunningham, & McKenzie, 2006). This study quantified participation and effectiveness of PSHI, targeting Mexican Americans, to improve individual health. Predominant theories on providing public health insurance options for the uninsured including insurance access theory (Holahan & Cook, 2005); access, equity, and health outcome interrelationship theory (Schoen et al., 2006); health affordability theory (Collins et al., 2004); and financial and resource burden theory (Taylor et al., 2006), among others discussed in Chapter 2, all utilized quantitative designs. This study used a quantitative unobtrusive, longitudinal, one group pretest-posttest design (OGPPD) (Babbie, 2010; Katzer, Cook, & Crouch, 1998; McNabb, 2008; Trochim & Donnelly, 2007). This relational study examined the utilization of health care services prior to and following the introduction of a PSHI to improve individual health of financially disadvantaged

Mexican Americans. The study also examined the relationship between PSHI subsidized care in the emergency room (ER), versus care in the physician's office for a financially disadvantaged, MA Hispanic population in El Paso, TX.

The research questions (RQ) for this study were:

1. Do chronic Diabetic patients experiencing acute care episodes of illness contingent with their chronic conditions have better health outcomes (reduction or elimination of the top ten comorbid conditions resulting in emergency room visits: hypertension, fluid and electrolyte disorders, chronic pulmonary disease, deficiency anemias, renal failure, obesity, congestive heart failure, hypothyroidism, depression, and peripheral vascular disorders (Fraze, Jiang, & Burgess, 2010) when enrolled in a PSHI MCO than those who rely on a public hospital emergency room for care?
2. To what extent is the health outcome of chronic Diabetic patients improved (glycohemoglobin level, cholesterol [including HDL/LDL ratios], blood pressure, and triglycerides, with less frequency of comorbidity events when enrolled in a PSHI MCO and receiving continuous clinical outpatient care in comparison to those enrollees who go to a public hospital emergency room for acute episodes of illness contingent with their chronic condition?

The research questions and study design focused on determining the health outcome effects for the uninsured population. By using the OGPPD design, the study measured the strength of the relationship between the uninsured medical outcomes of episodic treatment for chronic disease with the PSHI managed care program's continuous outpatient treatment outcomes. The study results showed a statistically significant but very weak relationship between improved health outcomes and PSHI enrollment in answer to Research Question 1. The same result occurred when receiving treatment after enrollment in a PSHI, whether the treatment occurred in an emergency room or a series of visits to the physicians' clinical office in answer to Research Question 2.

Interpretation of Findings

The study used a quantitative OGPPD method as described in Chapter 3 (Babbie, 2010; Katzer et al., 1998; McNabb, 2008; Trochim & Donnelly, 2007). In this study, the cases of patient visits with a primary, secondary or tertiary diagnosis of diabetes were contained in the databases of the PSHI (Health Care Options, a product of El Paso First Health Plans, Inc.) labeled the D_0 data file. The OGPPD design examined the health status of those enrolled with chronic diabetes after patients enrolled and prior to enrollment. The study obtained source data from claims filed to the PSHI from two service locations. The first location was from the health providers who treated these patients at the hospital for procedures (University Medical Center of El Paso hospital inpatients, clinic outpatients, and the hospital Emergency Room) labeled the D_1 data file. The second location was from the physician clinical offices (Texas Tech University Health Sciences Center – El Paso) labeled the D_2 data file.

Conclusion for Research Question 1

Research Question 1 asks if chronic diabetic patients experience better health outcomes when enrolled in a PSHI MCO than not enrolled. The D_1 and D_2 data file together offered the opportunity to answer both research questions. The D_2 data file only contains TTUHSC physician office visits of the 712 cases provided by EP1. The D_2 data file was important in affirming the results for RQ1 using the D_1 data file with the same patients in three different hospital settings.

A standard bivariate regression obtains correlation values measuring the strength of the explanatory relationship between health status and month of enrollment. The following hypotheses are applicable for RQ1 using the D_1 data file:

For RQ1:

H_0 – There is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between health improvement and insurance status controlling for age and gender over time.

Graphical demonstration of the regression line of health status pre and post enrollment consolidated in the D_1 data file indicate little or no strength in the relationship of PSHI MCO enrollment to health status improvement. The regression line throughout the period of 18 months prior to and after enrollment indicates no change in health status. While visit frequency shows an apparently sharp increase from initial enrollment in the MCO controlling for age, gender, and service location, health status remained constant between somewhat poor and health at-risk poor.

The correlation between the dependent variable of months since enrollment and the independent variable of health status controlling for the other independent variables of age, gender, and service location result in a statistically significant relationship between the health status and month since enrollment but the strength of the relationship between them is weak to nonexistent. The R^2 calculation as explained in Chapter 3 and calculated in Chapter 4 indicates that although a relationship exists, the month of enrollment does not explain the health status outcomes, nor does the health status outcomes explain the month of enrollment (McNabb, 2008). This means that health outcomes do not appear to improve with PSHI MCO enrollment. The ANOVA affirms the null hypothesis (H_0) for RQ1 that there is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time at least according to the D_1 data. By comparing the means of each of the measures between both the dependent and independent variables and examining the consistency in the standard deviation from the mean for each measure further confirms the strength of the null hypothesis.

The D_2 data file affirms the results for RQ1 from the D_1 data file. Observations of the regression and interpolation lines indicate little or no strength in the relationship of PSHI enrollment to health status improvement for the 1303 visits in the D_2 data file. The regression line throughout the period of 18 months prior to and after enrollment indicates no change in health status. While visit frequency indicated, a pronounced and apparent increase from initial enrollment in the PSHI controlling for age, gender, and service location, health status remained constant at somewhat poor health consistent with the D_1 data file.

The correlation between the dependent variable of months since enrollment and the independent variable of health status controlling for the other independent variables of age, gender, and service location resulted in a statistically significant relationship as it does in the D_1 data file. Again, the strength of the relationship is nonexistent. The R^2 calculation as explained in Chapter 3 and calculated in Chapter 4 indicates that although a relationship exists, the month of enrollment does not explain the health status outcomes, nor does the health status outcomes explain the month of enrollment (McNabb, 2008). This means that health outcomes in the D_2 data do not appear to improve with PSHI enrollment. The ANOVA affirms the null hypothesis (H_0) for RQ1 that there is little (low) or no relationship between health improvement and insurance status controlling for age and gender over time (Pallant, 2007). Therefore, the D_2 data file confirms the analysis of the D_1 data that the null hypothesis of little or no relationship exists between health outcomes improvement after the provision of PSHI controlling for age and gender over time.

Once again, as done with the ANOVA for the entire D_1 file to answer RQ1 comparing means for each measure between the dependent and independent variables finds the consistency in the standard deviation from the mean for each measure. This consistency further confirms the strength of the null hypothesis. The standard deviation of the mean when comparing each measure affirms the null hypothesis that as time progresses, the health status outcome of medical visits only in the physician office, similar to each of the other locations, remains static and close around the mean despite the month of enrollment.

Conclusion for Research Question 2

Research Question 2 asks the extent to which diabetic patients experience health outcome improvement after enrolled in a PSHI MCO in the hospital emergency room, than in a physician office setting. The D_1 data file offered the only opportunity to answer research question 2 since it contains the only data with emergency room visits when exploring health status among the participants who also visited hospital owned physician office clinics.

A standard bivariate regression obtains correlation values measuring the strength of the explanatory relationship between health status and month of enrollment. The following hypotheses are applicable for RQ2 using the D_1 data file to obtain results:

For RQ2:

H_0 – There is little (low) or no relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

H_1 – There is a moderate to very strong relationship between service location and health improvement with enrolled insurance status controlling for age and gender over time.

Observations of the regression line of health status post-enrollment for the emergency room service location indicate weak explanatory power in the relationship of PSHI MCO enrollment to health status improvement. The regression line throughout the period of 18 months after enrollment indicates slightly improved health status from a low somewhat poor health status to a high health at-risk poor status classification. Observations of the regression and interpolation lines of the physician office indicate little or no strength in the relationship of PSHI MCO enrollment to health status improvement. The regression line throughout the period of 18 months after enrollment indicates no change in health status. While visit frequency shows, an apparently sharp increase from initial enrollment in the MCO controlling for age, gender, and service location, health status remained constant at somewhat poor health.

The results of the Pearson correlation between the dependent variable of months since enrollment and the independent variable of health status for the emergency room service location are the same. While both correlations indicate a statistically significant relationship, only the post enrollment emergency visits show moderately weak explanatory strength that post enrollment health care improves health outcomes. Physician office post enrollment medical treatment, like the results of the consolidated D_1 file indicates little or no strength in the relationship of PSHI MCO enrollment to health status improvement.

Again, as in answering RQ1, comparing the means of each of the measures between both the dependent and independent variables and examining the consistency in the standard deviation from the mean for each measure further confirms the strength of the null hypothesis that as time progresses, the health status outcome remains static and close around the mean. However, the results noted that the consistency in the standard deviation from the mean for each measure was less consistent in the ER than in the clinical office setting despite the month of enrollment. This may relate to the more extreme conditions presented in the emergency room at the time of the visit in comparison to those conditions presented at the time of the physician office visit.

Interpretation of Findings for RQ1 and RQ2

The results of the study data appear to support the theories that accessibility increases with the provision of health insurance. Out of 5,300 total visits made by the

712 patients in the study, 11% of service visits occurred prior to enrollment and 89% post enrollment. With post enrollment visits, nearly 9.25 times more frequent than pre enrollment, indicates a compelling increase in accessibility. However, the results for RQ1 and RQ2 that health outcomes do not improve with enrollment in a PSHI MCO appear to run counter to the theories' expectations.

These results were surprising because the insurance access theory; access, equity, and health outcome interrelationship theory; health affordability theory; and financial and resource burden theory suggests that with provision of health insurance, access to providers increase leading to health outcomes that subsequently improve (Holahan & Cook, 2005; Collins et al., 2004; Schoen et al., 2006; Taylor et al., 2006). The theories assumed health improvement from the provision of health insurance. This assumption was in concert with CEA (2009) supporting the proposal of PPACA. Although not a research question, the study showed a notably large increase in service visits following provision of insurance in all service locations. This observation is consistent with the theories' findings designated above. However, accessibility, along with socio-economic status (SES) including factors of education, economic resources (including health insurance), family income, and employment theoretically translate to maintenance of individual health and amelioration of risk factors (Kim & Richardson, 2012). While the provision of health insurance alone is one factor, as Kim and Richardson (2012) point out, it is not the only factor contributing toward health status improvement.

The theories used in the study did not focus on a particular disease type and referred generally toward the prevention of chronic diseases such as diabetes. Diabetes is a serious chronic disease involving genetic predisposition and behavioral factors that may increase the risk of onset (ADA, 2010e). Once afflicted, diabetes is incurable. It is manageable through diet, exercise, medication, and education of the risk factors exacerbating the progression of the disease. Diabetics are also more susceptible to colds and influenza than are non-diabetics. Complicating co-morbid conditions in addition to wound healing from injuries also afflict the diabetic more so than non-diabetic individuals.

Consequently, the health status for diabetics is consistently at-risk poor. Thus, health status of chronic or non-chronic disease where conditions and health status can cure or show favorable improvement for pre and post enrollment is important to understand prior to concluding that health insurance has no impact on health status. Although no specific study could be located to address this phenomenon, Carrier, Yee, and Garfield (2011) found in a study of the uninsured in the United States that health status of the uninsured fluctuated insignificantly between 2003 and 2007 although more adults were uninsured in this period than prior (p. 5). Since diabetes is incurable, and its presence causes health to be at risk for individuals, perhaps the maintenance of the disease over time is the most that one can expect.

Another surprising finding was the discernible lack of emergency room visits. From the patient population of 712 with 3,997 visits to hospital service locations including the emergency room, only 14% of visits for pre and post enrollment were emergency room. The data analysis shows a preference for service location of physician office as the predominant distribution in this variable with a very small number of ER visits compared to the clinic and non-ER hospital locations. The additional 1303 physician office visits in the D_2 data drops the percentage of emergency room visits for all 5,300 visits from 14% to 11%. This indicates a pronounced preference of service location away from the emergency room and in the hospital physician clinic. The frequency distribution by medical visit location relates specifically to the financial and resource burden theory (Taylor, Cunningham, & McKenzie, 2006). This theory purports that privately sponsored community efforts can relieve a significant financial burden from the community safety nets and public financing. As indicated in the literature review, health safety net managed care organizations (HSN MCO), such as the EPCHD PSHI and those studied by Brown and Stevens (2006); Taylor et al. (2006), Silversmith (2010), Livingston (2010), Cantor et al. (2007), and Hernandez et al. (2009), suggests cost savings by moving service location. According to the literature, a primary reason for establishing a HSN MCO is the reduction in cost by moving treatment location from an expensive ER to a clinical physician office location.

