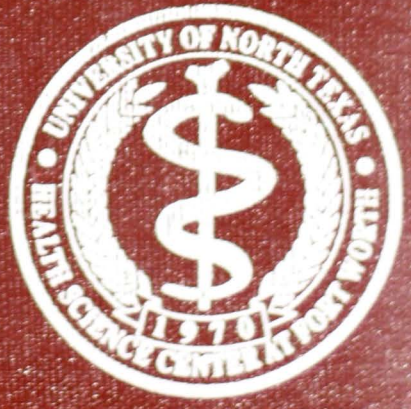
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Mego, III, Charles B.W., Health Care Access Patterns in Relation to Ethnic/Racial and Health Insurance Status at an Osteopathic Hospital for 1998 through 2001. Doctor of Public Health (Social and Behavioral Sciences), December 2003, 106 p.p., 25 tables, 5 illustrations, references, 44 titles.

The patient population of the Osteopathic Health System of Texas (OHST), an academic health center with a 256-bed teaching hospital, was analyzed for health care access as measured by health services utilization in 1998 through 2001. This study explored the question of whether there was less health care access among minorities than among the White non-Hispanic majority within the patient population at OHST. The Tarrant County population was compared to OHST's population demographics. This assessment determined which Ethnic/Racial groups had the highest medical services utilization and their payment methods. Patient data obtained from the OHST's Meditech database was analyzed using Epi-Info.

White non-Hispanics made up over fifty percent of the Emergency Room (ER), Inpatient and Outpatient service utilization in 1998 through 2001. The Outpatient component made up just over fifty percent of the OHST's patients. African-Americans were over represented in the ER, Inpatient, and Outpatient service components relative to the Tarrant County demographics for 1998 through 2001. The Hispanic ER Managed Care category increased 7% and confirmed a growth rate of 29% more ER Managed Care in 2001, as compared to 1998 (URR = 1.29, [1.24-1.35], $\chi_2 = 142.49$, $p < .01$). The Hispanic ER Medicaid category decreased 4.1% and indicated a reduced growth rate of

17% less ER Medicaid in 2001 as compared to 1998 (URR = 0.83, [0.79-0.87], χ_2 = 57.69, $p < .01$).

The Hispanic Inpatient Managed Care category increased 13.2% and revealed a positive growth rate with 52% more Inpatient Managed Care in 2001 as compared to 1998 (URR = 1.52, [1.44-1.61], $\chi_2 = 224.92$, $p < .01$). The Hispanic Inpatient Medicaid category decreased 14.4% and showed a reduced growth rate of 38% less Inpatient Medicaid in 2001 as compared to 1998 (URR = 0.62, [0.59-0.66], $\chi_2 = 274.58$, $p < .01$). The Hispanic and the Other groups relied heavily upon ER Self Pay, with a general decrease in Medicaid coverage and an increase in Managed Care. The Hispanic and Other groups have medical needs that are being neglected at OHST, and may lead to serious health problems that could be more costly if still treatable.

HEALTH CARE ACCESS PATTERNS IN RELATION TO ETHNIC/RACIAL AND HEALTH INSURANCE STATUS AT AN OSTEOPATHIC HOSPITAL FOR 1998 THROUGH 2001

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HEALTH CARE ACCESS PATTERNS IN RELATION TO ETHNIC/RACIAL AND HEALTH INSURANCE STATUS AT AN OSTEOPATHIC HOSPITAL FOR 1998 THROUGH 2001

DISSERTATION

Presented to the School of Public Health

University of North Texas Health Science Center

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CHAPTER I

INTRODUCTION

Racial and ethnic minorities in the United States have had less medical services access than the ethnic majority, which has led to the development of preventable diseases and untimely deaths. Awareness of the community's demographic characteristics and culture has facilitated a more fluid delivery of health care services in communities that have remained committed to reducing health care disparities. Communities with a sustained level of health care access have improved in disease prevention and the reduction of medical costs (Friedman, 2002). This study explored the question of whether there was less health care access among minorities within the patient population at the Osteopathic Health System of Texas (OHST).

The literature review reflects that health care access disparities exist among minority groups in the United States. The literature review was comprised of published demographic information from well-represented allopathic health care facilities. There is little osteopathic patient demographic data available for review, and this study has included an osteopathic health system so that it can be added to the body of knowledge for a more comprehensive perspective of health care access. The lack of osteopathic patient demographic information may be related to having 125 allopathic medical schools and only 20 osteopathic teaching facilities or differential participation in medical research (Beaudry, 2003). The health care access disparities in the osteopathic health system were

expected to be similar to allopathic facilities where White non-Hispanics represented approximately two-thirds of the total health services utilization, with some regional differences with the Hispanic group in Tarrant County. The 1998 OHST services utilization was compared to OHST's 1999 through 2001 services volume by Ethnic/Racial and medical services payment categories.

Health care access was determined by the volume of patients who were able to receive medical services, and the financial payment proportions used in entering OHST. The Ethnic/Racial proportions of White non-Hispanic, African-American, Hispanic and Other, reflected which groups had the most access to health services at OHST. The payment categories of Managed Care, Medicare, Medicaid, and Self Pay indicated the financial coverage the Ethnic/Racial groups used to access medical services. The patient population of OHST was also compared to the Tarrant County total population in 1998 through 2001 to see if the distribution of the Ethnic/Racial proportions were similar in both populations.

CHAPTER II

OBJECTIVES

Minorities have had less access to health care services and preventive care than the ethnic majority in the United States. The purpose of this research was to determine the level of health care access for the OHST patient population that was inclusive of adults and children. This study determined if there was less health care access among minorities within the patient population at OHST. Health care access for the patient population was measured using Ethnic/Racial and patient health care coverage categories. Health care access was also assessed by comparing the Ethnic/Racial representation in the health system to the Tarrant County population. Health care delivery and medical services could be improved through the assessment of the changing demographics of the population. Barriers to health care access can be targeted, and ultimately removed, creating a reduction in medical costs, and producing a healthier community. The following objectives helped to determine the levels of health care access among the patient population at OHST:

- Describe and evaluate the 1998 OHST baseline information of Ethnic/Racial and payment categories in terms of health care access.
- Compare the 1998 OHST baseline data to the 1999 through 2001 OHST patient data in order to assess the level of health care access.
- Assess the Ethnic/Racial distribution of the OHST patient population relative to the Tarrant County proportions in 1998 through 2001.

Hypotheses

The research hypotheses were applied to determine the levels of health care access in the health care system at OHST. The following hypotheses for this study were founded on the expected health care utilization levels determined from the1998 baseline information:

- The Outpatient volume was anticipated to be higher than the Emergency Room (ER) and Inpatient areas of OHST for 1998 through 2001.
- The distribution of the Ethnic/Racial proportions for the OHST general patient population was anticipated to be similar to the Tarrant County population proportions for 1998 through 2001.
- The White non-Hispanic group of OHST was anticipated to have a greater representation than the African-American, Hispanic, and Other groups in the ER, Inpatient, and Outpatient areas for 1998 through 2001.
- The distribution of the Ethnic/Racial proportions for the ER, Inpatient, and Outpatient populations of OHST were expected to be similar to the Tarrant County population proportions for 1998 through 2001.
- The distribution of the 1999 through 2001 OHST patient payment proportions were anticipated to be similar to the 1998 baseline levels.
- The Hispanic and Other groups were anticipated to have a lower level of health insurance coverage, and a higher reliance on out-of-pocket expenses.
- Hispanics and African-Americans seen at OHST were expected to have a high reliance upon Medicaid in 1998 through 2001.

CHAPTER III

LITERATURE REVIEW

Background and Relevance

This assessment of the utilization of patient services at the Osteopathic Health System of Texas (OHST) was conducted to identify the level of health care access by Ethnic/Racial representation and patient payment activity. The total ER, Inpatient and Outpatient populations included repeat visits, even for the same inpatient procedure, ambulatory service or episodic description of illness or disease. OHST, located in Fort Worth, Texas, was established within Tarrant County in 1946. OHST was founded as a teaching medical center with a private, not-for-profit 256-bed acute care teaching hospital known as the Osteopathic Medical Center of Texas (OMCT) (Coustasse & Treviño, 1999).

OMCT services assessed included Emergency Room and Inpatient acute care services provided in the hospital. The OHST was developed to include all of the available services provided by all health network facilities in the ER, Inpatient, and referral based Outpatient components (Organization for Economic Co-operation and Development [OECD], 2000), (Figure 1). This study focused on all available services provided by OHST, without limiting it to just the acute services of the OMCT hospital or doing a patient count. OHST added the Medical Center Pharmacy and the Ellis Child Development Center to the network. Designated referral based Outpatient services were

also incorporated into the health system. These services included the One Day Surgery Center, Diagnostic Imaging Center, Hyperbaric Wound Therapy Center, Women's Diagnostic Breast Center, V.L. Jennings Outpatient Pavilion, Sleep Laboratory, Long-term Nursing Care Department, Sports Medicine and Rehabilitation of Texas Institute, Wellness/Fitness Center, and nine clinics throughout Tarrant County.

The awareness of the community's ability to access health care services at this hospital could help in the reduction of health care disparities. The underutilization of health care services and lack of health care access by minorities has contributed to adverse health outcomes in their population. Differences have existed in the health status of Ethnic/Racial groups in the United States, despite all advances in medicine for African-Americans and Hispanics over the last three decades (Lieu, Newacheck, & McManus, 1993). Minority groups have had higher overall mortality rates compared to White non-Hispanics. The high mortality levels were a result of conditions such as low birth weight, diabetes, heart disease, and cancer. Children of minority Ethnic/Racial groups have been at increased risk of asthma and lead poisoning. Minorities have also used fewer health care services than White non-Hispanics, although they have had worse health status (Lieu et al., 1993). Sometimes the minority patients waited too long to use medical services, which reduced opportunities for preventative care and often led to their developing serious diseases. Cultural perceptions have been misunderstood in the health profession, and a heightened awareness is needed in order to improve the health of minorities (Lieu et al., 1993).

The 2001 Center for Studying Health System Change report found that African-Americans and Hispanics had less access to medical care than White non-Hispanic Americans (Creighton, 2002). African-Americans and Hispanics were less likely to have adequate health coverage. The uninsured minorities were less likely to have an established primary care provider than uninsured White non-Hispanics. The percentage of Hispanics with a regular health care provider declined from 60% in a 1997 to 55% in 2001 (Creighton, 2002). The health care disparities also reached beyond health insurance and into the quality of services received, once minorities gained access to the system.

The 2002 Institute of Medicine (IOM) report revealed that increased health insurance coverage would likely reduce racial and ethnic disparities in the use of appropriate health care services (Creighton, 2002). The IOM report found that uninsured Americans were at a disadvantage in disease prevention, treatment of chronic illness, hospital care, and overall health status. The individuals without health insurance usually have not received the care they needed. When they have received it, it usually has been too late. There were about 18,000 deaths in the U.S. due to not having insurance in 2001 (Creighton, 2002). Mortality rates were twenty-five percent higher among the uninsured than among the insured. Americans who did not have insurance fared worse when their health failed. Uninsured people with breast cancer were 30% to 50% more likely to die than the insured. Patients with colorectal cancer were about 50% more likely to die when they did not have health insurance coverage than those with an affiliation with a health plan (Creighton, 2002).

The challenge, echoed by the report from IOM, has been to expand health care access in the United States. With a lack of health care coverage, the uninsured patients have usually relied upon the costly hospital ER services. The emphasis of reducing costly Inpatient and ER activities has limited the health care access of the uninsured people. The declining Medicare and Medicaid reimbursements have hindered access to care by forcing many physicians to reduce the number of patients they accept (Yeh, 2002). The reduction in Medicare and Medicaid reimbursement has also caused many health care providers to reduce or eliminate vital community services (O'Toole, Simms, & Dixon, 2001).

The feeble economy and rising health care costs have created barriers to coverage. States could pursue financial reductions in Medicaid and children's health insurance programs in order to balance the budgets. State budgets have been difficult to balance because of the uncertain economy. State leaders have reviewed freezing Medicaid enrollment of new children or limiting periods when children can enroll, in order to eliminate a budget deficit. States have considered increasing family premium requirements, dropping entire categories of coverage; and eliminating simplified enrollment procedures. The rising cost of health care premiums has caused many employers to reduce the level of retirement and health benefits (Yeh, 2002). Some employers increased the amount that employees paid toward premiums and deductibles, or have eliminated health care coverage. The number of uninsured people may have increased due in part to the weakened economy. Health services to assist those in need

have also been scaled back, which has made the health status of those individuals more vulnerable.

Federal and State Health Insurance Coverage

African-Americans and Hispanics have continued to suffer more from several of the most devastating diseases of modern times, when compared to their White non-Hispanic counterparts (Friedman, 2002). These vulnerable populations have not always had adequate access to health care services. Adequate health care coverage has been essential in preventing, managing, and treating disease, as well as reducing medical costs. The lack of health care insurance has been the primary barrier that has created health care disparities (Quinn, 2000). There were 39.4 million uninsured people throughout the U.S. in 1994 (U.S. General Accounting Office [U.S. GAO], 2000). This accounted for 17.1% of the county's entire population. The number of uninsured people increased to 43.9 million in 1998, and represented 18.4% of the total U.S. population. The uninsured segment dropped to 42.1 million in 1999, and accounted for 17.4% of the total U.S. population (U.S. GAO, 2000). Approximately 38.7 million people in the U.S. were without health insurance coverage during 2000, and represented fourteen percent of the entire population. This continued the decline reflected in 1999 (Allen, 2001). Thirty-two percent of the uninsured population in the U.S. was Hispanic. African-Americans represented 18.5% and White non-Hispanics made up 12.9% of the uninsured population (Mills, 2001). The number of uninsured Hispanics in the U.S. nearly doubled to 11.2 million from 1987 to 1998. Hispanics were left to rely on self-paying options or Medicaid assistance (U.S. Census Bureau, 1999).

From 1998 to 1999, there was an average of approximately 3.1 million poor people per year in Texas, which accounted for about fifteen percent of the state's total population (Department of the Texas Health and Human Services Commission [THHSC], 2001). Hispanics represented about thirty-eight percent of uninsured Texans in 2000 (Texas Institute for Health Policy Research, 2000). In 31 states, including Texas, the proportion of families living below the poverty line that lacked health insurance exceeded forty percent in 1997. Almost two-thirds of the families that lived below the poverty line in Texas, Arizona and Arkansas were without health insurance. The average of uninsured families was 33.7% for all states combined. The proportion of uninsured families living in poverty ranged from a low of 8% in Hawaii to a high of 63% in Texas (U.S. Census Bureau, 1998). In Texas, individuals could become eligible for the Families and Children section of Medicaid depending on their age, income, and poverty level determinations. Individuals could also become additionally eligible for the Cash Assistance Recipients section of Medicaid, depending on whether they were also receiving Temporary Assistance to Needy Families, or Supplemental Security Income. Eligibility for the Aged and Disabled category was decided on income level, age, and the nature and extent of the physical or mental disability. In Texas, Medicaid provided an option for health care access for low-income and uninsured people (Danis, Biddle, & Dorr-Goold, 2002). Health care access was improved only if those who needed it the most were able to meet all of the program requirements.

The Medicaid program has provided health care access to those who did not have the means to obtain medical services (Gazwood, Lango, & Madsen, 2000). Managed

Care was incorporated into Medicaid to try control medical costs and create greater health care access (Backus et al., 2001). From 1992 to 1996, the number of Texas Medicaid beneficiaries in Texas increased from 2 million in 1992, to 2.31 million in 1993 (THHSC, 2001). In 1994, there were 2.51 million Texas Medicaid beneficiaries, and in 1995, it increased to 2.56 million. The number of Medicaid beneficiaries climbed to 2.57 million in 1996. In 1997 and 1998, the number of Texas Medicaid beneficiaries in Texas decreased to 2.54 million, and 2.32 million respectively. In 1999, the number of Texas Medicaid beneficiaries in Texas increased to 2.53 million, with approximately fifty-eight percent being Hispanic (Kenny, Dubay, & Haley, 2000).

The number of beneficiaries climbed to 2.67 million in 2000 (THHSC, 2001). Hispanics represented half of the total Medicaid recipients in 2000. Twenty-seven percent of the Medicaid recipients in Texas were White non-Hispanics, which was the second largest segment. The African-Americans consisted of 19%, and the Other group comprised of 4% of all the Medicaid recipients. Sixty-four percent of Texas Medicaid recipients in 2000 were children. Approximately one third of those children lived in Medicaid eligible families because they were a Cash Assistance Recipient (U.S. Department of Health and Human Services [U.S. HHS], 2002).

Three fourths of the Texas population had private health insurance in order to access health care services in 1989 (U.S. GAO, 2000). That decreased to about seventy percent from 1993 through 1997. Most of that entire population obtained private insurance through the workplace. In 2000, approximately 175 million people in the U.S., approximately sixty-two of the total population, had private employer-sponsored health

insurance (U.S. GAO, 2000). The increased presence of managed care in Texas had more individuals accessing health care services with their private insurance using a managed care mode.

In 1998, approximately 77 million people, slightly less than one third of the entire U.S. population, were using a form of managed care in order to access health care services (Baumgarten, 2001). The use of managed care has increased fifty percent from 1993. In the South and Midwest, about one fourth of the populations in those regions of the country were using a form of managed care. In the Northeast and West, slightly more than one third of the populations in those regions of the country used a form of managed care. In 1999, about twenty-one percent of Texans accessing medical services through Managed Care were Hispanic, and approximately 10 percent were African-American Hispanic (Kenny et al., 2000). After years of steady growth, the use of managed care in Texas leveled off in 2000, and decreased by almost 6% in the first half of 2001 (Baumgarten, 2001). Individuals who used managed care to access health care grew by an average of 20% annually from 1995 to 1998. The growth leveled off to only 1.7% in 2000, with 4 million people using managed care to access health services.

The Medicare program has provided coverage Medicare covered more than 33 million people in the U.S. in 1996 (Kramarow, Lentzner, Rooks, Weeks, & Saydah, 1999). In 1999, there were approximately 2.2 million elderly and disabled Texans using Medicare to access health care services (U.S. HHS, 1999). Medicare coverage in Texas grew to approximately 2.3 million by 2001, about ten percent of the state's population. Thirty-six percent of all hospital admissions in Texas were through the emergency

department in 2001 (Zhongmin & Mohanty, 2003). Government sponsored health care coverage programs such as Medicaid and Medicare provided coverage for 52% of all hospital stays. Most admissions to the hospital were routine or planned admissions. Private insurance was billed for 36% of all hospitalizations. Medicare covered more than 32% of all hospitalizations. Twenty percent of the population of Texas did not have health insurance in 2001. Only seven percent of hospitalized patients did not have health insurance coverage at the time of discharge from the hospital (Zhongmin & Mohanty, 2003). Patients with health insurance had more access to inpatient services and long-term care. Patients without health insurance relied heavily on emergent medical services to address most of their health needs.

Health Care Access Barriers

Some provisions have been enacted to protect the patient and to provide greater access to health care. The existing provisions have been helpful, but they have not eradicated every health care access barrier. Ethnic minorities on a national level have had a significant prevalence of health disparities and decreased heath care access. Hispanic and African-American health status has been worse than that for White non-Hispanics and may be attributed to a lack of access to health care services (Metzger, 1994). Ethnic minorities have been denied access to adequate health care because of numerous barriers. Barriers to health care access have included the type of employment, no enforcement or lack of adequate laws, policy changes that reduce health services, and lower socioeconomic status (Betancourt, Carrillo, Coustasse, & Treviño, 2001). The

barriers that have affected the relevant segments of the local population would have to be targeted in order to have those disruptions remedied.

Reductions in health care disparities can be achieved through the elimination of the targeted barriers. The lack of insurance and inadequate location of health care facilities has created health care barriers. Poor relationships with non-minority physicians, and misconceptions between ethnic groups created disparities in health care access (Federman et al., 2001). The commitment that stakeholders have made to the removal of barriers could influence whether or not there is improved access to health care for the community. Identifiable barriers to health care access can be removed when individuals in the community are aware of the population demographics and cultural dynamics. The reduction in health care disparities has favored disease prevention, medical cost containment, and the health status of the community.

Secondary barriers to medical services have been the lack of diversity among health care providers (Betancourt et al., 2001). The minority patients have not always felt comfortable with the relationships they have had with medical providers. The lack of minority physicians has created a barrier because many minority patients have not been able to relate to their medical provider. African-Americans, Hispanics, and Native-Americans together made up about one fourth of the total population in the U.S., yet these minority groups were underrepresented among physicians, dentists and other health professionals (Bureau of Health Professionals, 1990). Seven percent of U.S. physicians were African-American, Hispanic, or Native-American in 1990. Hispanics comprised only two percent of all physicians in 1990 (Betancourt et al., 2001). Five percent of U.S.

dentists were African-American, Hispanic, or Native-American in 1995 (American Dental Association, 1995). Eleven percent of all medical school graduates were from underrepresented minorities in 1997 (Association of American Medical Colleges, 1998). Minority under representation has existed among medical providers. The lack of minority representation among medical providers has caused barriers in health care delivery due to ethnic and cultural perceptions.

Differences in cultural perceptions and language have also created tertiary barriers for minorities who are trying to access health care (Betancourt et al., 2001). Patients reflected a higher customer satisfaction when they shared a similar Ethnic/Racial background with their health care providers (Saha, Komaromy, Koepsell, & Bindman, 1999). Spanish speaking Hispanic patients were more satisfied with their health care provider when they spoke the same language (Cooper-Patrick, 1999). Health care centers that focused on eliminating language barriers have improved access to health services. Medical centers that have become culturally sensitive have created greater health care access for their targeted patient populations.

United States Government's Role in Health Care Access

The U.S. Government has taken legislative action beyond Medicaid and Medicare programs, in order to reduce the primary health care access barriers. The U.S. Government has helped provide access to health care services to vulnerable populations. Conditions of employment affected whether or not minorities had adequate health insurance coverage. Group health coverage was available only to full-time workers and their families. That changed in 1986 with the passage of health benefit provisions in the

Consolidated Omnibus Budget Reconciliation Act (U.S. Department of Labor [U.S. DOL], 1999). Now group health insurance access was increased to include terminated employees or those who lost coverage because of reduced work hours. They could buy group health coverage for themselves and their families for limited periods of time, which increased the access to health care for these vulnerable populations (U.S. DOL, 1999).