The data findings here indicate that ER visits comprised only 6.4% of pre-enrollment visits while hospital clinic visits comprised 68.7%. While the frequency of all visits increased considerably post enrollment, ER visits increased to 15% post enrollment and hospital clinic visits dropped to 62%. In fact, out of total ER cases, only 4% were pre-enrollment and 96% were post enrollment. These data suggest that the patients' choice of treatment location and the providers' accessibility leaned toward the ER considerably more post enrollment than Taylor et al. (2006) advanced. The reasons for this may be the patients' perception of the emergency room as expensive with long waiting times, rather than a location where the provider, due to legal EMTALA considerations, cannot refuse treatment. Another possibility contained in the theories is how the uninsured delay or forego medical treatment. While pre enrolled, patients may consider a visit for some co-morbid conditions to be personally manageable to avoid access and affordability issues, especially for low-income families. The patients' perceptions may be that visiting the emergency room is necessary only for extreme situations.

As presented in Chapter 2, there are two PSHI plans that specifically target low income and working uninsured like the EPCHD PSHI MCO, Carelink in San Antonio, TX, and the San Francisco Health Plan (SFHP) in California. All three PSHI organizations promote health outcome improvement through accessibility and affordability through the direction of enrollees to lower cost providers outside of the emergency room (Bindman et al., 2009; Hernandez et al., 2009). After 9 years of operation, Carelink reduced cost of care in several ways, one of which was through the diversion of patients from the emergency room to primary care (Bindman et al., 2009; Hernandez et al., 2009). Carelink also asserted improved health outcomes through a reduction in emergency room visits. As mentioned in Chapter 2, studies such as Dusheiko et al. (2010) have shown primary care practices with quality programs for diabetes care reduced emergency admissions for short-term complications associated with the disease. Dusheiko et al. (2010) suggested that provision of HSN MCO for the previously uninsured results in improved health outcomes for a predominantly Hispanic low-income population.

Like Carelink, SFHP developed from the local and state health district's concern for the uninsured population health and access (Bindman et al., 2009). The goal of the program is to provide health insurance to the previously uninsured and help support the community HSN. Most of the program goals and vehicles to achieve those goals are similar. Bindman et al. (2009) measured improved medical outcomes and cost savings primarily on reduced specialty physician referral from the use of the E-Referral system but did not quantify health status outcomes of SFHP participants to any reasonable extent. Overall, further study of the assertions of the three PSHI plans to improve health outcomes and reduce emergency room visits to subsequently reduce costs will contribute to more comprehensive findings. Confirmation or contradiction of these results by replicating these terms in other populations and over more time has a significant bearing on the future of PSHI in terms of design and provision of health care services in varying locations.

Recommendations for Action

The PSHI plans demonstrate how established public MCOs from local, state, and federal support, in any combination, can form the foundation for health insurance plans to fit local medical needs of the uninsured. In addition, the literature suggests these plans are most successful when their designs involve many forms of patient financial and medical decision-making participation. For instance, Carelink establishes a patient medical home; SFHP and EPCHD encourage management of care through the direction of patients to primary care physicians. While this study found no improved health outcomes for chronic disease care for diabetes, the study did not measure quality of care according to frequency of comorbid conditions related to diabetes but was limited to overall health status maintained over a maximum 36 months. Zhang et al. (2009) suggested that using the Quality Assurance Health Plan Employer Data and Information Set (HEDIS) for health care quality adds another more specific dimension to the health status of diabetic patients. Zhang et al. (2009) found that the uninsured or with Medicaid were "least likely to meet quality of care measures" (p. 742). In addition, this study did not review health outcomes of those that did not enroll in a PSHI when offered. Consequently, the study suggests the following actions to improve PSHI programs funded nationally, by state, or locally:

1. Establish a measure of health outcome or status based on disease type. The health status of a cancer patient varies from a diabetic, which varies from schizophrenic. Health associations such as the AMA, AHA, CDC, CMS, and others should collaborate on this measure to establish direction toward this goal with ongoing efforts to control spending;
2. Establish measures of health outcome or quality of care based on health status at-risk, disease prevention as well as health maintenance. Motivation for PSHI and other insurance and point of care vehicles center on lowering cost of care through health maintenance and disease prevention (Collins et al., 2004; Holahan & Cook, 2005; Ross et al., 2006; Schoen et al., 2006; Taylor et al., 2006).
3. PSHIs adeptly account for general expenses and revenues but do not appear to measure the need or desire for health insurance among the uninsured or the

reason why one low-income uninsured family may accept health insurance while another may not. The implementation of electronic health records nationwide and the development of health information exchanges will lead to specific data for health plan design. In this way, a publicly sponsored health care plan for those unable to afford health insurance may participate in one that specifically pertains to prevention, maintenance, or afflicted care. PSHI availability, as a comprehensive insurance policy including hospitalization for major medical events, begs the question on whether the uninsured require health risk insurance or a disease care or preventive office outpatient plan with specific monitoring, laboratory procedures, and patient education. Proper health maintenance with diabetes requires labs and frequent visits with educational time, while risks for automobile/home accidents, colds or influenza may not require the same degree of third party financial and care management or health risk coverage. Therefore, PSHI policies should consider a menu of care as well as the risk of major medical care to include hospitalization. This action may provide improved cost effectiveness in benefit design and maximize the clinical benefit for those most affected or disease afflicted.

4. The study showed that care in the emergency room resulted in the same health status outcomes as those in a physician office. While this result is certainly in line for further research and scrutiny, health safety net (HSN) design should include diversion of non-emergent patients arriving at the ER

for care to clinical care in the same location and time as the visit. Since the costs of emergency care presumably increase the cost of care overall, diversion of patients to a lower cost setting as opposed to a later appointment where the patient may not return, appears to be worth considering;

5. The data analysis shows that the correlation between health insurance and health status is very weak while the observation of health visit frequency is very strong. The presumption that a higher visit frequency leads to healthier outcomes than non-frequent becomes questionable for this population (Mexican-Americans, diabetics). Although provision of health insurance is one form of inscribing accessibility, it also provides a layer of cost that may not be necessary if physician office clinics provided an out-of-pocket cost alternative. In other words, if an HSN provided a low cost clinic center where patients could see a doctor or establish a medical home at an affordable price, the costs of the center may be less than the costs of providing a PSHI alternative. Through collaboration with FQHC community clinics and other non-profit and for-profit health centers, HSN subsidization of health care operations for the uninsured together with the insured, may result in the same outcomes and accessibility at a lower cost to the working uninsured.

Many large uninsured communities in the United States needing a vehicle for health services have developed programs such as PSHI to provide equal opportunity for care. The purpose of equal opportunity care is to provide equal opportunity for healthy outcomes. Current research presumes the health outcomes of the uninsured are less so by their behavior to delay or forego medical treatment. This study found that health outcomes do not improve for the uninsured after the provision of health insurance, controlling for affordability and accessibility. The recommended actions above apply to those factors believed to contribute to the lack of health outcome success.

Implications for Social Change

Chapter 1 introduced the social change implications for this study by showing that the federal health services policies under the Obama administration reflect significant social change potential. Chapter 2 indicated that the literature reflects compelling health service issues affecting the uninsured (DeNavas-Walt, Proctor, & Smith, 2008; Davis et al., 2007; Heymann, Nunez, & Talavera, 2009; Kaiser, 2007). Prevailing theories suggested that the lack of health insurance detrimentally influences public health by leading to poor health outcomes.

The Obama administration and Congress, in proposing and passing the Patient Protection and Affordable Care Act (H.R. 3590, P.L 111-148) (PPACA), combined with a separate reconciliation bill (H.R. 4872) intended to expand health care coverage to 32 million uninsured Americans by 2019. The United States government desired that PPACA lead to societal cost reductions for PSHI, accessible care for all citizens and equal opportunity for improved health outcomes (CEA, 2009; Marquez, Mitchell, & Crytzer, 2010). The United States government, therefore, attempted positive social change by providing mandatory health insurance (by 2014) to the uninsured through federal policy and legislation. This study contributed to positive social change by examining one of the core principles behind the PPACA 2010 legislation: that mandating health insurance coverage ameliorates the detrimental effects for the uninsured. While the scope of this study was limited to the correlation between health outcomes and health insurance and found little or no relationship, the social impact is nonetheless, relevant.

The Chapter 1 background section showed that the health care system historically developed fragmentally and in a fashion less social than market in the 19th and 20th centuries. The market approach led to compelling developments in technology, methods, literature, and skills. While economic cycles, the aging population, the results of military conflicts and legislative corrections to issues developing in federal health programs, led to a gap in those who receive care and those who may not. The factors affecting those who may not receive care centered on issues of affordability and accessibility. Thus, health insurance became the primary tool for addressing these factors and the uninsured became the focus of social change in health services.

While this study found affordability and accessibility factors well addressed in PSHI, the health outcome relationship to having health insurance found to be weak. Thus, the recommendations for actions above may help to strengthen the relationship between the provision of PSHI and health outcomes by redefining PSHI to a Public Sponsored Health Plan (PSHP). The difference is that insurance provides resources for the risks related to the possibility without the presence of contributory indications, that one may become ill and require expensive care, while a plan assumes that high risk of illness or disease or the presence of which may mitigate the untreated results. Consequently, the results and recommendations for action change the notion of health insurance as the primary tool to health insurance as one tool for its sole purpose of mitigated risk in case of affliction or accident. For primary and preventive care as well as affliction of chronic disease involving non-hospital required care, the study indicates implementation of a medical home such as the one developed by Carelink. The plan involves a prescribed course of treatment carried out by a physician or primary care provider directed toward a planned and documented health outcome that includes the patient behavioral participation for the factors under their control and choice.

The apparent social change implication begins to change the methods for provision and payment of health, disease, accident, and sick care in the United States. The PPACA law remains a significant piece of social change legislation, paving the road for electronic health records, accountable care organizations, payment for health outcomes, and efficient health information exchange among providers and researchers. PPACA facilitates the recommendations for action so that health service leaders, providers, and patients can define health status, calculate the cost of care, establish the navigation of patients to an appropriate care setting, and strengthen the relationship between health outcomes and the health plan.

Recommendations for Further Research

This study raised additional questions from its findings, which lead to recommendations for further research. Issues related to the health-status measurement tool, population ethnicity, personal behavior choices, self-perceived health status, and other socio-economic considerations top the list of factors that affect health outcomes and its relationship to the provision of health insurance. Consequently, the recommendations for further research are as follows:

1. As explained in Chapter 3, the health-status measurement tool employed in the data analysis derived from the level of health status determination resulting from a weighted scoring of risk assessment as shown in Appendix D. A diabetic person's health status varies quantitatively by the results measured from vital statistics, laboratory test results, and diagnosis at the time of the person's examination. The combination of examination data determines a person's health status so that a provider can determine health outcomes from a course of treatment. If, for instance, a patient's health status does not improve, a physician may determine that a different course of treatment is necessary to take the risk of disease progression to a minimum. The medical history variable health status score was not available in any existing model. These scores were therefore determined using clinical decision rationale to purposively aid in the interpretation of meaningful results (Lange & Piette, 2004; Levy & Wolf, 2010; M. Romano, personal communication, December 2, 2010; Miller, Reardon, & Safi, 2001; T. Bright, personal communication, January 6, 2011). Further testing and expansion of the health status matrix for diabetes in addition to other chronic disease will prove to be useful for measurement in other studies for measuring health outcomes;
2. The Mexican-American population along the United States-Mexico border is predominantly uninsured but also possesses some cultural characteristics from

Mexico. The population of El Paso, TX, is over 26.3% foreign born (ACS, 2008; Boda, 2007). Mexican Americans, as shown in Chapter 3, is the largest ethnicity of overall Hispanics in the United States and compose the largest portion of the uninsured population in the United States (Table 1). As explained earlier in Chapter 5, one reason for Hispanic health disparities is the condition of uninsurance. Vega et al. (2009) posited that Hispanics have high rates of uninsured because employers of Hispanics do not offer employer sponsored health insurance (ESHI) or individuals feel they do not need it because they feel healthy and insurance policies changed, offering fewer benefits and higher amounts of cost share with the patients (p. 107). While significant research found these results, other social determinants such as the cross-border availability of health providers and the health quality measures for those receiving this care or other self-administered care is desirable to determine these contributions toward health status results.

3. For the purposes of this study, self-perceived health status was irrelevant to determining the extent to which health outcomes relate to health insurance provision. The medical data were important to a first study of this nature to receive a clinically derived outcome as opposed to how a patient felt about it. However, the self-perception of one’s health likely influences an individual’s choice to purchase or receive health insurance. The use of that health insurance to obtain care may also factor in to the choice of seeing a provider, whom the provider should be and at what service location. Thus, self-

perceived health status and perceptions of the uninsured individuals in the community related to access and affordability have relevance to health outcomes measurement to enhance the clinical result.

4. Diabetes is an incurable chronic disease that potentially debilitates or maintains a level of productive health depending on the medical care received and the patients' personal habits and health-related behaviors. Study replication with other chronic disease types such as rheumatoid arthritis, certain types of cancers, psychiatric conditions, and with those with no chronic conditions leads to new dimensions in the relationship between the health insurance/ health plans and health outcomes. Further research can affirm the recommendations for action or further refine them leading to positive social change.

With no prior studies that show the correlative strength of health insurance with health outcomes and the distinct lack of literature on measurement of health status from a clinical data matrix, these four areas of further research push the envelope on this important topic. In addition, the recommendations for actions and further research, taken together, assists in the body of knowledge necessary to determine public policy and administration of health services in this timely and critical arena.

Conclusion

Health services, as it relates to public policy and administration, not to mention politics and public finance, strikes a vibrant chord in all Americans. Health care is expensive, and when one is afflicted with disease or accident, navigation of where to go and whom to see for a variety of conditions becomes confusing and difficult to navigate (Feldstein, 2006; Taylor et al., 2006). As a result, the fragmented health care system in the United States makes it difficult for the individual patient to understand and afford.

Chapter 1 introduced the United States' health care system as an evolution of market control and sovereignty (Starr, 1982). Even medical education appeared competitive and initially diluted with teaching of various sorts of health folklore and beliefs such as bone healing and herbal remedies. The 19th century town health talent gave rise to students as apprentice to an experienced provider (Rothstein, 1987). The 20th century witnessed the rise of academic health centers providing education, practice, and technological advancement in research and care. The needs of post World War I veterans inspired the United States government to provide health care to the millions wounded and disabled overseas and returning home. World War II provided the opportunity to cooperate internationally and collaborate on best practice health care for the nation (Rothstein, 1987; Starr, 1982). This is the point in United States history where the fork in the road appeared to point toward social medicine or split toward market medicine. The philosophical aversion of the United States toward the Soviet socialist model, despite the British preference for its approach toward social medicine, brought the United States toward market medicine consistent with its capitalistic approach toward most industry. Presidential administrations from Wilson to Obama attempted to correct disparities in accessible care and the supply of providers arising from the market approach (Barton, 2006; Feldstein, 2006; Longest, 2006).

The vast majority of United States legislation from 1968 through 2008, after the passing of monumental Medicare and Medicaid entitlement legislation, addressed the financing of health care services to various groups unaffected by the Social Security legislation of 1965 (Wagner, 2007). United States governments, federal and state, primarily governed by regulating and subsidizing the consumer to receive medical care in a variety of circumstances primarily through insurance vehicles. As federal, state, and local governments failed to produce national consistency and cohesive policies, piecemeal federal health legislation provided affordable access for disparate and disadvantaged groups. This legislation allowed Congress to avoid collaborative failure for more comprehensive solutions among associations and provider groups. As a result, a diverse and significant gap of uninsured individuals emerged amounting to over 17% of the total population in 2011 (Carrier, Yee, & Garfield, 2011). The uninsured faced three important concerns:

1. Less medical care and more health problems than the general population.
2. Disproportionately accumulating medical debt and risk exposure to personal bankruptcy.
3. Delayed or unsought medical treatment leading to a higher rate of serious illness and avoidable health problems (The Kaiser Commission, 2000).

Therefore, the Patient Protection and Affordable Care Act (PPACA) 2010 formed the pinnacle of unified legislation to coalesce the fragmented legislation of the past. PPACA theoretically provides re-determination of the value for health care services in the future, collaborative incentives for disparate providers to cooperate for defined medical outcomes with patients' participation and provide portability of health information for care, research, and education (KFF, 2011). Yet PPACA mandates health insurance coverage as a tool to control costs and the payment by the public domain to providers for the value of health services to all patients.

The results of this study demonstrated specific health outcomes related to the provision of health insurance, adding to the body of knowledge on the effects of providing insurance to the uninsured. Major legislation appeared to occur with little definitive evidence to affirm that health insurance, as a primary vehicle for managing costs and care, achieves the desired results without considering continuous short-term changes and fixes that plagued the health system and Congress for the last 40 years. In a way, Congress put its faith in theories that appeared logical and the policy enactment window was closing in 2010.

This research study discovered that insurance alone, while increasing accessibility, does not necessarily improve health outcomes for the chronic disease population studied. The importance of this finding for developing health services policy on a federal, state, and local level relates to refining the global approach of mandating health insurance for everyone by recommendations for actions:

1. Develop a refined health status matrix tool to help the consumer determine their health progress and assist researchers in affirming health outcomes.
2. Determine health disparities, diseases, and complications affecting local communities for specific design of health plans versus overall health risk insurance.

3. Consider the cost of insurance versus the cost of care center design that may provide health services for the predominant health issues in a community.
4. Collaborate with FQHC community clinics and other not and for-profit health centers, HSN subsidization of health care operations for the uninsured may result in the same outcomes and accessibility at a lower cost to the working uninsured.

PPACA is a broad mandate for the entire country. These recommendations, necessarily directed to local PSHI, may not meet compliance for PPACA laws. As a result, PPACA compliance, without local community adherence through custom local programs, may lead to exception and fragmented legislation to begin anew. While health insurance coverage may reduce or nearly eliminate the number of uninsured, without an outcome expectation or a health care plan, disparities may remain.

This study did not determine the self- perceived health status of the participants. While the clinical health status indicators show one type of health status measure, the self-perceived health status may show another, simply for the accessible care achieved by the provision of health insurance (Eisenberg & Kaptchuk, 2002). In addition, further research still looms on the horizon to determine the participants' reasons for choices regarding location of service, type of provider, and the differences between decisions prior to and post enrollment in the PSHI. These factors may indicate a different correlative strength between health status and health insurance enrollment. However, this research may not yield any differences in the recommendations for actions since the clinical indicators provide long term and sustainable health status.

Overall, the evolution of health insurance from a risk mitigation tool to management and finance vehicle for the vast majority of Americans presented problems of accessibility and affordability for those who did not possess it. Yet, without appropriate quantitative measurement of those problems and the extent to which these problems relate to public policy and legislative actions down to the local level, the United States government is providing legislative solutions that may result in community ineffectiveness. Public policy and legislation refines according to paths toward progress and further research. This study hopes to make a single step forward in that path toward progress and contribute positive social change in the long-term health and well-being of all citizens in the United States.

References

Abrahams, D. (n.d.). Pre-experimental designs and their meaning. Retrieved from http://www.socialresearchmethods.net/tutorial/Abrahams/preex.htm.

Aizer, A., Currie, J., & Moretti, E. (2007). Does managed care hurt health? Evidence from Medicaid mothers. *Review of Economics and Statistics, 89*(3) 385-399.

Alonso-Zaldivar, R. (2009, July 8). White House, hospitals reach deal on health care. 8 July 2009 *American Family News Network.* Retrieved from http://www.onenewsnow.com/Headlines/Default.aspx?id=596394.

Altman, S. H., Reinhardt, U. E., & Shields, A .E. (1998). *The future U.S. healthcare system: Who will care for the poor and uninsured?* Health Administration Press Chicago, IL.

American Community Survey (ACS) (2008). Fact sheet. El Paso Texas U.S. Census Bureau 2006-2008 Fact Finder http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=, &ActiveGeoDiv=geoSelect, &pctxt=fph, &_lang=en, &_sse=on, &geo_id=16000US4824000, &_state=04000US48.

American Diabetes Association. (ADA) (2010a). All about cholesterol. Retrieved from http://www.Diabetes.org/Diabetes-basics/prevention/checkup-america/cholesterol.html.

American Diabetes Association (ADA) (2010b). High blood pressure. Retrieved from http://www.Diabetes.org/Diabetes-basics/prevention/checkup-america/bloodpressure.html.

American Diabetes Association (ADA) (2010c). Know your risk. Retrieved from http://www.Diabetes.org/Diabetes-basics/prevention/checkup-america/cua.html.

American Diabetes Association (ADA) (2010d). Complications of diabetes. Retrieved from http://www.Diabetes.org/living-with-Diabetes/complications/.

American Diabetes Association (ADA) (2010e). Diabetes statistics. Retrieved from http://www.Diabetes.org/Diabetes-basics/Diabetes-statistics/.

American Diabetes Association (ADA) (2010f). Health insurance options. Retrieved from http://www.Diabetes.org/living-with-Diabetes/treatment-and-care/health-insurance-options/.

American Diabetes Association (ADA) (2010g). Type 1 diabetes. Retrieved from http://www.Diabetes.org/Diabetes-basics/type-1/.

American Diabetes Association (ADA) (2010h). Type 2 diabetes. Retrieved from http://www.Diabetes.org/Diabetes-basics/type-2/.

Babbie, E. (2010). *The practice of social research (*12th ed.). Belmont, CA: Wadsworth Cengage Learning.

Barton, P. L. (2007). *Understanding the U.S. health services system* (3rd ed.). Chicago, IL: Health Administration Press.

Begley, C., Agrawal, A., & Draper, H. (2005). Appendix D: Local initiatives to expand care and coverage of the uninsured. *Center for Health Services; Research School of Public Health; University of Texas Health Science Center – Houston. Retrieved from* http://www.coderedtexas.org/files/appendix_D.pdf.

Behan, D.F., Cox, S. H., Lin, Y., Pai, J., Pedersen, H. W., & Yi, M. (2010). Obesity and its relation to mortality and morbidity costs. *Actuaries* . Retrieved from http://www.soa.org/files/pdf/research-20110obesity-relation-mortality.pdf

Betancourt J. R. (2006). Eliminating racial and ethnic disparities in health care: what is the role of academic medicine? *Academic Medicine: Journal of the Association of American Medical Colleges, 81*(9), 788-792.

Bindman, A. B., Chen, A. Fraser, J. S., Yee, H.F., & Ofman, D. (2009). Healthcare reform with a safety net: Lessons from San Francisco. *American Journal of Managed Care, 15*(10) 747-750.

Blewett, L.A., Ziegenfuss, J., & Davern, M.E. (2008). Local access to care programs (LACPs): New developments in the access to care for the uninsured. *The Milbank Quarterly, 86*(3) 459-479.

Boda, P. J. (2007). International trade of health care: The case of El Paso -- Ciudad Juarez. PhD dissertation, University of Minnesota, United States – Minnesota Retrieved June 4, 2009, from Dissertations, & Theses: Full Text database (Publication No. AAT 3289166).

Bovbjerg, R. R., & Ullman, F. C. (2001). Health insurance and health access: Reengineering local safety nets. *Journal of Legal Medicine, 22*(n.d) 247-262.

Brown, L. D., & Stevens, B. (2006). Charge of the right brigade? Communities, coverage and care for the uninsured. *Health Affairs 11*(n.d.) w150-w161. doi:10.1377/hlthaff.25.

Cantor, J.C., Belloff, D., Schoen, C., How, S. K. H., & McCarthy, D. (2007). Aiming higher: Results from a state scorecard on health system performance. *Commonwealth Fund.* Retrieved from http://www.commonwealthfund.org/Content/Publications/Fund-Reports/2007/Jun/Aiming-Higher--Results-from-a-State-Scorecard-on-Health-System-Performance.aspx.

Carrier, E., Yee, T., & Garfield, R. L. (2011). The uninsured and their health care needs: How have they changed since the recession? *Kaiser Commission on Medicaid and the Uninsured.* Retrieved from http://www.kff.org/uninsured/upload/8246.pdf.

Carroll, J. (2007, February 28). Healthcare edges up in public's list of priorities. *Gallup News Service.* Retrieved from http://www.galluppoll.com.