To further the efforts on improving health care access for vulnerable populations, the Emergency Medical Treatment and Active Labor Act (EMTALA) was incorporated into the COBRA legislation of 1986 (Brown & Hash, 2002). It was incorporated in order to deter the discriminatory practice of some hospitals transferring, discharging, or refusing treatment to indigent patients. Indigent patients who came to the ER were not being seen because of the expensive medical services associated with diagnosing and treating these patients with urgent medical conditions. The Act was passed and applied to all hospitals that accepted Medicare. It was designed to protect all patients, and included those who used Medicaid. The Act protected the uninsured patient who came to a hospital seeking urgent medical services. EMTALA penalties have included fines and exclusion from the Medicare program for violations of the Act (Brown & Hash, 2002).

The three fundamental requirements intended by the Act forced hospitals to focus on Medicare services and provide emergent care. The first mandate required hospitals to provide an appropriate medical screening exam for patients who came to the ER for medical care. The patients went through a triage process when they were presented to the ER. Through the triage process, treatments were aligned to the most urgent cases first. The less emergent cases were treated later, with no one being turned away. The second

requirement focused on the patient who came to the hospital and the hospital determined that the patient had an emergency medical condition. The hospital had to treat and stabilize the emergency medical condition, or the hospital had the option to transfer the individual to a more specialized trauma center. The third requirement maintained that hospitals could not transfer a patient with an emergency medical condition that had not stabilized unless complying with transfer conditions (Brown & Hash, 2002).

Inappropriate ER use by patients has caused non-urgent cases to become a distraction in the utilization of emergent services. This has also led to longer waiting times, which has deterred some of the unnecessary ER use at some hospitals. Frustrated patients have located another ER provider where waiting times or triage processes do not pose as great a challenge for accessing health services (Richardson & Hwang, 2001). The U.S. government has played a role to improve health care access of the vulnerable populations, however barriers still exist.

Hospital Population Demographics in California and Michigan

White non-Hispanics were the predominant group that accessed health care services at OMCT in 1998. Other health care systems have also reflected that the White non-Hispanics were the predominant users of their medical services. The Stanford Health Services System hospital, located in Palo Alto, California, had a 1995 general patient population that was seventy percent White non-Hispanic (Stanford Health Services System, 1995). Six percent of Stanford Health Services System hospital's general patient population was African-American. They were underrepresented as compared to the 2000 U.S. Census. Hispanics represented fourteen percent of the patient

population. The Other category consisted of ten percent of the general patient population (Stanford Health Services System, 1995).

The University of Michigan Health System (UMHS) provided outpatient health care to slightly more than a third of a million people each year. This health system provided inpatient care to more than thirty thousand people from around the state and nation (University of Michigan Health System [UMHS], 2001). Eighty-one percent of the total Inpatient population was White non-Hispanic. African-Americans consisted of 10%, and the Hispanics made up only 1% of the total Inpatient population. Eight percent of the total Inpatient population was made up of the Other group. White non-Hispanics comprised 79.01% of the entire Outpatient population (UMHS, 2001). African-Americans made up 7.5% of the Outpatient population. The Hispanics represented only 0.65%, and the Other category consisted of 12.84% of the total Outpatient population. Hispanics and African-Americans were underrepresented in the UMHS patient population, relative to the 2000 U.S. Census. White non-Hispanics were slightly over represented compared to the 2000 U.S. Census.

The State of Michigan's 2000 Census reflected that Hispanics made up three percent of the entire population (UMHS, 2001). Fourteen percent of the state's entire population was African-Americans. The White non-Hispanics made up eighty percent of Michigan's total population. The Hispanics and African-Americans of UMHS' patient population were under represented relative to the state levels. The general patient population of UMHS, that included the ER, Inpatient, and Outpatient components, also reflected similar Ethnic/Racial proportions. The White non-Hispanics made up 79.01%

of UMHS' total patient population (UMHS, 2001). The African-Americans represented 7.53%, and the Hispanics consisted of 0.66% of the total patient population. The Other category accounted for 12.8% of UMHS' total patient population. White non-Hispanics had the most access to health care services, while the minority groups were less represented at the medical facilities. The lack of access to medical services has created health care disparities for the minority groups.

United States Census Bureau's National Population Demographics

Change in the national economy has affected access to health care. The changing population demographics have also altered the patient representation in health care systems. Three fourths of the total United States population was represented by White non-Hispanics in 1990 (U.S. Census Bureau, 2000). The African-American group made up the second largest group with 12% out of a total U.S. population of 248.7 million (Table 1). The Hispanic group represented 9% and the Other group comprised 4%. American Indian, Asian, Oriental, and the Other group data were aggregated into a single category in order to create the Other group.

The Other group was comprised of American Indians who were Alaskan Native, Native-American, or had origins in any of the original peoples of North America whom maintained cultural identification through tribal affiliations or community recognition. The Asian and Oriental categories were inclusive of being a Pacific Islander. It also included having origins in any of the original peoples of the Far East, Southeast Asia, Indian subcontinent, Pacific Islands, China, India, Japan, Korea, Philippine Islands, or Samoa. The White non-Hispanic group represented 72% of the total U.S. population of

270.9 million in 1998 (U.S. Census Bureau, 2000). The African-American group had the second largest group with 12% of the total U.S. population. The Hispanic group comprised of 11% and the Other group consisted of 5% of the total U.S. population in 1998 (Collins, Hall, & Neuhaus, 1999).

The White non-Hispanic group made up 70% of the entire U.S. population of 281.4 million in 2000 (U.S. Census Bureau, 2000). There was a slight decrease in White non-Hispanic representation in 1998. Twelve percent of the total U.S. population was African-American in 2000. This was a similar representation from 1990 and 1998. The Hispanic group's total increased to almost 13 percent, reaching a proportional representation similar to the African-American group. The rapid growth of Hispanic population has made them the second largest group represented in the U.S. Census. The Other group represented five percent of the total U.S. population in 2000. The U.S. Census projections have anticipated that the country's total population will have increased to 346.8 million by 2030, a growth of 28% from 1998 (U.S. Census Bureau, 2000). The White non-Hispanic group is anticipated to grow 7% from 1998. The African-American group is expected to grow 39% from 1998. The Hispanic group is expected to have a 113% increase from 1998. The Other group is expected to grow 132% from 1998 (Collins, Hall, & Neuhaus, 1999).

Texas Department of Health's Population Demographics of Texas

Sixty-one percent of the total Texas population of 16.9 million was comprised of White non-Hispanics in 1990 (Texas Department of Health [TDH], 2003). The Hispanics were the second highest represented group in Texas, making up one fourth of the total

population (Table 2). The 25% Hispanic representation in Texas was higher than the 9% Hispanic representation in the 1990 national population. The African-American group consisted of 12%, and the Other group had 2% of Texas' total population in 1990. The White non-Hispanic group made up 58% of the 19.7 million Texans in 1998 (TDH, 2003). The Hispanic group comprised of 28%, the second largest segment in the state. The African-American group consisted of 12%, and the Other group made up 2% of Texas' entire population.

The Ethnic/Racial proportions for the total population of Texas in 1999 were similar to the previous year. Fifty-seven percent of the total Texas population of 20.4 million consisted of White non-Hispanics in 1990 (TDH, 2003). Twenty-nine percent of the total population in Texas was Hispanic. The African-American group consisted of 11%, and the Other group made up 3% of Texas' population in 1999. The White non-Hispanic group still had the largest portion of Texas' total population with 53% in 2000. The Hispanic group made up the second highest represented group with 32% of the 20,851,820 people in Texas (TDH, 2003). The African-American group consisted of 12%, and the Other group comprised 3% of the total population in Texas.

The state's total population in 2001 had similar Ethnic/Racial proportions to 2000. Fifty-three percent of the 21.1 million Texans were made up of White non-Hispanics in 2001 (TDH, 2003). Thirty-two percent of the total population of Texas was comprised of Hispanics. The African-American group comprised of 12%, and the Other group consisted of 3% in 2001. Fifty-two percent of the 21.5 million Texans were represented by White non-Hispanics in 2002 (TDH, 2003). The Hispanic group made up one third of

the total population in Texas. The African-American group consisted of 12%, and the Other group comprised of 3% of the state's entire population in 2002. White non-Hispanics represented more than sixty percent of the population in Texas in 1990, dropping to almost fifty percent by 2002. Hispanics represented just over twenty-five percent of the Texas population in 1990. One third of the Texas population was Hispanic, in 2002.

Texas Department of Health's Population Demographics of Tarrant County

The Ethnic/Racial representative proportions in the Texas population paralleled those in Tarrant County. Tarrant County had a total population of slightly more than 1.1 million people in 1990 (TDH, 2003). The White non-Hispanic group made up almost three fourths of the total population of Tarrant County. Hispanics and African-Americans each represented 12% of the county's entire population in 1990 (Table 3). The Other group's 3% was the smallest represented segment. Seventy-one percent of the 1.3 million people in Tarrant County were of a White non-Hispanic origin in 1998 (TDH, 2003). The Hispanic group's 14% was the second largest segment. The African-Americans consisted of 12%, and the Other group made up 3% of Tarrant County's total population in 1998.

The Tarrant County population reached more than 1.3 million people in 1999. Seventy percent of the county's entire population was comprised of White non-Hispanics. The Hispanics consisted of 15%, and the African-Americans' 12% was representative of the third largest group (TDH, 2003). Three percent of the county's entire population was made up of the Other group in 1999. There was an increased growth in the Hispanic

population and a decrease in the proportion of White non-Hispanics by 2000. Sixty-three percent of Tarrant County's 1.4 million Texans were represented by White non-Hispanics in 2000 (TDH, 2003). In 2000, the Hispanics' proportion reached twenty percent and was the second highest represented group in the county. The African-American group comprised 13%, and the Other group's 4% made up the smallest segment of Tarrant County.

The demographic proportions of Tarrant County in 2000 were similar to the Ethnic/Racial representation in 2001. Sixty-two percent of the 1.4 million Texans of Tarrant County were represented by White non-Hispanics in 2001 (TDH, 2003). Twenty percent of the county's entire population was made up of Hispanics. The African-American group consisted of 13%, and the Other group comprised of 5% of the total Tarrant County population. By 2002, the total population had grown to just under 1.5 million for Tarrant County. The representation of White non-Hispanics declined, down to 61% of the total Tarrant County population in 2002 (TDH, 2003). The Hispanic group continued to grow in its' overall representation, reaching 21% in 2002. The African-American group's 13% made up the third largest segment. Five percent of the entire population of Tarrant County consisted of the Other group, which was the smallest segment.

The representation for the Hispanic group rose from 1990 through 2002. The proportion of the White non-Hispanic continued to decline during this period. The proportion dynamics in Tarrant County paralleled the growth and decline of proportions at the state and national levels. The growth of the African-American and Other group

remained steady throughout this timeframe. OHST will need to develop culturally-sensitive health care services to accommodate the growing Hispanic population. Hispanic patients will seek out medical providers who provide helpful services such as medical forms, signage, physicians, and interpreters that can communicate in Spanish. Health care organizations that have adjusted their processes for delivering medical services have expanded health care access. The adjustments to health care delivery processes have increased access to medical services when they have met the needs of the changing Ethnic/Racial representation in their communities.

Population Dynamics

Population data at the national, state, and county levels reflected that the White non-Hispanic group's proportion relative to the other groups has decreased, while the Hispanic group's proportion has continued to increase. The state of Texas and Tarrant County had a higher proportion of Hispanics than represented in the national population. They also had a lower proportion of White non-Hispanics relative to the national population. The Hispanic population in the U.S. grew rapidly, at a 39% growth rate, from the period of the 1990 and the 2000 U.S. Census (U.S. Census Bureau, 2000). This was in stark contrast to the less than 7% growth rate in the White non-Hispanic population for the same time frame (Mills, 2001). This dramatic growth of the Hispanic population was expected to continue at levels three to five times the rate of the non-Hispanic U.S. population, reaching 35.3 million in 2000 (TDH, 2003).

The Tarrant County Hispanic population is anticipated to reach twenty-three percent of the total population by 2005 (TDH, 2003). Twenty-six percent of Tarrant

County's total population is expected to be represented by Hispanics in 2010, a projected growth of 25% from 2002 (Table 4). The Hispanic population segment has grown faster than the other Ethnic/Racial segments from 1990 to 2000. It is with this emphasis that health service organizations have needed to anticipate the increasing medical needs in this growing segment of the population. The heath care sector may also need to plan for the health care needs of the changing population segments, especially if population trends continue as reflected in the census data.

This study focused on the 1998 through 2001 OHST medical services used by their patients. OHST may want to adjust their strategic planning based on how these services were utilized and by which racial and ethnic groups accessed health care. OHST may try to develop culturally-sensitive health care services to accommodate the growing Hispanic population of Tarrant County. Hispanic patients may tend to seek out medical providers who provide helpful services such as medical forms, signage, physicians, and interpreters that can communicate in Spanish. Health care organizations that have adjusted their processes for delivering medical services have expanded health care access. The adjustments to health care delivery processes have increased access to medical services when they have met the needs of the changing Ethnic/Racial representation in their communities.

CHAPTER IV

METHODOLOGY

Study Design

This was a descriptive study of the health services provided to patients at the Osteopathic Health System of Texas (OHST). Ethnic/Racial proportions and health care utilization activity were measured in order to analyze access patterns. The Osteopathic Medical Center of Texas (OMCT) was inclusive of Emergency Room and Inpatient acute care services provided in the hospital. OHST was developed to include all available services provided by all health network facilities in the ER, Inpatient, and referral based Outpatient components (Organization for Economic Co-operation and Development [OECD], 2000), (Figure 1). This retrospective study focused on all available services at OHST from 1998 through 2001, without limiting it to just the acute services of the OMCT hospital. This study included the 1998 through 2001 ER, Inpatient, and Outpatient services of OHST. The study was performed to determine the Ethnic/Racial proportions, insurance status, and health care utilization trends of the patient population of OHST. The Ethnic/Racial distribution of OHST's patient population was compared to Tarrant County's population distribution in 1998 through 2001. This comparison determined the levels of Ethnic/Racial regional representation and health care access levels. Access to OHST's medical services was also measured by comparing the observed 1999 through 2001 Ethnic/Racial and patient payment categories to the expected 1998 levels.

The 1998 patient population of Osteopathic Medical Center of Texas (OMCT) was assessed by OMCT and University of North Texas Health Science Center at Fort Worth, Texas (UNTHSC) staff in 1999 (Coustasse & Treviño, 1999). This assessment created the 1998 baseline information that was compared to the 1999 through 2001 patient services at OHST. The medical services provided to patient at OHST were assessed by Ethnic/Racial and patient payment categories. This assessment was carried out in order to determine Ethnic/Racial proportions and health care access patterns of the patient population. This study was conducted in order to gain understanding of Ethnic/Racial proportions and patient payment patterns of the hospital segment of the health system's population. Access to health care services was assessed by Ethnic/Racial category proportions and based on patient payment methods in the ER and Inpatient, and Outpatient areas.

The Tarrant County population data for 1998 through 2001 was obtained from the Texas Department of Health Census (TDH, 2003). The Tarrant Country information did not involve personal identifiers. The 1998 through 2001 information from the Meditech clinical database of OHST was classified as administrative data. The calendar year for each annual data set from 1999 through 2001 was January 01 through December 31. The results from this study were represented in an aggregate format. Meditech was the computer information system, network, and clinical database that OHST chose to implement into the organization. Meditech was utilized by OHST beginning in 1991. The information that was available from the clinical database dated back to 1991.

The health system information did not involve personal identifiers. The health system data was inclusive of all adults and children who used the ER, Inpatient, and Outpatient components. The total ER, Inpatient and Outpatient populations included repeat visits, even for the same ambulatory service or episodic description of illness or disease. The Institutional Review Board (IRB) at UNTHSC approved the administrative classification for this study. The IRB has designated this study as an exempt status, with no additional reviews required (project number 21-96).

Components of the Osteopathic Health System of Texas

OHST included the combined Outpatient, Inpatient and ER medical service components that made up the entire health care network (Coustasse & Treviño, 1999), (Figure 1). The health system added the Medical Center Pharmacy and the Ellis Child Development Center to the network. Designated referral based Outpatient services were also incorporated into the health system. These services included the One Day Surgery Center, Diagnostic Imaging Center, Hyperbaric Wound Therapy Center, Women's Diagnostic Breast Center, V.L. Jennings Outpatient Pavilion, Sleep Laboratory, Long-term Nursing Care Department, Sports Medicine and Rehabilitation of Texas Institute, Wellness/Fitness Center, and nine clinics throughout Tarrant County.

OHST was divided into ER, Inpatient, and referral based Outpatient components based on billing and services that were made available for the community. The non-referral based ER services were categorized as medical and paramedical services delivered to outpatients during an episode of curative care at the designated setting, and billed as an ER visit (OECD, 2000). The patients who presented to the ER went through

a triage process. The ER staff identified the most urgent cases, and determined what type of necessary care. The Inpatient services were structured to include patients who were formally admitted and hospitalized in the OMCT hospital for treatment and care, and stayed for a minimum of one night in the facility.

The referral based Outpatient services for OHST were designed for individuals who received medical and paramedical services. These services were delivered in a physician's private office, the hospital's designated outpatient center, or relevant departments. The spectrum of referral based Outpatient health services included same day surgery, non- emergent clinical care, diagnostic tests, and recurring therapy. These services were aggregated into the Outpatient category. The ancillary services such as blood testing and urine analysis were not included since they comprised less than five percent of all medical services.

Ethnic/Racial Categories

The Ethnic/Racial categories were used in the Meditech search for the ER, Inpatient, and Outpatient services provided to patients at OHST in 1998 through 2001. The 1998 through 2001 secondary data from Meditech was initially obtained from the patients (Coustasse & Treviño, 1999). This was a self-reported response in completing the necessary paperwork when entering OMCT. The chosen response was determined by the patient's own Ethnic/Racial perception. The Ethnic/Racial categories the patients had to choose from the admitting forms were White non-Hispanic, African-American, Hispanic, Asian, Oriental, American Indian, and Other.

The hospital defined American Indian as being an Alaskan Native, a Native-American, or having origins in any of the original peoples of North America who maintain cultural identification through tribal affiliations or community recognition (OECD, 2000). The Asian and Oriental categories were inclusive of being a Pacific Islander. This category also included having origins in any of the original peoples of the Far East, Southeast Asia, Indian subcontinent, Pacific Islands, China, India, Japan, Korea, Philippine Islands, or Samoa. The African-American category was inclusive of those individuals with origins in any of the black racial groups of Africa, or the English-speaking Caribbean. The Hispanic category included Mexican, Puerto Rican, Cuban, Central American, South American descent, other Spanish culture or origin regardless of race. The White non-Hispanic category included individuals having origins in any of the original peoples of Europe, North Africa, or the Middle East.

The White non-Hispanic, African-American, and Hispanic groups consisted of almost all of the patient population. All of the other represented groups made up a small portion of the patient population that would not be represented well on their own, so the Other group for this study was created to improve representation. The American Indian, Asian, Oriental, and Other groups' demographic information was combined to create the master Other group category.

Patient Payment Categories

The patient payment categories indicated how patients anticipated paying for OHST medical services in the ER, Inpatient, and Outpatient components. The patients paid by Self Pay, Managed Care, Medicaid, or Medicare (Coustasse & Treviño, 1999). The patients indicated in a self-reporting manner, their type of health coverage and their Ethnic/Race category. The Self Pay category included patients who did not have health insurance coverage, and might have had the means to pay for the medical services with their own money without the need for insurance. However, these patients typically did not have the money or insurance to pay for services. The health system usually had to count the Self Pay activity as a financial loss for patients who were not able to pay.

The Managed Care group was comprised of all commercial health insurance plans. The employee health plan for the hospital was included in the Managed Care group. The Medicaid category included the traditional Medicaid, as well as Managed Care Medicaid health plans (Coustasse & Treviño, 1999). The Medicare category consisted of the Traditional Medicare health coverage, Managed Care Medicare health plans, and Medicare risk patients. In assessing the data, commercial insurance, employee group insurance, and Blue Cross were grouped together under the Managed Care category. The Physician-Special Billing category involved clinical research and was not included in this study. Eleven percent of the total OHST services were covered by Workers Compensation, with only three percent in the ER and two percent of Inpatient services in 1998 and 2001. Workers Compensation patients were excluded because they were not a focus of this study.

Statistical Assessment

The 1998 baseline information was compared to the observed 1999 through 2001 levels. The 1998 OHST patient population distribution was compared the observed 1999 through 2001 OHST's patient population by Ethnic/Racial categories for the calendar year of January 01 through December 31. The Ethnic/Racial categories of the patient population at OHST were compared with the Tarrant County population proportions in 1998 through 2001. The distribution proportions for the 1999 through 2001 Ethnic/Racial categories were determined to be different if they did not parallel the 1998 proportions. The expected 1998 OHST payment levels were also compared with the observed 1999 through 2001 financial payment classes.

The patient payment categories were compared using proportions, the chi-square test (χ_2), and the *p*-value (*p*) in order to determine if any positive or negative changes were statistically significant at the alpha (α) = .01 level. The Utilization Rate Ratio (URR) represented the percentage of growth in payment category proportions. The URR reflected significant positive or negative growth if the χ_2 was significant at α = .01 alpha-level and the *p*-value < .01. The growth was relative to total volume fluctuations in the overall patient population. The changes in health coverage, represented by the financial payment classes, influenced the utilization patterns over time. The URR reflected the growth rate of the patient payment category that has changed in a positive or negative direction, from one year to the next.

Cross tablualtions using Epi-Info were constructed in order to compare the patient data from year to year. In executing the cross tabulations, the chi-square values were

computed, along with the *p*-values. The UUR was also computed using Epi-Info, along with the Confidence Intervals (C.I.). Epi-Info calculated the chi-square test at the alpha = .01 level. Epi-Info determined if the chi-square test was significant. The more conservative Yates Corrected chi-square values produced from the Epi-Info calculations were used to determine statistical significance, making it more difficult to reject the null hypothesis (Daniel, 1995). The critical value of χ_2 with the degree of freedom (*df*) = 1 was 6.635 at the $\alpha = .01$ level. The degree of freedom was based on the cross tabulation format of all the two-by-two tables used in this study. Statistical significance and rejection of the null hypothesis occurred if the chi-square value was greater than 6.635 at $\alpha = .01$, and had a *p*-value < .01, and with a degree of freedom $df = 1$. This critical value was referenced so that significance could be measured and the hypotheses could be tested (Daniel, 1995).