Centers for Disease Control and Prevention (CDC). (2010). Older, more diverse population and longer life spans contribute to increase. *Online Press Release 22.* Retrieved from http://www.cdc.gov/media/pressrel/2010/r101022.html.

Centers for Disease Control and Prevention (CDC). (2011, January 14). CDC health disparities and inequalities report United States 2011. *Morbidity and Mortality Weekly Report* Supplement (60).

Centers for Medicare and Medicaid Services (CMS). (2010). National health expenditure data. Retrieved from http://www.cms.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage.

Cohen, R.A., & Martinez, M.E. (2010). Health insurance coverage: Early release of estimates from the national health survey, January – March 2010. *Centers for Disease Control and Prevention.* Retrieved from http://www.cdc.gov/inchs/data/nhis/earlyrelease/insur2010.pdf.

Collaborative Institutional Training Initiative (CITI) (2010). Module 3: fundamental issues. Retrieved from https://www.citiprogram.org/members/learnersII/moduletext.asp?strKeyID=A4955DD2-52C0-424B-A62C-BF1D5828EE76-7884371, &module=938.

Collins, S. R., Doty, M.M., Davis K., Schoen, C., Holmgren, A. L., & Ho, A. (2004). The affordability crisis in U.S. health care: Findings from the Commonwealth Fund Biennial Health Insurance Survey. Retrieved from http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2004/Mar/The%20Affordability%20Crisis%20in%20U%20S%20%20Health%20Care%20%20Findings%20from%20the%20Commonwealth%20Fund%20Biennial%20Health%20In/collins_biennial2003_723%20pdf.pdf.

Combs, S. (2009). Window on state government: Texas in focus: Upper Rio Grande. *Texas Comptroller of Public Accounts.* Retrieved from http://www.window.state.TXus/specialrpt/tif/urgrande/healthcare.php.

Cook, N. L., Hicks, L. S., O'Malley, J., Keegan, T., Guadagnoll, E. & Landon, B. E. (2007). Access to specialty care and medical services in community health centers. *Health Affairs 26*(5) 1459-1468

Creswell, J. W. (2007). *Qualitative inquiry & research design* (*2nd ed.*). Thousand Oaks, CA; Sage Publications.

Cunningham, P. J., Bazzoli, J., & Katz, A. (2008). Caught in the competitive crossfire: Safety-net providers balance margin and mission in a profit-driven health care market. *Health Affairs 27*(5) w374 - w382. doi:10.1377/hlthaff.27.5.w374.

Cunningham, P., & Hadley, J. (2004). Expanding care versus expanding coverage: How to improve access to care. *Health Affairs. 23*(4) 234-244.

Cunningham, P., & Hadley, J. (2008). Effects of changes in incomes and practice circumstances on physicians' decisions to treat charity and Medicaid patients. *The Milbank Quarterly. 86*(1) 91-123.

Current Procedural Terminology (CPT). (2009). *Mosby's Medical Dictionary (8th ed.).* Retrieved from http://medical-dictionary.thefreedictionary.com/CPT.

Davis, K., Schoen, C., Schoenbaum, S.C., Doty, M.M., Holmgren, A.L., Kriss, J.L., & Shea, K.K. (2007). Mirror, mirror on the wall: An international update on the comparative performance of American health care. *Commonwealth Fund.* Retrieved from *www.commonwealthfund.org.* Commonwealth Fund Publication No. 1027.

DecisionHealth (2009). *International classification of diseases 9th revision clinical modification ICD-9-CM for physicians.* Salt Lake City, UT; Contexo Media.

DeNavas-Walt, C., Proctor, B. D., Smith, J. (2007). Income, poverty, and health insurance coverage in the United States: 2006. *Current Population Reports.* Washington, DC; U.S. Census Bureau Government Printing Office.

DeNavas-Walt, C., Proctor, B. D., Smith, J. (2008). Income, poverty, and health insurance coverage in the United States: 2007. *Current Population Reports.* Washington, DC; U.S. Census Bureau Government Printing Office.

Diagnosis (n.d.). *Dictionary.com Unabridged*. Retrieved from www.dictionary.com website: http://dictionary.reference.com/browse/diagnosis.

Dimitrov, D. M., & Rumrill, P. D. (2003). Pretest-posttest designs and measurement of change. *Speaking of Research IOS Press* 2003. Retrieved from http://cehd.gmu.edu/assets/docs/faculty_publications/dimitrov/file5.pdf.

Diagnosis Related Groups (DRG). (2008). Retrieved from http://health.utah.gov/opha/IBIShelp/codes/DRGCode.htm.

Droumaguet, C. (2006). American Diabetes Association "A1C test". *Diabetes Care.* Retrieved from http://Diabetes.webmd.com/guide/glycated-hemoglobin-test-hba1c.

Dusheiko, M., Doran, T., Gravelle, H., Fullwood, C., & Roland, M. (2010). Does higher quality of diabetes management in family practice reduce unplanned hospital admissions? Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01184.x/pdf.

Eisenberg, D. M., & Kaptchuk, T.J. (2002). The placebo effect in alternative medicine: Can the performance of a healing ritual have clinical significance. *Annals of Internal Medicine. 136*(11) 817-825.

Eisert, S. L., Mehler, P.S., & Gabow, P.A. (2008). Can America's urban safety net systems be a solution to unequal treatment? *Journal of Urban Health* 2008 DOI 10.1007/s11524-008-9296-5 85(5) pp. 766-778

El Paso First HealthCARE Options Member Handbook (HCO). (2010). *HealthCARE Options*. Retrieved from http://www.epfirst.com/HealthcareOptions.html.

Escobedo, L. G., & Cardenas, V.M. (2006). Utilization and purchase of medical care services in Mexico by residents of the United States of America, 1998–1999. Retrieved from http://journal.paho.org/uploads/1149879018.pdf. Rev Panam Salud Publica 2006; *19*(5) 300–305

Executive Office of the President Council of Economic Advisors (CEA) (2009) The economic case for health care reform. Retrieved from http://www.whitehouse.gov/administration/eop/cea/TheEconomicCaseforHealthCareReform/.

Fagan, P. J., Schuster, A. B., Boyd, C., Marsteller, J. A., Griswold, M., Murphy, S. M. E., Forrest, C. B. (2010). Chronic care improvement in primary care: Evaluation of an integrated pay-for-performance and practice-based care coordination program among elderly patients with diabetes. *HSR Health Services Research.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01166.x/pdf.

Fielding, J. E., Tilson, H.H., & Richland, J. H. (2008). Medical care reform requires public health reform: Expanded role for public health agencies in improving health. Retrieved from http://thehill.com/wppdf/PfP_StrengtheningHealthAgencies.pdf.

Feldstein, P. J. (2006). *The politics of health legislation: An economic perspective* (*3rd Ed.*). Chicago, IL; Health Administration Press American, College of Healthcare Executives.

Foege, W.H. (2010). Social determinants of health and health-care solutions. *Public Health Reports. Supplement 4*(125) 8-10.

Foote, S.B., Virnig, B.A., Town, R.J., & Hartman, L. (2008). The impact of Medicare coverage policies on health care utilization. *HSR: Health Services Research. 43*(4) 1285-1301.

Fraze, T., Jiang, J. H., & Burgess, J. (2010). Hospital stays for patients with diabetes 2008. *Healthcare Cost and Utilization Project. Retrieved from* www.hcup-us.ahrq.gov. Agency for Healthcare Quality and Research (AHRQ) statistical brief #93.

Fuchs, V. R. (1998). *Who shall live? Health, economics, and social choice.* Hackensack, NJ; World Scientific.

Furrow, B. R. (2010). Patient safety and the PPACA: Regulatory torrents and system liability. *The Earle Mack School of Law at Drexel University.* Retrieved from http://www.tseed.com/aslme/conference/forSystemUse/papers/064.pdf.

Gallup Organization (2005). Healthcare system. Retrieved from www.poll.gallup.com, website: http://poll.gallup.com/content/default.aspx?ci=20335, &pg=1.

Garber, K. (2009, June 24). Healthcare reform cost estimates have Democrats on defensive. Retrieved from http://www.usnews.com/articles/news/national/2009/06/24/healthcare-reform-cost-estimates-have-democrats-on-defensive.html.

Garson, D. (2009). Research designs. Retrieved from *www.ncsu.edu* website: http://faculty.chass.ncsu.edu/garson/PA765/design.htm.

Gazewood, J. D., Rollins, L.K., & Galazka, S. S. (2006). Beyond the horizon: The role of academic health centers in improving the health of rural communities. *Academic Medicine: Journal of the Association of American Medical Colleges 81* (9) 793-797.

Gill, N. S. (2011). New Comedy – Menander. Retrieved from http://ancienthistory.about.com/od/poetsplaywrightswriters/p/Menander.htm.

Gravelle, H. Morris, S., & Sutton, M. (2007). Are family physicians good for you? Endogenous doctor supply and individual health. *HSR: Health Services Research. 43*(4) 1128-1144

Gresenz, C.R., Rogowski, J., & Escarce, J.J. (2006). Health care markets, the safety net and utilization of care among the uninsured. *HSR: Health Services Research. 42*(1) 239-264.

Grogan, C.M., & Gusmano, M.K. (2008). Political strategies of safety-net providers in response to Medicaid managed care reforms. *Journal of Health Politics, Policy and Law. 34*(1) 5-35

Guadalupe, P. (2007, August 17). Healthcare costs, lack of money top list of financial concerns. *Gallup Poll News Service.* Retrieved from http://www.galluppoll.com.

Hadley, J., Holahan, J., Coughlin, T., & Miller, D. (2008). Covering the uninsured in 2008: Current costs, sources of payment and incremental costs. *Health Affairs-Web Exclusive. 27*(5) w399-w415. doi.10.1377/hlthaff.27.5.w399.

Hall, M.A. (2009). After insurance reform: An adequate safety net can bring us to universal coverage. *Hastings Center Report Policy , & Politics.* Retrieved from http://www.thehastingscenter.org/Publications/HCR/Detail.aspx?id=4120.

Hennig, C., Mullensiefen, D., & Bargmann, J. (2003). Comparison of changes in a pretest-posttest design with Likert scales. *Eidgenossicsche Technicshe Hochschule (ETH).* Retrieved from http://e-collection.ethbib.ethz.ch/eserv/eth:26465/eth-26465-01.pdf.

Hennig, C., Mullensiefen, D., & Bargmann, J. (2010). Within-subject comparison of changes in a pretest-posttest design. *Applied Psychological Measurement.* Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true, &_, &ERICExtSearch_SearchValue_0=EJ888937, &ERICExtSearch_SearchType_0=no, &accno=EJ888937. *34*(5) 291-309.

Henry J. Kaiser Family Foundation (KFF). (2011). Summary of new health reform law. *Focus on Health Reform.* Retrieved from http://www.kff.org/healthreform/upload/8061.pdf.

Hernandez, G.B., Fornos, L.B., Mika, V.S., Urbansky, K., & Villarreal, R. (2009). One regional health system's innovative steps to deal with the uninsured. *Journal of Healthcare Finance. 36*(1) 70-84.

Heymann, J.C., Nunez, G.G., & Talavera, V. (2009). Healthcare access and barriers for unauthorized immigrants in El Paso County, Texas. *Rural Community Health. 32*(1) 4-21.

Holahan, J., & Cook, A. (2005). Changes in economic conditions and health insurance *coverage* 2000-2004. Health Affairs-Web Exclusive. Retrieved from http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.498v1. doi 10.1377/hlthaff.W5.498.

Horvitz-Lennon, M., McGuire, T.G., Alegria, M., & Frank, R.G. (2009). Racial and ethnic disparities in the treatment of a Medicaid population with Schizophrenia. *HSR: Health Services Research.* doi: 10.1111/j.1475-6773.2009.01041.x. *44*(6) 2106-2122.

Huang, E. S., Zhang, Q., Brown, S.E.S., Drum, M.L., Meltzer, D.O., & Chin, M.H. (2007). The cost-effectiveness of improving diabetes care in U.S. federally qualified community health centers. *HSR: Health Services Research. 42*(6) 2174-2193.

Jones, G.E. (2010). Regulatory takings and emergency medical treatment. *San Diego Law Review.* Retrieved from http://lawlib.wlu.edu/CLJC/index.aspx?mainid=73, &issuedate=2010-05-8, &homepage=no. *47*(1) 145-184.