CHAPTER V

RESULTS

Volume of Patient Services

The total health services volume for OHST, which included the ER, Inpatient, and Outpatient components, was 66,354 in 1998. The health systems service volume increased each year, reaching 79,669 in 2001 (Table 5). The Outpatient services area made up the largest component with just over fifty percent of the entire health system's patients from 1998 through 2001 (Figure 2). The ER component was the second largest component of health services area, with just under one third of the total patients from OHST. The Inpatient component was the smallest of the three health system components utilized from 1998 through 2001. The Outpatient, ER, and Inpatient proportions remained similar from year to year. The 1998 Outpatient services volume of 39,090 increased each year, reaching 47,465 in 2001. The ER total volume was 19,423 in 1998 and increased by 20% in 2000. The ER volume declined to 23,006 in 2001. The 1998 Inpatient total patient volume of 7,841 grew by 15% in 2001.

General Patient Population

White non-Hispanics represented about two-thirds of the medical service utilization for the general patient population of OHST in 1999 through 2001 (Table 6). This was similar to the proportion levels of Tarrant County. African-Americans represented about one-fifth of all the health services used at OHST, which was an

over representation of this group relative to the surrounding Tarrant County population. The Hispanic group was underrepresented at about 15% compared to about a 20% average for Tarrant County. The Other group represented two percent of the general patient population at OHST, which was similar to the Tarrant County population.

Emergency Room

The White non-Hispanic group used the most ER services in 1998 through 2001. Fifty-seven percent of the 19,423 ER patients presented at OMCT were of White non-Hispanic origin in 1998 (Table 7). Hispanics comprised of 16% and African-Americans represented 24% of the entire ER patient services. The Other category accounted for only three percent of the ER patient population in 1998. Fifty-five percent of the 23,405 ER patients were White non-Hispanic in 1999. Eighteen percent of the total ER population was from the Hispanic group. African-Americans accounted for 22% and the Other category comprised of only 5% of the entire ER population in 1999. The White non-Hispanic group represented 56% of the 24,399 ER patients in 2000. Hispanics consisted of 20% which was the highest compared to their Inpatient and Outpatient utilization. African-Americans made up 22% of the entire ER patient population. The Other category accounted for 2% of the total ER patients in 2000. Fifty-four percent of the 23,006 ER patients were from the White non-Hispanic group in 2001. The Hispanic group consisted of 21% and the African-American group had 24% from the ER population. The Other category made up one percent of the total ER services in 2001.

Inpatient Care

White non-Hispanics comprised two-thirds of the entire 7,841 Inpatient services at OMCT in 1998 (Table 7). Hispanics consisted of 13% and African-Americans had 19% of the Inpatient services. Two percent of the total 1998 Inpatient utilization was represented by the Other group. White non-Hispanics represented two-thirds of the entire 8,176 Inpatient procedures in 1999. Hispanics comprised of 13% and African-Americans had 18%. The Other category accounted for only three percent of the total 1999 Inpatient services. Two-thirds of the 8,523 Inpatients in 2000 consisted of White non-Hispanics. Hispanics made up 14% and African-Americans had 18%. The Other category accounted for only two percent of the total Inpatient services in 2000. White non-Hispanics comprised two-thirds of the 9,198 Inpatients in 2001. The Hispanic group made up 14% and African-Americans had 18% of the total Inpatient procedures. The Other category accounted for two percent of the total Inpatients in 2001.

Outpatient Care

White non-Hispanics represented approximately three-fourths of the 39,090 OHST Outpatient services in 1998. The Hispanics group made up 10% and African-Americans had 15% of the Outpatient services (Table 7). The Other category accounted for only one percent of the total Outpatients in 1998. Seventy-three percent of the 42,078 Outpatients were White non-Hispanic in 1999. The Hispanics group comprised of 11% and African-Americans had 14% from the entire Outpatient utilization. Two percent of the total 1999 Outpatients comprised of the Other category. White non-Hispanics made up 72% of the 45,449 Outpatients services in 2000. Hispanics group represented 12%

and African-Americans had 14% of the total Outpatient utilization. The Other category consisted of 2% out of the total 2000 Outpatients. Seventy-two percent of the 47,465 Outpatients in 2001 were White non-Hispanic. The Hispanics made up 12% and African-Americans had 13% of the Outpatient services. The Other category comprised of three percent out of the entire Outpatient utilization of services in 2001.

Population Demographics of the Health Services Components

The White non-Hispanic group used the most ER services at OHST, even though they were slightly under represented in the patient population as compared to the Tarrant County population for 1998 through 2001 (Table 8). The African-American group was over represented in the ER, Inpatient, and Outpatient components of patient services, as compared to the Tarrant County population proportions for 1998 through 2001. The Hispanic group was under represented for the components of Inpatient and Outpatient services as compared to the Tarrant County population for 1998 through 2001. The White non-Hispanic Outpatients were over represented compared to the Tarrant County population in 1998 through 2001. The Other group had similar representation in the Outpatient area as compared to the Tarrant County population.

White non-Hispanic Emergency Service Coverage

The White non-Hispanic group relied heavily upon Managed Care to cover ER health services at OMCT (Figure 3). The White non-Hispanic patients utilized Managed Care 40.1% of the time to cover ER health services in 2000 (Table 9). The ER White non-Hispanic Managed Care category utilization increased from 1998 to 1999 (Table 10). The increase was impacted by the higher total 1999 White non-Hispanic ER population.

The two percent increase showed that the White non-Hispanics had an increased growth rate of five percent more ER Managed Care in 1999 as compared to 1998. The change in the 1998 to 1999 ER Managed Care levels reached the specified significance level, rejecting the hypothesis that the proportions were similar for each year (Table 10).

The ER White non-Hispanic Managed Care category increased from 37.8% in 1999, to 40.1% in 2000 (Table 11). The 2.3% increase reflected that the White non-Hispanics had an increased growth rate of 6% more ER Managed Care in 2000 to access health services, as compared to 1999. The ER White non-Hispanic Managed Care category increased from 35.8% in 1998, to 39.7% in 2001 (Table 13). The 3.9% increase indicated that the White non-Hispanics had an increased growth rate of 11% more ER Managed Care in 2001 to access health services, as compared to 1998 (URR = 1.11, [1.07-1.15], $\chi_2 = 38.03, p < .01$).

The White non-Hispanic group used less Medicaid to access ER services (Table 9). The White non-Hispanic ER Medicaid category decreased from 1998 to 1999 (Table 10). The decrease was impacted by the higher total 1999 White non-Hispanic ER population. The growth of the total 1999 White non-Hispanic population created a greater chance for the use of the Medicaid category. However there was a decline in the ER Medicaid category in 1999. The 1.8% decrease revealed that the White non-Hispanics had a reduced growth rate of 12% less ER Medicaid in 1999 to access ER health services, as compared to 1998. The change in the 1998 to 1999 ER Medicaid utilization reached the specified significance level, reflecting that the proportions were not similar for each year (Table 10). The White non-Hispanic ER Medicaid category

decreased from 15.5% in 1998, to 13.9% in 2001 (Table 13). The 1.6% decrease showed that the White non-Hispanics had a reduced growth rate of 10% less ER Medicaid in 2001 as compared to 1998 (URR = 0.90, [0.84-0.95], $\chi_2 = 12.34$, $p < .01$).

White non-Hispanics who accessed ER health care services with Medicare saw a gradual decrease in that category's utilization from 1998, dropping by 2.5% through 2001 (Fig. 3). The White non-Hispanic ER Medicare category decreased from 1998 to 2001. The 2.5% decrease reflected that the White non-Hispanics had a reduced growth rate of 11% less ER Medicare in 2001 to access ER health services, as compared to 1998 (Table 13).

African-American Emergency Service Coverage

Expected levels of patient payment category, determined from the 1998 ER patient population, were compared to the observed levels for 1999 through 2001. The level of Managed Care reliance grew each year for the African-American group in order to access health care (Table 9). The African-American group's ER Managed Care category increased from 1998 to 2001. The increase was affected by the higher total 2001 African-American ER population (Table 13). The 2.7% increase reflected that the African-American group had a growth rate of 10% more ER Managed Care in 2001 to access ER health services, as compared to 1998. The difference in the ER Managed Care coverage for 1998 and 2001 reached the specified significance level, rejecting the hypothesis that the proportions were similar for each year (URR = 1.10, [1.05-1.15], $\chi_2 = 20.14$, $p < .01$). The African-American ER Medicare category decreased from 20.6% in 1998, to 19.0% in 2001. The decrease was impacted by the higher total 2001 African-

American ER population. The 1.6% decrease revealed that the African-American group had a reduced growth rate of 8% less ER Medicare in 2001 to access ER health services, as compared to 1998 (Table 13). African-Americans did not heavily rely on ER Medicare and ER Medicaid in 2001 as compared to 1998.

Hispanic Emergency Service Coverage

The Hispanic group relied heavily upon Self Pay category in order to access ER medical care. Hispanics used the Self Pay category 41.5% of the time in 1998. The Hispanic group's ER Self Pay category decreased from 1998 to 2001 yet was still a prominent method of health care access (Table 9). The decrease was affected by the higher total 2001 Hispanic ER population. The 1.9% decrease indicated that the Hispanics had a reduced growth rate of 5% less ER Self Pay in 2001 to access ER health services, as compared to 1998. The change in ER Self Pay utilization reached the specified significance level, reflecting that the proportions were not similar for each year (Table 13).

The Hispanic ER Managed Care category increased from 24% in 1998, to 29.5% in 1999. The 5.5% increase revealed that the Hispanic group had an increased growth rate of 23% more ER Managed Care in 1999 to access ER health services, as compared to 1998 (Table 10). The ER Hispanic Managed Care category increased from 29.5% in 1999, to 33.6% in 2000. The 4.1% increase reflected that the Hispanic group had an increased growth rate of 14% more ER Managed Care in 2000 to access ER health services, as compared to 1999 (Table 11). The Hispanic group's ER Managed Care category also increased from 1998 to 2001 (Table 13). The seven percent increase

confirmed that the Hispanic group had an increased growth rate of twenty-nine percent more ER Managed Care in 2001 to access health services, as compared to 1998 (URR = 1.29, [1.24-1.35], $\chi_2 = 142.49, p < .01$). The Hispanic ER Medicaid category decreased from 1999 to 2000. The 4.7% decrease showed that the Hispanic group had a reduction in growth rate, using 21% less ER Medicaid in 2000 to access ER health services, as compared to 1999 (Table 11). The Hispanic ER Medicaid and Medicare categories decreased from 1998 to 2001 (Table 13). The 4.1% decrease indicated that the Hispanic group had a reduced growth rate of 17% less ER Medicaid in 2001 as compared to 1998 (URR = 0.83, [0.79-0.87], $\chi_2 = 57.69, p < .01$).

Other Group Emergency Service Coverage

The Other group also relied heavily upon Self Pay in order to access emergent medical services. The Other group's ER Self Pay levels decreased from 1999 to 2000, but were still a prominent method in accessing health care. The 8.4% Self Pay decrease for this period was also impacted by a decrease in the Other group's total ER population of 2000. The Other group had a reduction in growth rate of twenty-two percent less ER Self Pay in 2000 to access ER health services, as compared to 1999. The difference in 1999 and 2000 ER Self Pay coverage reached the specified significance level, indicating that the proportion levels were not similar for each year (Table 11). The Other group heavily relied upon Managed Care in order to access ER health care services until 2001 (Fig. 3). The Other group's ER Self Pay category increased from twenty-nine percent in 2000, to forty-two percent in 2001. The increase was impacted by the dramatically decreased total 2001 Other ER population. The decrease in the total Other group ER

population left less opportunity for the selection of the ER Self Pay category. However, with less Other group ER patients in 2001, the ER Self Pay category was chosen more often than the previous year. The thirteen percent increase showed that the Other group had a forty-five percent growth rate of ER Self Pay in 2001 to access health services, as compared to 2000 (Table 12). The Other group relied heavily upon Self Pay in order to access ER health services due to the dramatic drop in Managed Care coverage in 2001. The Other group's ER Self Pay category increased from 1998 to 2001. The 10.6% increase revealed that the Other group had an increased growth rate of 34% more ER Self Pay in 2001 to access ER health services, as compared to 1998 (Table 13).