Kaiser Commission (2000). Uninsured in American key facts. *Kaiser Commission on Medicaid and the Uninsured.* Retrieved from http://www.kff.org/uninsured/loader.cfm?url=/commonspot/security/getfile.cfm, &PageID=13335.

Kaiser Commission on Medicaid and the Uninsured (Kaiser). (2007). *Health coverage for low-income Americans: An evidence-based approach to public policy.* Retrieved from http://www.kff.org/uninsured/upload/7476.pdf .

Katzer, J., Cook, K.H., & Crouch, W.W. (1998). *Evaluating information: A guide for users of social science research* (*4th ed.*). Boston, MA; McGraw Hill.

Kim, J., & Richardson, V. (2012). The impact of socioeconomic inequalities and lack of health insurance on physical functioning among middle-aged and older adults in the United States. *Health and Social Care in the Community. 20*(1) 42-51.

Knoke, D., Bohrnstedt, G. W., & Mee, A. P. (2002). *Statistics for social data analysis* (*4th ed.*) Belmont, CA; Wadsworth/Thomson Learning.

Kongstvedt, P. R. (2004). *Managed care: What it is and how it works* (*2nd ed.*) Sudbury MA; Jones and Bartlett Publishers.

Ku, L., & Broaddus, M. (2008). Public and private health insurance: Stacking up the costs. *Health Affairs-Web Exclusive. 27*(4) w318 - w327

Lange, L. J., & Piette, J.D. (2005). Perceived health status and perceived diabetes control: Psychological indicators and accuracy. *Journal of Psychosomatic Research. 58*(2) 129-137.

Lambrew, Jeanne M., Podesta, John D., & Shaw, Teresa L. (2005). Change in challenging times: a plan for extending and improving health coverage *Health Affairs-Web Exclusive*, 119-132.

Lave, J. R., Men, A., Day, B.T., Wang, W., & Zhang, Y. (2010). Employee choice of a high-deductible health plan across multiple employers. *HSR Health Services*

Research. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01167.x/pdf.

Livingston, G., Minushkin, S., & Cohn, D. (2008). Hispanics and health care in the United States: Access, information and knowledge. Retrieved from *http://pewhispanic.org/files/reports/91.pdf.* Washington, DC; PEW Hispanic Center.

Levit, K. R., Olin, G. L., & Letsch, S.W. (1992). American's health insurance coverage 1980-91. *Health Care Financing Review.* Retrieved from http://findarticles.com/p/articles/mi_m0795/is_n1_v14/ai_13501730/pg_4/?tag=content;col1.

Levy, D., & Wolf, P. A. (2010) Framingham heart study: A project of the National Heart, Lung and Blood Institute and Boston University. Retrieved from http://www.framinghamheartstudy.org/index.html.

Lewin, M.E., & Baxter, R.J. (2007). America's health care safety net: Revisiting the 2000 IOM report. *Health Affairs. 26*(5) 1490-1494.

Logie, L. A. (2008). An intersectional gaze at Latinidad, nation, gender and self-perceived health status. Ph.D. dissertation, University of Maryland, College Park, United States – Maryland. Retrieved from Dissertations & Theses: Full Text database (Publication No. AAT 3307882).

Longest, B. B. (2006). *Health policymaking in the United States* (*4th ed.*). Chicago, IL; Health Administration Press, The American College of Healthcare Executives.

Luft, H. S. (2007). Universal health coverage: A potential hybrid solution. *Journal of the American Medical Association. 297*(10) 1115-1118.

Maciosek, M. V., Coffield, A. B., Flottemesch, T.J., Edwards, N.M., & Solberg, L. I. (2010). Greater use of preventive services in U.S. health care could save lives at little or no cost. *Health Affairs.* Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=497E92C3FABBD551132C. *29*(9) 1656-1660.

Marquez, L., Mitchell, C., Crytzer, T. W. (2010). President signs health care bill, House and Senate approve budget reconciliation measure. *Washington Highlights.* Retrieved from http://www.aamc.org/advocacy/library/washhigh/2010/032610/start.htm#1.

Martin, B.C., Shi, L., & Ward, R.D. (2009). Financial performance and managed care trends of health centers. *Journal of Health Care Finance. 35*(3) 1-21.

McAdam-Marx, C., Field, R.I., Metraux, S. Moelter, S.T., & Brixner, D. I. (2010). Physician utilization by insurance type among youth with type 2 diabetes. *American Journal of Managed Care. 16*(1) 55 – 64.

McNabb, D. E. (2008). *Research methods in public administration and nonprofit management: Quantitative and qualitative approaches* (*2nd ed.*) Armonk, NY; ME Sharpe.

McWilliams, J. M., Meara, E., Zaslavsky, A.M., & Ayanian, J .Z. (2010). Assessing the health effects of Medicare coverage for previously uninsured adults: A matter of life and death? *HSR Health Services Research.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01085.x/pdf.

Medical Expenditure Panel Survey (MEPS). (2009). Download data files, documentation, and code books. Retrieved from http://www.meps.ahrq.gov/mpsweb/data_stats/download_data_files.jsp.

MedicineNet (2010). Health and medical information produced by doctors. Retrieved from *http://www.medicinenet.com/script/main/hp.asp*.

Miller, C.C. III, Reardon, M. J., & Safi, H.J. (2001). *Risk stratification: A practical guide for clinicians.* United Kingdom; Cambridge University Press.

Mortensen, K. (2010). Copayments did not reduce Medicaid enrollees' nonemergency use of emergency departments. *Health Affairs.* Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=44BC94CAB8123DBACB63. *29*(9) 1643-1650.

National Diabetes Information Clearinghouse (NDIC). (2011). National diabetes statistics 2011. Retrieved from http://diabetes.niddk.nih.gov/dm/pubs/statistics/#fast.

Patient Protection and Affordable Care Act of 2010 (PPACA). (2010). Patient protection and affordable care act of 2010. Retrieved from http://dpc.senate.gov/healthreformbill/healthbill53.pdf.

Pew Hispanic Center (PEW). (2002). U.S. born Hispanics increasingly drive population developments. *University of Southern California Annenberg School for Communication.* Retrieved from http://pewhispanic.org/files/factsheets/2.pdf.

Pitts, S.R., Carrier, E. R., Rich, E. C., & Kellermann, A. L. (2010). Where Americans get acute care: Increasingly, it's not at their doctor's office. *Health Affairs.* Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=40BBAB0145511C617C2D. *29*(9) 1620-1629.

Pronovost, P. J., & Goeschel, C.A. (2010). Viewing health care delivery as science: Challenges, benefits and policy implications. *HSR Health Services Research.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01144.x/pdf.

Retchin, S. M., Garland, S. L., & Anum, E. A. (2009). The transfer of uninsured patients from academic to community primary care settings. *The American Journal of Managed Care. 15*(4) 245-252.

Rice, T. (2002). *The economics of health reconsidered (2nd ed.).* Chicago, IL; Health Administration Press.

Roby, D. H., Kominski, G. F., Pourat, N. (2008). Assessing the barriers to engaging challenging populations in disease management programs: The Medicaid experience. *Disease Management and Health Outcomes. 16*(6) 421-428.

Ross, J., Bradley, E. H., & Busch, S. H. (2006). Use of health care services by lower-income and higher-income uninsured adults. *Journal of the American Medical Association.* doi: 10.1001/jama.295.17.2027). *295*(17) 2027-2036.

Rothstein, W. G. (1987). *American medical schools and the practice of medicine.* New York, NY; Oxford University Press Inc.

Rust, G., Baltrus, P., Ye, J., Daniels, E., Quarshie, A., Boumbulian, P., & Strothers, H. (2009). Presence of a community health center and uninsured emergency department visit rates in rural counties. *Journal of Rural Health. 25*(1) 8-16.

Schoen, C., Osborn, R., Trang Huynh, P., Doty, M., Peugh, J., & Zapert, K. (2006). On the front lines of care: Primary care doctors' office systems, experiences, and views in seven countries. *Health Affairs Web Exclusive.* w555 - w571.

Selvin, E. (2006). *Diabetes care.* Retrieved from http://Diabetes.webmd.com/guide/glycated-hemoglobin-test-hba1c.

Seymour, J. A. (2007, July 18). Health care lie: “47 million uninsured Americans” *Business and Media Institute.* Retrieved from http://www.businessandmedia.org/printer/2007/20070718153509.aspx.

Shields, A. E., McGinn-Shapiro, M., & Fronstin, P. (2008). Trends in private insurance, Medicaid/State Children’s Health Insurance Program, and the healthcare safety net: Implications for vulnerable populations and health disparities. *Annals of the New York Academy of Sciences.* Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/18579880.

Silversmith, J. (2010). The insurance safety net: Minnesota’s public and private programs. *Minnesota Medicine.* Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/18579880.

Simonet, D. (2007). Managed care in the U.S.A.: Origins, HMO strategies and the marketing of health services. *Journal of Public Affairs* 7(4) 357-371.

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (2008). *Unequal treatment: Confronting racial and ethnic disparities in health care.* Retrieved from www.nap.edu. Washington, DC; The National Academies Press.

Standard and Poor's (S&P). (2009). El Paso County Hospital District Texas: General obligation 16 September 2009. *Benchmarks, Research, Data Sets and Analytics.* Retrieved from http://www.standardandpoors.com/ratings/articles/en/us/?assetID=1245193607883.

Starr, P. (1982). *The social transformation of American medicine.* New York, NY; Basic Books USA

Steffes, M. (2005). *Clinical chemistry.* Retrieved from http://Diabetes.webmd.com/guide/glycated-hemoglobin-test-hba1c.

Stone, L.C., & Balderrama, C. H. (2008). Health inequalities among Latinos: What do we know and what can we do. *Health and Social Work.* *33*(1) 1-8.

Strayhorn, C. K. (2005). The uninsured: A hidden burden on Texas employers and communities. Retrieved from http://www.window.state.TXus/speacialrpt/uninsured05/.

Sultz, H. A., & Young, K. M. (2009) *Health care USA: Understanding its organization and delivery.* Boston, MA; Jones and Bartlett Publishers.

Taylor, E. F., Cunningham, P., & McKenzie, K. (2006). Community approaches to providing care for the uninsured. *Health Affairs – Web Exclusive. Doi* 10.1377/hlthaff.25.w173.

Texas Department of Insurance (2010). El Paso First Health Plans, Inc. Company Number: 28-95463. Retrieved from http://www.tdi.state.TXus/hmo/profiles/95463.html.

Thorson, M., Brock, J., Mitchell, J., & Lynn, J. (2010). Grand Junction, Colorado: How a community drew on its values to shape a superior health system. *Health Affairs.* Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=44C2B4CA8045130F84CE. *29*(9) 1678-1686.

Trochim, W. M. K., & Donnelly, J.P., (2007). *The research methods knowledge base* Mason OH; Thomson.

Valdivieso, R. (1990). Demographic trends of the Mexican-American population: Implications for schools. *ERIC Clearinghouse on Rural Education and Small Schools*. Retrieved from http://www.ericdigests.org/pre-9217/trends.htm.

Valdez, R. B., Giachello, A., Rodriguez-Trias, H., Gomez, P., & De La Rocha, C. (1993). Improving access to healthcare in Latino communities. *Public Health Reports.* *108*(5) 534-539.

Vaughan-Sarrazin, M.S., Campbell, M.E., Richardson, K.K., & Rosenthal, G. E. (2009). Racial segregation and disparities in health care delivery: Conceptual model and empirical assessment. *HSR: Health Services Research.* doi:10-1111/j.1475-6773.2009.00977.x. *44*(4) 1424-1444.

Vega, W.A., Rodriguez, M.A., & Gruskin, E. (2009). Health disparities in the Latino population. *Epidemiologic Reviews.* Baltimore, MD; Johns Hopkins Bloomberg School of Public Health. *31* 99-112.

Wagner, S. (2006). Literature review and critical thinking. *Walden University.* Minneapolis, MN; MMPA 6000 04 1- 13.

Wagner, S. (2007). Should the United States government fully fund universal health insurance coverage for all its citizens? *Walden University*. Minneapolis, MN; MMPA 6305 04 1- 39.

Wagner, S. (2008). The historical evolution of health services policy, regulation and administration in the United States. *Walden University*. Minneapolis, MN; SBSF 7100 421 Knowledge Area Module V 1-108.

Waitzkin, H., Schillaci, M., & Willging, C. E. (2008). Multimethod evaluation of health policy change: An application to Medicaid managed care in a rural state. *HSR: Health Services Research. 43*(4) 1325-1347.