The ER Managed Care category for the Other group decreased dramatically from 2000 to 2001. The 16.9% decrease indicated that the Other group had a decreased growth rate of 37% less ER Managed Care in 2001 to access ER health services, as compared to 2000 (Table 12). The ER Managed Care category for the Other group decreased from 1998 to 2001. The decrease in ER Managed Care Utilization for the Other group could be hypothesized as this segment of patients may have had inadequate health insurance coverage from the workforce or lack of access to government programs such as Medicaid. The small Other group sample size had fluctuations in which health services they utilized, which may be due to a lack in continuous health insurance coverage over longer periods of time. The 15.3% decrease reflected that the Other group had a reduced growth rate of 35% less ER Managed Care in 2001 to access health services, as compared to 1998 (Table 13). The ER Medicare category for the Other group increased from 1998 to 2001. The 5.4% increase showed that the Other group had

an increased growth rate of 59% more ER Medicare in 2001 to access ER health services, as compared to 1998 (Table 13). The Other group mainly used Self Pay and Managed Care in order to access ER health care services from 1998 through 2001. Three fourths of the Other group's health coverage comprised of Self Pay and Managed Care.

White non-Hispanic Inpatient Service Coverage

Patients without Medicare or Managed Care coverage had a difficult time in trying to access Inpatient medical services (Figure 4). Inpatient Managed Care coverage ranked second only to Inpatient Medicare for the White non-Hispanic group (Table 14). The White non-Hispanic Inpatient Managed Care category increased from 1998 to 2001. The 4.6% increase reflects that the White non-Hispanics had an increased growth rate of 15% more Inpatient Managed Care in 2001 to access Inpatient health services, as compared to 1998 (Table 18). The change in the Inpatient Managed Care coverage met the specified significance level, rejecting the hypothesis that the proportions were similar for each year (URR = 1.15, [1.09-1.22], $\chi_2 = 26.77, p < .01$). The White non-Hispanic Inpatient Medicaid category decreased from 1999 to 2000. The decrease was affected by the higher total 2000 White non-Hispanic Inpatient population. The 2.7% decrease indicated that the White non-Hispanics had a reduced growth rate of 25% less Inpatient Medicaid in 2000 to access Inpatient health services, as compared to 1999 (Table 16). The White non-Hispanic Inpatient Medicaid category increased from 2000 to 2001. The 3.1% increase revealed that the White non-Hispanics had an increased growth rate of 37% more Inpatient Medicaid in 2001 to access Inpatient health services, as compared to 2000 (Table 17).

The White non-Hispanic population accessed Inpatient health care services through Medicare about half the time, reaching 55.5% in 1998. White non-Hispanics who accessed Inpatient health care services with Medicare saw a gradual decrease in that category's utilization from 1998 through 2001 (Table 14). The White non-Hispanic group had less Inpatient Medicare coverage from 2000 to 2001. The 3.6% decrease showed that the White non-Hispanics had a reduction in the growth rate, with 7% less Inpatient Medicare in 2001 as compared to 2000 (Table 17). White non-Hispanics had a decrease in Inpatient Medicare coverage from 1998 to 2001 (Fig. 4). The 5.4% decrease reflected that the White non-Hispanics had a reduced growth rate of 10% less Inpatient Medicare in 2001 to access health services, as compared to 1998 (Table 18).

African-American Inpatient Service Coverage

African-Americans saw an increase in Inpatient Managed Care coverage from 1998 to 2001. The 3.1% increase reflects that the African-American group had a positive direction in growth rate of 15% more Inpatient Managed Care in 2001 compared to 1998. The difference in the 1998 and 2001 Inpatient Managed Care utilization satisfied the specified significance level, indicating tremendous change in this area (Table 18). African-Americans counted on Medicaid 26.7% of the time when accessing Inpatient services. This was the highest reliance upon Inpatient Medicaid compared to White non-Hispanics and Hispanics in 2001 (Table 14). The African-American Inpatient Medicaid category decreased from 1998 to 1999. The decrease was magnified by the lower total 1999 African-American Inpatient population. The 5.7% decrease showed that the African-American group had a reduced growth rate of 20% less Inpatient Medicaid in

1999 to access Inpatient health services, as compared to 1998 (Table 15). The African-American Inpatient Medicaid category increased from 2000 to 2001. The 4.4% increase reflected that the African-American group had an increased growth rate of 20% more Inpatient Medicaid in 2001 to access health services, as compared to 2000 (Table 17).

African-Americans relied heavily on Inpatient Medicare coverage from 1998 to 1999. The increase was affected by the lower total 1999 African-American Inpatient population. The 7.4% increase indicated that the African-American group had a growth rate in a positive direction with 16% more Inpatient Medicare in 1999 as compared to 1998 (Table 15). The African-American Inpatient Medicare category had a decline from 2000 to 2001. The 7.5% decrease revealed that the African-American had a reduced growth rate with 15% less Inpatient Medicare in 2001 to access Inpatient health services, as compared to 2000 (Table 17).

Hispanic Inpatient Service Coverage

The Hispanic group counted on Self Pay coverage 9.7% of the time in 1998. Hispanics utilized the most Inpatient Self Pay coverage of the three predominant groups, with just over 10% through 2001 (Table 14). Their 1998-proportion level of Inpatient Managed Care component for the patient population grew from 1999 through 2001. The Hispanic Inpatient Managed Care category increased from 1998 to 1999. The 6.2% increase reflected that the Hispanics had an increase in the growth rate with 25% more Inpatient Managed Care in 1999 as compared to 1998. The tremendous growth was reflected in the Inpatient Managed Care area for 1998 and 1999 because the specified significance level was met (Table 15). The Hispanic Inpatient Managed Care category

increased from 1999 to 2000. The 6.1% increase indicated that the Hispanics had a positive change in the growth rate with 19% more Inpatient Managed Care in 2000 as compared to 1999 (Table 16). The Hispanic Inpatient Managed Care category increased from 1998 to 2001. The 13.2% increase revealed that the Hispanics had a positive change in growth rate with 52% more Inpatient Managed Care in 2001 as compared to 1998 (Table 18).

Thirty-eight percent of the health coverage consisted of Inpatient Medicaid for the Hispanic group in 1998 (Table 14). Hispanics saw sharp reduction in their Inpatient Medicaid in 1999 through 2001. The 11.2% decrease reflected that the Hispanics had a reduction in the growth rate with 29% less use of Inpatient Medicaid coverage for Hispanics in 1999 as compared to 1998 (Table 15). The Hispanic Inpatient Medicaid category decreased from 1998 to 2001 (Table 18). The 14.4% decrease showed that the Hispanics had a reduced growth rate of 38% less Inpatient Medicaid in 2001 to access health services, as compared to 1998 (URR = 0.62, [0.59-0.66], $\chi_2 = 274.58, p < .01$).

Other Group Inpatient Service Coverage

The Other group's Inpatient Self Pay category decreased from 1999 to 2000. The lower total 2000 Inpatient population for the Other group affected the reduced Inpatient Self Pay coverage. The 11.5% decrease showed that the Other group had a reduced growth rate of 72% less Inpatient Self Pay in 2000 as compared to 1999. The difference in the 1999 and 2000 Self Pay coverage satisfied the specified significance level, and the proportion levels were not similar for each year (Table 16). The Other group's Inpatient Self Pay category also decreased from 1998 to 2001. The decrease was impacted by the

higher total 2001 Other group Inpatient population. The 2.1% decrease indicated that the Other group had a reduction in growth rate with 29% less Inpatient Self Pay being used in 2001 as compared to 1998 (Table 18).

The Other group's use of Managed Care to access Inpatient health services dropped drastically in 1999, and then saw a gradual rise each year after to 2001 (Fig. 4). The Other group's Inpatient Managed Care category decreased from 1998 to 1999. The 16.9% decrease revealed that they had a growth rate deduction with 36% less Inpatient Managed Care in 1999 to access Inpatient health services, as compared to 1998 (Table 15). The Other group's 1998 Inpatient Medicaid coverage was higher than the 1999 through 2001 levels. The Other group's Inpatient Medicaid category decreased from 1998 to 1999. The 16.5% decrease showed that the Other group had a decline in their growth rate with 66% less Inpatient Medicaid coverage used in 1999 compared to 1998 (Table 15). The Other group's Inpatient Medicaid category decreased from 1998 to 2001 (Table 18). The 4.2% decrease confirmed that the Other group had a reduced growth rate with 17% less 2001 Inpatient Medicaid coverage as compared to 1998 (URR = 0.83, [0.78-0.89], $\chi_2 = 27.38, p < .01$). The Other group's Inpatient Medicare category increased from 1998 to 2001. The 6.6% increase reflected that the Other group had an increased growth rate of 33% more Inpatient Medicare usage in 2001 to access Inpatient health services, as compared to 1998 (Table 18). The Other group had some changes in their health care coverage status in 1998 through 2001, but the small sample sizes were unreliable.

White non-Hispanic Outpatient Service Coverage

The Outpatient component of the health system provided the largest volume of medical services in 1998 through 2001. White non-Hispanics had the most access to Outpatient services (Figure 5). These services were primarily obtained through Managed Care coverage (Table 19). The Outpatient Managed Care utilization for the White non-Hispanic group increased from 55.2% in 1998 to 58% in 1999. The 2.8% increase showed that the White non-Hispanic group's Outpatient Managed Care had a growth rate of 5% in 1999 as compared to 1998 (URR = 1.05, [1.04-1.07], $\chi_2 = 48.02$, $p < .01$). The difference in the 1998 and 1999 Outpatient Managed Care coverage reached the specified significance level, rejecting that the proportions were parallel for each year (Table 20). The Outpatient Managed Care category for the White non-Hispanic group increased from 1999 to 2000. The 1.5% increase indicated that the White non-Hispanic group's Outpatient Managed Care area had a positive utilization growth rate of 3% more in 2000, as compared to 1999 (Table 21).

The Outpatient Managed Care coverage for the White non-Hispanic group decreased from 2000 to 2001. The decrease was affected by the higher total 2001 White non-Hispanic group Outpatient population. The 1.6% decrease reflected that the White non-Hispanic group's Outpatient Managed Care area had a negative growth rate of 3% in 2001 as compared to 2000 (Table 22). The Outpatient Managed Care utilization for the White non-Hispanic group increased from 1998 to 2001 (Table 23). The 2.7% increase revealed that the White non-Hispanic group's Outpatient Managed Care area had a

positive growth rate of 5% in 2001 as compared to 1998 (URR = 1.05, [1.03-1.06], χ_2 = 44.97, $p < .01$).

White non-Hispanics used less Outpatient Medicaid in 1998 to 1999. The 1.6% decrease reflected that the White non-Hispanic group's Outpatient Medicaid area had a growth rate reduction of 19% less for 1999 as compared to 1998 (Table 20). The Outpatient Medicaid category for the White non-Hispanic group decreased from 1999 to 2000. The decrease was magnified by the higher total 2000 White non-Hispanic group Outpatient population. The 0.7% decrease confirmed that the White non-Hispanic group's Outpatient Medicaid area had a negative utilization growth rate of 11% more in 2000 as compared to 1999 (Table 21).

The Outpatient Medicaid category for the White non-Hispanic group increased from 2000 to 2001. The 0.8% increase revealed that the White non-Hispanic group's Outpatient Medicaid area had a utilization growth rate increase of 14% in 2001 as compared to 2000 (Table 22). The Outpatient Medicaid category for the White non-Hispanic group decreased from 1998 to 2001 (Table 23). The 1.5% decrease showed that the White non-Hispanic group's Outpatient Medicaid area had a declining utilization growth rate of 18% less in 2001 as compared to 1998 (URR = 0.82, [0.77-0.86], χ_2 = 49.01, $p < .01$). The Outpatient Medicare category for the White non-Hispanic group decreased from 1998 to 2001. The 1.1% decrease determined that the White non-Hispanic group's Outpatient Medicare area had a reduced utilization growth rate of 3% less in 2001 in accessing Outpatient health services, as compared to 1998 (Table 23).

African-American Outpatient Service Coverage

The expected Outpatient proportion levels, derived from the 1998 Outpatient population, were compared to the observed 1999 through 2001 levels. The African-American group used Self Pay coverage 2.1% of the time in order to access Outpatient services. This Self Pay level was similar to the 1999 through 2001 levels of the African-American Outpatient population (Table 19). Their 1998 proportion of Outpatient Managed Care coverage of the patient population rose each year through 2001. The African-American group's 1998 reliance on Outpatient Medicaid coverage remained about the same from 1999 through 2001. Their 1998 proportion of Outpatient Medicare utilization also stayed about the same from 1999 through 2001.

Hispanic Outpatient Service Coverage

The Hispanic group relied upon Outpatient Managed Care coverage 53% of the time in 1998. This was their lowest level of Outpatient Managed Care utilization, and it rose each subsequent year through 2001. The Outpatient Managed Care category for the Hispanic group increased from 1998 to 1999. The 5.2% increase reflected that the Hispanic group's Outpatient Managed Care area had a utilization growth rate in a positive direction of 10% more in 1999 as compared to 1998. The difference in the Outpatient Managed Care area indicated that the specified significance level was reached, rejecting that the proportions were similar for each year (Table 20).

The Outpatient Managed Care category for the Hispanic group increased from 1999 to 2000. The 3.2% increase confirmed that the Hispanic group's Outpatient Managed Care area had a utilization growth rate increased of 6% more in 2000 as

compared to 1999 (Table 21). The Outpatient Managed Care category for the Hispanic group increased from 1998 to 2001 (Table 23). The 9.1% increase showed that the Hispanic group's Outpatient Managed Care area had a positive utilization growth rate of 17% in 2001, as compared to 1998 (URR = 1.17, [1.13-1.22], $\chi_2 = 81.04, p < .01$).

The Outpatient Medicaid category for the Hispanic group decreased from 1998 to 1999. The 3.2% decrease revealed that the Hispanic group's Outpatient Medicaid area had a reduced utilization growth rate of 15% less in 1999 as compared to 1998 (Table 20). The Outpatient Medicaid category for the Hispanic group decreased from 1999 to 2000. The decrease was impacted by the higher total 2000 Hispanic group Outpatient population. The 2.5% decrease indicated that the Hispanic group's Outpatient Medicaid area had a negative utilization growth rate of 14% less in 2000 as compared to 1999 (Table 21). The Hispanic group utilized Outpatient Medicaid services 15.3% of the time in 2000, and accessing health services through this method dropped to 14.6% in 2001. The Outpatient Medicaid category for the Hispanic group decreased from 1998 to 2001 (Table 23). The 6.4% decrease reflected that the Hispanic group's Outpatient Medicaid area had a utilization growth rate reduction of 31% less in 2001 as compared to 1998 (URR = 0.69, [0.64-0.76], $\chi_2 = 67.68, p < .01$).

Other Group Outpatient Service Coverage

The Other group used less Outpatient Self Pay coverage in 1998 to 2001. The 2.6% decrease showed that the Other group's Outpatient Self Pay area had a lower utilization growth rate of 60% less in 2001 as compared to 1998. The specified significance level was met, and the Outpatient Self Pay utilization did not have similar

proportions in 1998 and 2001 (Table 23). Their 1998 proportion of Outpatient Managed Care coverage was lower, yet remained consistent in the 1999 through 2001 levels.

The Other group had a greater reliance on Outpatient Medicaid coverage in 1998 than in 1999 through 2001. The Outpatient Medicaid category for the Other group decreased from 1998 to 1999. The decrease was affected by the higher total 1999 Other group Outpatient population. The 5.1% decrease indicated that the Other group's Outpatient Medicaid area had a reduced utilization growth rate of 36% less in 1999 as compared to 1998 (Table 20). They relied upon Medicare coverage 15.5% of the time in 1998, and remained at similar levels in 1999 through 2001 Outpatient Medicare component of the patient population. The Outpatient volume was anticipated to be higher than the Emergency Room (ER) and Inpatient areas of OHST for 1998 through 2001.

The distribution of the health care payment activity in Texas reflected that patients heavily relied on Managed Care in 1998 and remained steady in 2001 (Table 24). The 1998 Medicaid coverage level decreased for Texans in 2001. The total patient population of OHST relied on Managed Care and Medicare to cover medical costs in 1998 and 2001, and saw a decrease in Medicaid coverage. The ER, Inpatient and Outpatient areas of OHST saw the growth of Managed Care coverage and the decline of Medicaid utilization in 1998 and 2001. Managed Care coverage continued to expand for the Hispanics, African-Americans, and White non-Hispanics at OHST in 1998 and 2001 (Table 25). Hispanics saw a reduction of Medicaid utilization in the ER, Inpatient and Outpatient areas.

The results of the hypotheses in this study included:

- The distribution of the Ethnic/Racial proportions for the OHST general patient population did not parallel the Tarrant County population proportions for 1998 through 2001.
- The White non-Hispanic group of OHST had a greater representation than the African-American, Hispanic, and Other groups in the ER, Inpatient, and Outpatient areas for 1998 through 2001.
- The distribution of the Ethnic/Racial proportions for the ER, Inpatient, and Outpatient populations of OHST were not similar to the Tarrant County population proportions for 1998 through 2001.
- The distribution of the 1999 through 2001 OHST patient payment proportions were not parallel to the 1998 baseline levels.
- The Hispanic and Other groups had a lower level of health insurance coverage, and a higher reliance on out-of-pocket expenses.
- Hispanics and African-Americans had a high reliance upon Medicaid in 1998 through 2001, however the levels decreased with a shift towards greater Managed Care coverage.

CHAPTER VI

DISCUSSION

The health status of the community and the cultural views towards health care can affect the demographic representation in use of ER, Inpatient and Outpatient facilities. The confidence level that the patient has in the medical provider may have been an indicator to whether or not patients feel they could have accessed health services. The patient's confidence level in the health system may have influenced the Ethnic/Racial representation and volume observed at OHST. The Hispanic group had less access to private health insurance and Medicare coverage, and seemed less likely to be admitted for Inpatient services than White non-Hispanics. This could be hypothesized as being due to the under represented Hispanics not feeling comfortable with culturally insensitive health facilities or having constricted health care access. The Hispanic group may have felt the OHST facilities were culturally insensitive and chose to go to another provider. The Hispanic group relied heavily upon Medicaid to access medical care, however OMCT health providers might not have been as willing to accept these patients. The available payment options for medical services and the strength of the relationship the patient has with medical providers might have influenced the demographic representation of the ER, Inpatient, and Outpatient populations.

The Hispanic population continued to grow in the Tarrant County population from 1998 through 2001. This growth was not reflected at OHST. The ER's Hispanic

proportion was similar to the Tarrant County levels in 1998 to 2001. Hispanics were underrepresented in the Inpatient and Outpatient components of OHST relative to the Tarrant County population proportions. The White non-Hispanic and the African-American groups had more health care coverage options available to them compared to the Hispanic and Other groups. White non-Hispanics and African-Americans were able to depend on Managed Care and Medicare instead of relying on Self Pay. The decrease in the ER volume could have been related to a healthier community that had fewer traumatic patients. The ER volume could have been reduced by efforts to minimize the utilization of emergent services. The Inpatient area continued to be the smallest component of the health system. The health system could have emphasized reducing the more costly Inpatient services. The Outpatient area has continued to grow. Patients may have been shifted away from the more expensive Inpatient and ER services towards the Outpatient services. The Tarrant County population continued to grow, along with the increased overall patient load at OHST. The populations for the Inpatient and Outpatient components were expected to grow, however there was a decline in the ER services starting in 2001.

Managed Care has been an increasing presence in the Fort Worth and Dallas health care sector. The OHST saw an increased presence of Managed Care in how Hispanic, African-American, and White non-Hispanic patients accessed medical services in 1998 through 2001. The ER Managed Care category for the Other group decreased from 1998 to 2001, however there were extreme fluctuations in the relatively small sample sizes from year to year which may suggest a lack of continuous health insurance

coverage for these patients. The Other group's small sample size fluctuations in the ER Managed Care category make their results not as reliable as the comparison groups.

There was a general decline in the use of Medicaid coverage from 1999 through 2001, particularly for the Hispanic population of this hospital system. The decline might have involved a lack of program qualification awareness, more stringent state budgets, or fewer qualified recipients. The requirements may have become more stringent and changed in how health services might be available to the poor or immigrant section of the population. The uninsured portion of the population may not have applied possibly due to changes in welfare reform, immigration status, fear of deportation, and behavioral or pride issues. The patient population sub-groups most affected by these coverage changes were the minorities.

Many employers have downsized, filed for bankruptcy, or closed for business because of the frail economy. The weakened economy may have contributed to a larger number of people who have been laid off and are uninsured or underinsured patients. Health insurance premiums have been on the rise, and there has been less access to various health plans and welfare services. There may also be an increased demand to access health services through Medicaid because of more challenging economic situations. The Hispanic group relied heavily upon Medicaid to access health services at OHST, however the utilization has declined from 1998 through 2001. Hispanics relied heavily upon Medicaid for accessing medical care, making up approximately fifty-eight percent of Texas Medicaid beneficiaries in 1999 (Kenny, Dubay, & Haley, 2000). Lapses have occurred in sustaining a continuum of health services that could improve the

uninsured and underinsured patients' quality of life through such efforts as providing health education for preventing disease. Good health status can be sustained by creating greater community participation in health education, which has been vital in areas such as pre-natal care. Chronic diseases such as diabetes can be targeted by providing a continuum of health care access to the at-risk and undeserved populations.

Higher birthrates and the increased immigration to the U.S. have aided the growth of the Hispanic population. Many Hispanic immigrants, especially Mexican Americans, have settled in Texas. Many of the new immigrants have lacked adequate health care. For the undeserved portion of the population, the difference in the levels of health care coverage may have been related to employment status, such as low-skilled or temporary jobs. It also may have been related to low educational levels in the U.S. These vulnerable populations are challenged with the task of securing employment that will provide affordable and adequate health care benefits. The majority of the primary employment areas of Mexican Americans have been the sector of low skilled jobs, which may provide only a cash-in-hand payment. This leaves the worker completely responsible for food, housing and health care costs. Hispanics represented about thirty-eight percent of uninsured Texans in 2000, depending on Self Pay to access health care (Texas Institute for Health Policy Research, 2000). The Hispanic group at OHST relied heavily upon Self Pay in 1998 through 2001 to access health services at OHST, using cash to pay for medical treatment.