Wells B. J., Jain A., Arrigain S., Yu C., & Rosenkrans, Jr., W.A., Kattan, M. W. (2008). Predicting six-year mortality risk in patients with type 2 diabetes. *Diabetes Care. 31*(12) 2301-6.

Weissert, C. S., Weissert, W. G. (2006). *Governing health: The politics of health policy* (*3rd ed.*). Baltimore, MD; John Hopkins University Press.

Wilensky, S., & Roby, D. H. (2005). Health centers and health insurance: Complements, not alternatives. *Journal of Ambulatory Care Management. 28*(4) 348-356.

Williams, D. R., McClellan, M. B., & Rivlin, A.M. (2010). Beyond the Affordable Care Act: Achieving real improvements in Americans' health. *Health Affairs.* Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=42649D680BD6FEE82175. *29*(8) 1481-1488.

Yu, A. P., Yu, Y. F., & Nichol, M. B. (2010). Estimating the effect of medication adherence on health outcomes among patients with type 2 diabetes – An application of marginal structural models. *Value in Health.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1524-4733.2010.00787.x/pdf.

Ziegenfuss, J. Y., & Davern, M.E. (2010). Twenty years of coverage: An enhanced current population survey 1989 – 2008. *HSR Health Services Research.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1475-6773.2010.01171.x/pdf.

Zhang, J. X., Huang, E. S., Drum, M. L., Kirchhoff, A. C., Schlichting, J. A., Schaefer, C. T., …, Chin, M. H. (2009). Insurance status and quality of diabetes care in community health centers. *American Journal of Public Health. 99*(4) 742-747.

Zwanziger, J., Khan, N., & Bamezai, A. (2010). The relationship between safety net activities and hospital financial performance. *BMC Health Services Research.* Retrieved from http://www.biomedcentral.com/1472-6963/10/15.

Appendix A: HCFA 1500 Claim Form

Making sense of Medicare paperwork, including the HCFA 1500 claim form, can be difficult. For that reason, here are some tips and a sample form to assist you. Please note that the lettered items on this page refer to letters printed on the sample form.

A. Printed in the upper left-hand corner of your HCFA 1500 claim form are the name and address of your supplemental insurance company. When you receive your Explanation of Medicare Benefits papers, attach copies to your HCFA 1500 claim forms. Please mail them to the name and address listed here.

B. Please review the insured person's identification number located in Box 1A of this form for accuracy. If this number is different from your records, please contact Mayo Clinic's Patient Account Services at 507-266-5670.

C. The insured person's policy group number is listed in Box 11 of this form. Please verify that this number is correct. If it is blank and you have a policy group number, please write the number in this box.

D. In Box 12, you will see the phrase "Signature on File." This means that you have given Mayo Clinic authorization to release medical information necessary to process your claim.

E. In Box 13, you will see the phrase "Signature on File" which authorizes payment of medical benefits to Mayo Clinic. A blank box indicates that you have not given Mayo Clinic authorization to assign payment of medical benefits.

F. If you were hospitalized at either Rochester Methodist Hospital or Saint Marys Hospital, the dates of hospitalization are listed in Box 18.

G. Please verify that Medicare has processed all charges. To verify charges, compare the date(s) of service (Box 24A), description of service (Box 24D), and the charge for the service (Box 24F) with each line on your Explanation of Medicare Benefits papers.

H. The number in Box 26 is your claim number.

I. Box 27 of this form is called the assignment indicator.

   If this box is marked "Yes," Mayo Clinic expects your supplemental insurance company to pay Mayo directly. This does not mean that Mayo will accept the insurance payment as payment in full. You will be responsible for copays, deductibles, non-covered items, and usual and customary allowances.

   If this box is marked "No," Mayo Clinic expects your insurance company to pay benefits directly to you.

J. In Box 28, you will find the total charges for that page of the HCFA 1500. If your claim has multiple pages, add the total from each page to figure your total charges for your visit to Mayo Clinic.

For questions about the HCFA 1500 claim form or any other form in the billing process, please call 507-266-5670.

Appendix B: Diabetes Mellitus Diagnosis Codes

Diabetes Mellitus Diagnoses Codes

The following 5th digit sub classification is for use with category 250:

0 type II or unspecified type, not stated as uncontrolled
1 type I (juvenile type), not stated as uncontrolled
2 type II or unspecified type, uncontrolled
3 type I (juvenile type), uncontrolled

250.0X	Diabetes mellitus without mention of complication
250.1X	Diabetes with ketoacidosis
250.2X	Diabetes with hyperosmolarity
250.3X	Diabetes with other coma
250.4X	Diabetes with renal manifestations
250.5X	Diabetes with ophthalmic manifestations
250.6X	Diabetes with neurological manifestations
250.7X	Diabetes with peripheral circulatory disorders
250.8X	Diabetes with other specified manifestations
250.9X	Diabetes with unspecified complication
648.01	Diabetes mellitus complicating pregnancy, delivered
648.02	Diabetes mellitus complicating pregnancy, delivered, with postpartum complication
648.03	Diabetes mellitus complicating pregnancy, ante partum condition
648.04	Diabetes mellitus complicating pregnancy, postpartum condition
648.81	Gestational Diabetes, delivered
648.82	Gestational Diabetes, delivered with postpartum complication
648.83	Gestational Diabetes, ante partum condition
648.84	Gestational Diabetes, postpartum condition
775.O	Syndrome of infant of a diabetic mother
775.1	Neonatal Diabetes mellitus

The following 5th digit sub classification is for use with category 249:

0 not stated as uncontrolled, or unspecified
1 uncontrolled

249.0X	Secondary Diabetes mellitus without complication
249.1X	Secondary Diabetes mellitus with ketoacidosis
249.2X	Secondary Diabetes mellitus with hyperosmolarity
249.3X	Secondary Diabetes mellitus with other coma
249.4X	Secondary Diabetes mellitus with renal manifestations
249.5X	Secondary Diabetes mellitus with ophthalmic manifestations
249.6X	Secondary Diabetes mellitus with neurological manifestations
249.7X	Secondary Diabetes mellitus with peripheral circulatory disorders
249.8X	Secondary Diabetes mellitus with other specified manifestations
249.9X	Secondary Diabetes mellitus with unspecified complication

Appendix C: Complications from Diabetes

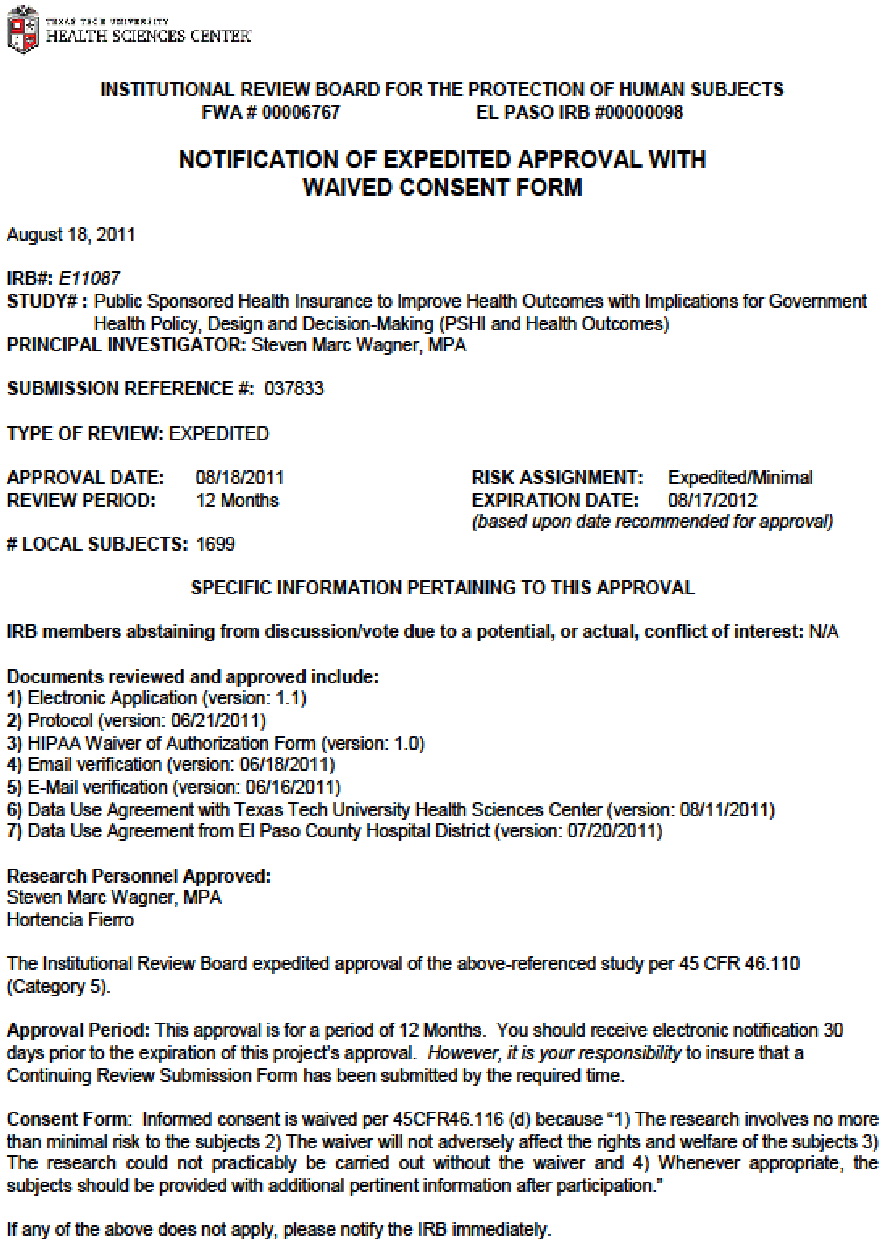
Complications from diabetes (ADA3, 2010)

- Heart Disease
- Ketoacidosis (DKA)
- Men's Health
- Women
- Pregnant Women
- Eye Complications
  - Eye Care Tips
  - Eye Care
- Foot Complications
- Neuropathy
- Skin Complications
- High Blood Pressure (Hypertension)
- Stroke
- Hyperosmolar Hyperglycemic Nonketotic Syndrome (HHNS)
- Gastroparesis
- Kidney Disease (Nephropathy)
- Kidney Replacement Therapy
- Mental Health
- Stress
- Peripheral Arterial Disease (PAD)

Appendix D: Diabetes Risk Assessment Tool

Health Status Score Matrix	-4 to -5	Very Poor Health Status	
Element Range -5 to +5	-2.1 to -3.9	Moderately Poor Health Status	
-5 = Very Poor Health Status	-0.1 to -2.0	Somehat Poor Health Status	
+5 = Very Good Health Status	0 to 2.0	Somehat Good Health Status	
	2.1 to 3.9	Moderately Good Health Status	
	4 to 5	Very Good Health Status	
	Score	Example 1	Example 2
Primary Diagnosis for Visit			
Hypertension	-1	-1	
Fluid and Electrolyte Disorders	-1		
Chronic Pulmonary Disease	-2		
Deficiency Anemias	-2		
Renal Failure	-5		
Morbid Obesity	-2	-2	
Congestive Heart Failure	-5		
Hypothyroidism	-3		
Depression	-1		
Peripheral Vascular Disorders	-3		
Diabetes Stage 1	-1	-1	
Diabetes Stage 2	-2		-2
No Contingent Diabetic Primary Diagnosis	0		
Vital Signs at time of Visit			
Weight (Normal)	5		
Weight (Above normal)	-2	-2	-2
Weight (Below normal)	-1		
Weight (Obese: BMI > 30)	-4		
Blood Pressure (Normal ≤ 120/80 - 140/90)	5		5
Blood Pressure (High ≥ 140/90)	-3	-3	
Body Temperature (Normal 98.6°)	5		
Body Temperature (Above Normal > 99°)	-3		
Laboratory Test Results			
Glycohemoglobin (HgA1C) Normal	5		5
Glycohemoglobin (HgA1C) Above Normal	-3		
Glycohemoglobin (HgA1C) Below Normal	-3	-3	
Total Cholesterol (within normal Range)	5		5
Total Cholesterol (above normal Range)	-3		
HDL Cholesterol (≤ 60mg/dL)	-3		
HDL Cholesterol (≥ 60mg/dL)	5		
LDL Cholesterol (≤ 100mg/dL)	5		
LDL Cholesterol (≥ 100mg/dL)	-3		
Triglycerides (Normal 145 - 155mg/dL)	4		5
Triglycerides (High > 155mg/dL)	-3		
Triglycerides (Low < 145mg/dL)	5		
Treatment Location			
Outpatient Clinical	5		5
Inpatient Hospital (Diabetic Related Condition)	-5		
Emergency Room Hospital	-5	-5	
Average Score		-2.43	3.00
Health Status		Moderately Poor	Moderately Good
Examples			
Ex 1: Diabetic Stage 1 patient came into ER with High Blood Pressure, Obesity and feeling faint with history of Diabetes. Patient body temperature is normal			
Lab tests showed low HgA1C, normal cholesterol and Triglycerides.			
Ex 2: Diabetic Stage 2 patient came into clinic for a regular office visit with normal Blood Pressure and overwight. Patient body temperature is normal			
Lab tests showed normal HgA1C, normal cholesterol and Triglycerides.			

Appendix E: TTUHSC IRB Approval Notification



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER

INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS
FWA # 00006767 EL PASO IRB #00000098

NOTIFICATION OF EXPEDITED APPROVAL WITH WAIVED CONSENT FORM

August 18, 2011

IRB#: *E11087*
STUDY# : Public Sponsored Health Insurance to Improve Health Outcomes with Implications for Government Health Policy, Design and Decision-Making (PSHI and Health Outcomes)
PRINCIPAL INVESTIGATOR: Steven Marc Wagner, MPA

SUBMISSION REFERENCE #: 037833

TYPE OF REVIEW: EXPEDITED

APPROVAL DATE: 08/18/2011
REVIEW PERIOD: 12 Months

RISK ASSIGNMENT: Expedited/Minimal
EXPIRATION DATE: 08/17/2012
(based upon date recommended for approval)

 # LOCAL SUBJECTS: 1699

SPECIFIC INFORMATION PERTAINING TO THIS APPROVAL

IRB members abstaining from discussion/vote due to a potential, or actual, conflict of interest: N/A

Documents reviewed and approved include:
1) Electronic Application (version: 1.1)
2) Protocol (version: 06/21/2011)
3) HIPAA Waiver of Authorization Form (version: 1.0)
4) Email verification (version: 06/18/2011)
5) E-Mail verification (version: 06/16/2011)
6) Data Use Agreement with Texas Tech University Health Sciences Center (version: 08/11/2011)
7) Data Use Agreement from El Paso County Hospital District (version: 07/20/2011)

Research Personnel Approved:
Steven Marc Wagner, MPA
Hortencia Fierro

The Institutional Review Board expedited approval of the above-referenced study per 45 CFR 46.110 (Category 5).

Approval Period: This approval is for a period of 12 Months. You should receive electronic notification 30 days prior to the expiration of this project's approval. *However, it is your responsibility* to insure that a Continuing Review Submission Form has been submitted by the required time.

Consent Form: Informed consent is waived per 45CFR46.116 (d) because "1) The research involves no more than minimal risk to the subjects 2) The waiver will not adversely affect the rights and welfare of the subjects 3) The research could not practicably be carried out without the waiver and 4) Whenever appropriate, the subjects should be provided with additional pertinent information after participation."

If any of the above does not apply, please notify the IRB immediately.

Appendix F: Walden IRB Approval to Proceed with Research

From: Jenny Sherer [Jenny.Sherer@waldenu.edu] on behalf of IRB [IRB@waldenu.edu]
Sent: Monday, August 22, 2011 2:28 PM
To: Steven Wagner
Cc: 'Sara Hart'; Walden University Research
Subject: Notification of Approval to Conduct Research-Steven Wagner

Dear Mr. Wagner,

This email confirms receipt of the IRB approval notification for the community research partner and also serves as your notification that Walden University has approved BOTH your dissertation proposal and your application to the Institutional Review Board. As such, you are approved by Walden University to conduct research.

Please contact the Office of Student Research Support at research@waldenu.edu if you have any questions.

Congratulations!

Jenny Sherer
Operations Manager, Office of Research Integrity and Compliance

Leilani Endicott
IRB Chair, Walden University

Appendix G: El Paso County Hospital District Data Use Agreement

This Data Use Agreement ("Agreement"), effective as of __/__/2011 ("Effective Date"), is entered into by and between **Steven M Wagner** ("Data Recipient") and **El Paso County Hospital District** ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with the HIPAA Regulations.

Definitions: Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the "HIPAA Regulations" codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.
Preparation of the LDS: Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable HIPAA Regulations
Data Fields in the LDS: In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research (see Attachment A, B, and C)
Responsibilities of Data Recipient: Data Recipient agrees to:
Use or disclose the LDS only as permitted by this Agreement or as required by law;
Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;
Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and
Not use the information in the LDS to identify or contact the individuals who are data subjects.
Permitted Uses and Disclosures of the LDS: Data Recipient may use and/or disclose the LDS for its Research activities only
Term and Termination
<u>Term:</u> The term of this Agreement shall commence as of April 1, 2011 and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.
<u>Termination by Data Recipient:</u> Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.
<u>Termination by Data Provider:</u> Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.
<u>For Breach:</u> Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable

terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

Effect of Termination: Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

Miscellaneous

Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

Construction of Terms: The terms of this Agreement shall construe to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

No Third Party Beneficiaries: Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

Counterparts: This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

Headings: The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

El Paso County Hospital District **DATA PROVIDER**	**Steven M. Wagner** **DATA RECIPIENT**
Signed: ________________________	Signed: ________________________
Print Name: ____________________	Print Name: ____________________
Print Title: _____________________	Print Title: _____________________

Appendix H: TTUHSC Data Use Agreement

This Data Use Agreement ("Agreement") is made and entered into as of this ________________ day of July, 2011 ("Effective Date") by and between Texas Tech University Health Sciences Center ("Covered Entity"), and Steven M. Wagner ("Data Recipient").

The TTUHSC Provider and/or the Department that will be releasing the limited data set: **Texas Tech Physicians of El Paso.**

The Researcher/Recipient and the Department that will be receiving the limited data set: **Steven M. Wagner.**

WITNESSETH:

WHEREAS, Covered Entity may disclose or make available to Data Recipient, and Data Recipient may use, disclose, receive, transmit, maintain or create from, certain information in conjunction with research; and

WHEREAS, Covered Entity and Data Recipient are committed to compliance with the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") and regulations promulgated there under and the Privacy Rule as provided in 45 CFR Part 160 and 164;

WHEREAS, the purpose of this Agreement is to satisfy the obligations of Covered Entity under HIPAA and to ensure the integrity and confidentiality of certain information disclosed or make available to Data Recipient and certain information that Data Recipient uses, discloses, receives, transmits, maintains or creates, from Covered Entity.

NOW, THEREFORE, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

A. DEFINITIONS

Terns used but not otherwise defined in this Agreement shall have the same meaning as those terms in the Privacy Rule.

1. Individual shall have the same meaning as the term “individual” in 45 CFR Sect. 164.501 of the Privacy Rule and shall include a person who qualifies as a personal representative in accordance with 45 CFR Sect. 164.502(g) of the Privacy Rule.
2. Limited Data Set shall have the same meaning as the term “limited data set” in 45 CFR 164.514(e) of the Privacy Rule.
3. Privacy Rule shall mean the Standards for Privacy of Individually Identifiable Information at 45 CFR Part 160 and Part 164, Subparts A and E, as amended from time to time.
4. Protected Health Information or PHI shall have the same meaning as the term “protected health information” in 45 CFR Sect. 164.501 of the Privacy Rule; to the extent such information is created or received by Data Recipient from Covered Entity.
5. Required by Law shall have the same meaning as the term “required by law” in 45 CFR Sect. 164.501 of the Privacy Rule.

B. SCOPE AND PURPOSE

1. This Agreement sets forth the terms and conditions pursuant to which Covered Entity will disclose certain PHI to the Data Recipient.

2. Except as otherwise specified herein, Data Recipient may make all uses and disclosures of the Limited Data Set necessary to conduct the research described herein: **Public Sponsored Health Insurance to Improve Health Outcomes for Hispanics on the Texas Mexico Border: Implications for Government Health Care Policy and Decision Making** (“Research Project”).

3. In addition to the Data Recipient, the individuals, or classes of individuals, who are permitted to use or receive the Limited Data Set for purposes of the Research Project, include:

Melchor Ortiz, Ph.D., Professor, Biostats , & Epidemiology, Dept. of Biomedical Sciences, TTUHSC
Frank Vigil, Programmer Analyst, TTUHSC
Hortencia Fierro, Coding Specialist TTUHSC

LIMITED DATA SET

1. A Limited Data set is defined as a subset of PHI that excludes the direct identifiers listed below and as such all direct identifiers must be removed for the individual and relatives, employers or household members of the individual.

2. The direct identifiers are as follows:

Names
Postal address information, other than town or city, State or zip code

Telephone numbers
Fax numbers
Electronic mail addresses
Social Security numbers
Medical record numbers
Health plan beneficiary numbers
Account numbers
Certificate/license numbers
Vehicle identifiers and serial numbers, including license plate numbers
Device identifiers and serial numbers
Web Universal Resource Locators (URLs)
Internet Protocol (IP) address numbers
Biometric identifiers, including finger and voice prints
16. Full face photographic images and comparable image

3. A description of the Limited Data Set provided under the terms of this Agreement is attached hereto as Attachments A, B and C, incorporated herein by reference.

OBLIGATIONS AND ACTIVITIES OF DATA RECIPIENT

1. Data Recipient agrees to not use or disclose the Limited Data Set for any purpose other than the Research Project or as required by Law.

2. Data Recipient agrees to use appropriate safeguards to prevent Use or Disclosure of the Limited Data Set other than as provided for by this Agreement.

3. Data Recipient agrees to report to the Covered Entity any use or disclosure of the Limited Data Set not provided for by this Agreement of which it becomes aware, including without limitation, any disclosure of PHI to an unauthorized subcontractor, within ten (10) days of its discovery.

4. Data Recipient agrees to ensure that any agent, including a subcontractor, to whom it provides the Limited Data Set agrees to the same restrictions and conditions that apply through this Agreement to the Data Recipient with respect to such information.

5. Data Recipient agrees not to identify the information contained in the Limited Data Set or contact the individual.

6. Data Recipient will indemnify, defend and hold harmless Covered Entity and any of Covered Entity’s affiliates, and their respective trustees, officers, directors, employees and agents (“Indemnitees”) from and against any claim, cause of action, liability, damage, cost or expense (including, without limitation, reasonable attorney’s fees and court costs) arising out of or in connection with any unauthorized or prohibited use or

disclosure of the Limited Data Set or any other breach of this Agreement by Data Recipient or any subcontractor, agent or person under Data Recipient's control.

OBLIGATIONS AND ACTIVIES OF COVERED ENTITY

The Covered Entity may use or disclose a limited data set that meets the definition provided herein if the Covered Entity enters into this data use agreement with the data recipient.

1. The Covered Entity is exempt from the Accounting of Disclosures Policy for disclosures of a limited data set.

2. The Covered Entity may use or disclose a limited data set only for the purposes or research, public health or health care operations.

F. TERM AND TERMINATION

The provisions of this Agreement shall be effective as of the earlier of Effective Date or _ _____________and shall terminate when all of the Limited Data Set provided by Covered Entity to Data Recipient is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy the Limited Data Set, protections are extended to such information, in accordance with the termination provisions in this Section.

G. MISCELLANEOUS

1. A reference in this Agreement to a section in the Privacy Rule means the section as amended or as renumbered.

2. The parties agree to take such action as is necessary to amend this Agreement from time to time as is necessary for Covered Entity to comply with the requirements of the Privacy Rule and HIPAA.

3. The respective rights and obligations of Data Recipient under Section C of this Agreement shall survive termination of this Agreement.

4. Any ambiguity in this Agreement shall be resolved to permit Covered Entity to comply with the Privacy Rule.

5. There are no intended third party beneficiaries to this Agreement. Without in any way limiting the foregoing, it is the parties' specific intent that nothing contained in this

Agreement gives rise to any right or cause of action, contractual or otherwise, in or on behalf of the individuals whose PHI is used or disclosed pursuant to this Agreement.

6. No provision of this Agreement may be waived except by an agreement in writing signed by the waiving party. A waiver of any term or provision shall not be construed as a waiver of any other term or provision.

If the Covered Entity or the Data Recipient knows of a pattern of activity or practice that constitutes a breach or violation of this agreement, and such violations cannot be cured or such violation ended by reasonable measures, both parties agree to the discontinued disclosure of PHI and agree to report the problem as required by law.

The persons signing below have the right and authority to execute this Agreement and no further approvals are necessary to create a binding agreement.

9. In the event of any conflict between the terms and conditions stated within this Agreement and those contained within any other agreement or understanding between the parties, written, oral or implied, the terms of this Agreement shall govern. Without limiting the foregoing, no provision of any other agreement or understanding between the parties limiting the liability of Data Recipient to Covered Entity shall apply to the breach of any covenant in this Agreement by Data Recipient.

10. This Agreement shall be construed in accordance with and governed by the laws of the State of Texas

IN WITNESS WHEREOF, the parties have executed this Agreement effective upon the Effective Date set forth above.

COVERED ENTITY	**DATA RECIPIENT**
TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER	STEVEN M. WAGNER
By____________________________	By____________________________
Date___________________________	Date___________________________

Appendix I: Specific Instructions to Data Sources

Approval to conduct research utilizing UMC EP resources/services - TTUHSC IRB No. E11087 - PSHI and Health Outcomes
Monday, January 02, 2012
2:04 PM

Subject	**Approval to conduct research utilizing UMC EP resources/services - TTUHSC IRB No. E11087 - PSHI and Health Outcomes**
From	Wagner, Steve
To	'MWatts@umcelpaso.org'; 'Carol Smallwood'; Ruiz, Alejandra
Cc	Sharon Perkins; 'DJoyner@umcelpaso.org'; Fierro, Hortencia; 'Sara Hart'
Sent	Saturday, August 27, 2011 10:08 AM
Attachments	TTUHSC IRB Approval Letter Ref Number 037833 08182011.pdf Data Use Agreement TTUHSC 08112011 Final.pdf Data Use Agreement EPCHD 07202011 Final.pdf PSHI Data File Draft 08252011.xls

Good afternoon Mark, Alex and Carol: I am able to obtain the data now for the research project I am doing on public sponsored health insurance and health outcomes. I am hoping that this research will shed some light on health insurance value to the medical health improvement of patients at both TTUHSC and UMC.

I attached TTUHSC IRB approval, the approval below to conduct the study and the Data Use Agreements with EPCHD and TTUHSC. In hopes of expediting the data gathering as much as possible, I have attached the data sheet (PSHI Data File Draft 08252011) with the following explanation:

EL Paso First Health Plans, Inc (EP1HCO): The items in RED are data needed from El Paso First Health Plans, Inc on HCO patients who were **enrolled between March 1, 2009 and August 31, 2009** in EP1 HCO, who had a subsequent claim within the following 18 months from their enrollment date at either TTUHSC or UMC with a primary, secondary or tertiary diagnosis (ICD9) of diabetes. I also attached the list of ICD9 diabetes diagnoses.

EP1HCO shall assign a random number to each person identified in the data search. In this way, the research can discern how the criteria indicate health status on individuals. The random number follows the patient over all visits even after the PHI is removed by UMC and TTUHSC. The entire data file must be maintained by the data sources for a minimum of 5 years or until the principal investigator notifies you that the files must be destroyed. The purpose ensures that any subsequent investigations by the research sponsor provides the ability to validate that the data derives from actual records.

UMC and TTUHSC will arrange with EP1HCO to securely transmit the initial data file for a records pull. Once the records are pulled, UMC and TTUHSC will complete the data on all these enrolled patients seen in UMC facilities within the previous 18 months prior to their enrollment date and the 18 months following their enrollment date with a primary, secondary or tertiary diagnosis (ICD9) of diabetes. At TTUHSC, when the Medical Charts are pulled by Medical Records, Hortencia Fierro, research assistance and I should be notified. Ms. Fierro will extract the data and redact the PHI prior to transmitting the data to me.

The PHI in this data is not to be transmitted to me. It is for the purpose of matching medical records to the data that is needed. The HCO data file should be transmitted directly to Mark Watts at UMC and Alejandra Ruiz in Medical Records at TTUHSC.

Please notify me as each step is completed by e-mail or phone so I may log in the progress for my records.

Thank you so much for your assistance with this important project. If you have any questions, please feel free to reply be e-mail or call me at the numbers below.

Steve

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Steven M. Wagner, MPA, CPAM, CCP
Managing Director; Texas Tech Physicians of El Paso
Business Operations, Central Registration, Managed Care and
Physician Service Contracting, Policy and Administration
Phone: 915-594-3584; FAX: 915-594-3581; Cell: 915-727-7383
E-Mail: steve.wagner@ttuhsc.edu
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From: DJoyner@umcelpaso.org [mailto:DJoyner@umcelpaso.org]
Sent: Tuesday, August 23, 2011 10:57 AM
To: Wagner, Steve
Cc: MWatts@umcelpaso.org; MZampini@umcelpaso.org; Arvizo, Myrna
Subject: Approval to conduct research utilizing UMC EP resources/services - TTUHSC IRB No. E11087 - PSHI and Health Outcomes

Hi Steve - your study has been approved for conduct at UMC El Paso. I copied Mark Watts in on this approval so that he will know that it is OK for him to pull the de-identified information for you. Please take a moment to review the terms of this approval and let me know if you have any questions. Good luck with your project.

Dani

23 August 2011

Steven M. Wagner, MPA
MPIP Credentialing Elp
Paul L Foster School of Medicine
TTUHSC El Paso
4800 Alberta Ave.
El Paso, TX 79905

Dear Mr. Wagner:

Your study protocol entitled "Public sponsored health insurance to improve health outcomes with implications for government health policy, design and decision-making (PSHI and Health Outcomes)" (TTUHSC IRB Protocol No.E11087) has been reviewed and approved for implementation in the El Paso County Hospital District – University Medical Center of El Paso

Per the IRB approved protocol and your request for approval, it is our understanding that you may require some or all of the following services/support from University Medical Center of El Paso:

Access to de-identified health information (electronic)

Access to one thousand six hundred ninety-nine (1699) records has been approved for this study. Study personnel authorized to work on this project at this location include you (Principal Investigator and Hortencia Fierro (Research Assistant).

With respect to proper accounting and auditing purposes, University Medical Center of El Paso requires information for records accessed for this study. Please provide an accounting of the number of records received to Research Compliance on at least a monthly basis.

NOTE (if applicable to your study):
1. At the present time, access to electronic patient information for research purposes is limited to Principal Investigators (PIs), Co-Principal Investigators (Co-PIs) or, under certain circumstances, to non-clinical research personnel who have taken/passed the

CERNER (electronic medical records) training and have been issued a USERID and PASSWORD for that system. In order for non-clinical research personnel to access electronic medical records for research purposes, these records must be identified to the Compliance Research Manager so that the appropriate access can be arranged. This must be done in advance of trying to access the electronic medical record. If you anticipate that non-clinical personnel will be working on this study and have not taken/passed a CERNER training course, please contact Research Compliance for additional assistance.

2. Should a study monitor require access to EPCHD facilities or resources (including electronic medical records) for study conduct or during the conduct of a study audit (whether routine or for cause), please contact the Research Manager immediately. Arrangements will be made to accompany the monitor to the hospital HR department to secure a visitor's badge and to the various departments for which access is required. Access to electronic medical records for subjects enrolled in this study should also be arranged through the Research Manager. If an audit report contains information that reflects either positively or negatively on the research services provided by the EPCHD facility, please provide that information so that it can be reviewed for performance improvement purposes.

Please contact me at 915.544.1200 ext. 1394 at any time during this study should you have any questions, concerns, or changes in this study agreement. Thank you for choosing to conduct your research project at University Medical Center of El Paso.

Sincerely,

Dani G. Joyner, BS, CHRC, Compliance Research Manager
University Medical Center of El Paso

cc: Mark Watts, MIS, UMC El Paso
Maria Zampini, Vice President, Ancillary Services, UMC El Paso
Catherine L. Gibson, MBA, CHC, Compliance Officer, UMC El Paso
TTUHSC IRB

Dani G. Joyner, BS, CHRC / Compliance Research Manager
djoyner@umcelpaso.org
(915) 544 1200 ext. 1394 / (915) 521 7879 (fax)

Appendix J: CITI Collaborative Institutional Training Initiative

Human Research Curriculum Completion Report
Printed on 2/6/2011

Learner: Steven Wagner (username: smwagner11)
Institution: Walden University
Contact Information 2341 Juliette Low Dr.
El Paso, Texas 79936 USA
Phone: 915-5943584
Email: steve.wagner@ttuhsc.edu

Social/Behavioral Research:

Stage 2. Refresher Course Passed on 11/12/10 (Ref # 5157125)

Required Modules	**Date Completed**	
SBR 101 REFRESHER MODULE 1. History and Ethics	10/26/10	5/5 (100%)
SBR 101 REFRESHER MODULE 2. Regulatory Overview	10/26/10	5/5 (100%)
SBR 101 REFRESHER MODULE 3. Fundamental Issues.	10/26/10	5/5 (100%)
SBR 101 REFRESHER MODULE 4. Vulnerable Subjects	11/08/10	4/4 (100%)
SBR 101 REFRESHER MODULE 5. Additional Topics	11/12/10	4/5 (80%)
How to Complete The CITI Refresher Course and Receive the Completion Report	11/12/10	no quiz
Walden University Module	11/12/10	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

Curriculum Vitae

Steven M. Wagner

Business Address:
Texas Tech University – HSC – El Paso
Medical Practice Income Plan Business Office
4801 Alberta
El Paso, Texas 79905
E-Mail: steve.wagner@ttuhsc.edu

Professional Preparation:
University of Texas at Austin – Bachelor of Arts - December 1976
Walden University – Master of Public Administration - November 2007

Appointments:

Managing Director – Medical Income Practice Plan Business Operations – Texas Tech University Health Sciences Center Paul L Foster School of Medicine – 1995 – present

Executive Preceptor – TTUHSC Health Organizations Management – 1999–2006

System Director of Patient Financial Services – Columbia/HCA Healthcare System of El Paso– 1992-1995

System Director of Business Services – Presbyterian Healthcare System of Dallas – 1991–1992

Vice President of Marketing and Healthcare Systems – Reliant Financial Corporation – 1986–1991

Corporate Director of Patient Financial Services – Republic Health Corporation – 1983-1986

Regional Director of Business Operations – Hospital Affiliates International – 1976-1983

Publications:

Wagner, S. M., (1989) Hospital Accounts Receivable Finance Part I *Journal of Patient Account Management* Summer 1989.

Wagner, S. M., (1989) Hospital Accounts Receivable Finance Part II *Journal of Patient Account Management* Fall 1989.

Wagner, S. M. (1989) Giving Credit Where Credit is Due *Health Progress* May 1989;

Wagner, S. (2007) Should the United States Government Fully Fund Universal Health Insurance Coverage for All Its Citizens? Walden University 18 November 2007 MMPA 6305 04 pp. 1- 39

Wagner, S. (2008) The Historical Evolution of Health Services Policy, Regulation and Administration in the United States Walden University 23 November 2008 SBSF 7100 421 Knowledge Area Module V pp. 1-108

Synergistic Activities:

Completing dissertation for PhD of Public Policy and Administration Walden University Expected completion date: May 2012

Topic for dissertation: Public Sponsored Health Insurance to Improve Health Outcomes with Implications for Government Health Policy, Design and Decision-Making

Developed health status measurement tool to determine health outcomes for patients with diabetes prior to and post enrollment in a public sponsored health insurance program

Memberships:
Healthcare Financial Managers Association
American College of Healthcare Executives
Medical Group Management Association

Community Involvement:
Leadership El Paso Class XX; 1998
Board Member , & Chairman of Fiscal Committee for Greater El Paso YMCA 1999 - 2004
Member of St. Mark Conference of St.Vincent De Paul
Member of St. Mark Catholic Church Finance Council
Member of El Paso Economic Summit Business Climate Group
Member of El Paso Economic Summit Industry Cluster Group
Member Sun Bowl Association Game Day Committee; Volunteer of the Year, 1998
Member Sun Bowl Association Game Day Committee; Volunteer of the Year, 2002

Awards:

Corporate Award for Excellence in Business Office Management; Hospital Affiliates International, 1980
Listed in *Who's Who in Finance and Industry;* 1989-1990 edition and *Who's Who in America;* 1990-1991 edition.

You Make It Happen Award; Kellogg-Community Partnership; September, 1997
Volunteer of the Year; Sun Bowl Association; December, 1998
Quality Service Award; Texas Tech University Health Sciences Center; May 2001