Medical centers could develop new opportunities and services that may be appropriate and adequate to facilitate improved health care access and coverage for

Hispanics in ER, Inpatient, and Outpatient situations. The Robert Wood Johnson Foundation has supported programs to assist health centers in creating a more sensitive health care setting for patients where English is a secondary language. The administration at OHST's interest in improving services for the rapidly growing Racial/Ethnic groups is important to securing the viability of the health system. The Hispanic group was under represented at OHST, possibly because they felt uncomfortable accessing medical care with this health network and decided to go to a more culturally sensitive provider. The School of Public Health, at UNTHSC in conjunction with the Robert Wood Johnson Foundation, can support a program that has created objectives to target and remove language barriers. OHST can adopt policies that improve the access and delivery of health services with the elimination of the targeted barriers. Medical forms and signage in languages other than English that can be incorporated into the ER, Inpatient and Outpatient settings could be useful in fostering a culturally sensitive environment at OHST. Interpreters and telephone services in languages other than English could also be provided to accommodate the patients. The health care staff and medical providers can be formed to represent the populations being served and assist in supporting cultural sensitivity. Culturally-friendly referral services can be developed so that the patients can feel more comfortable in utilizing the health network.

The African-American group was over represented at OHST in 1998 through 2001; and it could be hypothesized that they have developed a confident relationship with the OHST clinic in their community and feel comfortable with the communication and

interaction process in accessing health services. The OHST clinics in the African-American communities have a practice of referring their patients to the osteopathic hospital and other ancillary facilities. The OHST clinics in the Hispanic communities also need to develop the practice of referring their patients to the osteopathic hospital and other ancillary facilities after the establishment of a culturally sensitive environment. Health professionals who have identified and targeted barriers can reduce those obstacles to accessing health services. Those in leadership roles who have reviewed how to improve health care access can identify and adjust the accessibility and delivery processes of medical services.

CHAPTER VII

LIMITATIONS

This study contained limitations that should be taken into consideration when reviewing the results. These limitations may have impacted the internal and external validity of the results. Some of the limiting factors were external to OHST and could not have been controlled, however they are mentioned as possible threats to validity. These limitations have reflected the complexities involved in the social, cultural, financial, and organizational areas of health care.

Many undocumented workers have entered the U.S. from Mexico, Central Mexico, and South America. The state and county census data may not have completely reflected their contribution to the total population. Undocumented workers may still have used available area health services, however they may due so anonymously and pay in cash in order to avoid any complications. Vulnerable minority populations can be difficult to track, and this may have created a lack of representation in their use of health services.

Some patients may have had biases towards or may dislike teaching hospitals or osteopathic health systems. These perceptions may have affected what types of patients were represented. External validity was not certain, as other hospitals may not be the same size in terms of total patient volume, or the number of patient beds. The findings in this study could not be generalized to different types and sizes of medical centers due to the uncertainty of the external validity. The presence of higher trauma-level ER centers

in the area may have contributed to a different type of patient representation presented to the ER of OMCT.

The way in which patients perceive their origin may have confounded the representation in the Ethnic/Racial category. The lack of cultural sensitivity in medical facilities may have had an effect on the true representation of cases screened, admitted, and treated. Non-sampling error may have occurred if patients filled out the forms incorrectly. They could have withheld true information that would have affected the data. Recall and response bias also could have been present as part of the patient's self reporting efforts.

Information could have been entered incorrectly into the Meditech database system. The complete numerical counts and descriptions of patient cases could contain errors. The Other group had a small percentage of patient volume, leading to unreliable sample sizes relative to the other groups. This unreliability could have lead to inconsistent or false results. The validity of the results might have been limited because variables such as socioeconomic status, gender, age, and patient geographical characteristics were not included and controlled for in this study.

Forces external to OHST, such as legislative mandates, economic conditions, and available health products and services have affected how the patient population accesses health care. The patient may have been injured in an auto accident, at work, or while at home, and this may impact the payment methods used to access medical services. Workers Compensation was not a focus of this study, however it accounted for up to eleven percent of the medical services at OHST, with six percent from Outpatient

services. The Workers Compensation coverage may provide insight into which Racial/Ethnic groups relied on this coverage in order to access health services. Available transportation to medical facilities in both urban and suburban settings might have influenced which hospitals the patients use. High ambulance loads for the area have shifted the more traumatic cases to the high-level trauma centers in the area, and left OMCT with less traumatic cases. Less access to medical care at other facilities, possibly due to longer waiting times, administrative hassles, or poor customer service, may have caused difficulty in using the chosen ER. This potentially could have lead to a shift in ER patients from other hospitals over to OMCT's ER. Some health systems have avoided certain types of situational patterns that have emerged from patients who have tried to access health services by using Medicaid, or may be uninsured and fall into the Self Pay category. Patients who anticipated having health care coverage through Medicaid or Self Pay have not always paid for their medical services. The health systems have absorbed those uncovered costs in the past and have tried to minimize those occurrences. Those types of patients, who have been avoided or not welcomed at other health systems, may feel more confident and comfortable in accessing health services at OHST due to the clinic referral system.

The community clinics of OHST may have influenced the volume levels seen in the ER, Inpatient, and Outpatient health service areas. There are seven teaching clinics that are affiliated with UNTHSC, and their educational focus may have impacted the volume of patients entering the OHST network. The Berry Street clinic of OHST, located in the southeast area of Fort Worth, has predominately consisted of African-

American members of the community. This clinic has an established relationship of over thirty years with this section of the community, and many ER and Outpatient referrals come from this area. The southeast section of this community may be less hesitant to use the health services at OHST relative to other area health care systems because of the strong relationship. This population could be sicker or respond rapidly to illness, resulting in higher representation at OHST.

The Northside clinic of OHST, located in the north central section of Fort Worth, has served the predominantly Hispanic population in this area. Not as many Hispanic referrals were made to the ER and Outpatient areas of OHST. This portion of the patient population may not feel as comfortable or willing to use services at OHST. They may be referred outside this system, to more culturally established health care providers. The Hispanics in the north central area of the Fort Worth community might have less severe illness or less traumatic medical situations that might relate to under representation at OHST. This Hispanic population might not seek medical attention as quickly as other Ethnic/Racial groups due to cultural perceptions or barriers to health care access. It has been difficult to clearly define the extent to which this may be taking place, due to the confidentiality that is placed on the physicians' referral activity throughout OHST. The physician-patient relationship needs to be protected and the information has been confidential. The comfort level and confidence in being able to access health services has to be supported in order to uphold the patient's autonomy in health care.

The total health services volume for OHST included the ER, Inpatient, and Outpatient populations. The ER, Inpatient, and Outpatient populations could possibly

have the same patient accessing various services throughout the year. The total utilization of services is counted in this study, however it is not an exact count of the number of patients who used the system because there could be repeat visits by the same patient, creating an inflated patient count. A patient who used the ER services might have also used inpatient and outpatient services to recover from the health situation. The total volume of services might have increased for the health system, however the actual number of patients may have stayed the same. This study focused on assessing the access to health care services and analyzed the payment methods of the Racial/Ethnic groups that utilized those services for the specified years. This study was not intended to provide an exact count of patients for a particular calendar year, and patient confidentiality laws placed restrictions on determining repeat patients and services as defined by the patient's medical records.

The information for the 1990 patient population at OHST was not available in order to compare it with the 1990 national census, state, and county populations. The Meditech database contained health system information that dated back to 1991. It was not possible to compare the available 1990 state and county census information to the 1990 OHST patient population. This could have provided a more comprehensive look at those populations over time. The financial information of OHST was classified as confidential and was not available. It was not possible to validate if patients actually paid for medical services in the way they anticipated having health care coverage.

CHAPTER VIII

CONCLUSION

This study revealed that health care access disparities exist among the Ethnic/Racial groups for the patient population at OHST. The Ethnic/Racial proportions were not similar in the general patient population of OHST and the Tarrant County population for 1998 through 2001. The African-American group was over represented relative to the surrounding Tarrant County population and it could be hypothesized that this may have occurred due to a strong relationship with the surrounding OHST clinics. The Hispanic group was underrepresented compared to Tarrant County, possibly due to a lack of culturally sensitive health services at OHST. The health services volume was the highest in the Outpatient area than in the ER and Inpatient areas of OHST for 1998 through 2001, and could be hypothesized that this may have occurred due to a shift in high-cost inpatient services towards the more cost-effective outpatient area. Health care organizations may have focused on reducing costs through shifting patient volume towards the more economical Outpatient area, rather than the more costly ER and Inpatient services. In the ER, Inpatient, and Outpatient areas for 1998 through 2001, health care access was higher for the White non-Hispanic group than the African-American, Hispanic, and Other groups. This could possibly be attributed to the White non-Hispanics having adequate health insurance coverage through better employment situations or having access to government programs such as Medicare. The Hispanic,

African-American, and the Other groups had less access and utilization of medical services in the ER, Inpatient, and Outpatient areas and could be hypothesized that this took place due to a lack of access to adequate health insurance through employers. It may also be attributed to a lack of access to government welfare programs such as Medicaid due to welfare reform, more stringent qualifying requirements, or a fear of deportation.

The ER, Inpatient, and Outpatient components of OHST did not exhibit similar Ethnic/Racial proportions relative to the Tarrant County population for 1998 through 2001. White non-Hispanics were underrepresented in the 1998 through 2001 ER patient population as compared to the 1998 through 2001 Tarrant County population, possibly due to a lack of cultural sensitivity at OHST or inadequate health insurance coverage. The African-American group was over represented in the 1998 through 2001 ER, Inpatient and Outpatient components of the patient population as compared to the Tarrant County population, possibly due to a strong relationship with the area OHST clinics that provide referrals in accessing OHST services. The Hispanic group was underrepresented in the 1998 through 2001 Inpatient and Outpatient components of the patient population as compared to the 1998 through 2001 Tarrant County population. The White non-Hispanic group was over represented in the 1998 through 2001 Outpatient population as compared to the Tarrant County population, and could be hypothesized that this is a reflection of their adequate health care insurance and easy access to government programs such as Medicare. The Other group had similar representation in the 1998

through 2001 Outpatient component of the patient population as compared to the 1998 through 2001 Tarrant County population.

The 1998 OHST patient payment proportions were not similar to the 1999 through 2001 levels. Hispanic patients did not use ER Managed Care as frequently as White non-Hispanics in 1998, however accessing health care using Managed Care steadily climbed through 2001 possibly due to a strong managed care organization presence in Tarrant and Dallas Counties. Hispanics demonstrated an increased utilization for ER Managed Care in 2001 from 1998, surpassing the African-American population. The rapid growth of the Hispanic group, the increasing presence of managed care organizations, and the Hispanics propensity to utilize the ER as a primary care provider may explain the rise in the ER Managed Care utilization. The Hispanics' 1998 proportion level of Inpatient Managed Care component for the patient population, expanded over time, from 1999 through 2001. The African-Americans also saw increased access to health services by way of Managed Care despite a slight drop in 1999. The White non-Hispanic, African-American, and Hispanic groups had significant growth and reliance upon accessing more medical services through Manage Care coverage from 1998 through 2001 for the ER and Inpatient areas. The White non-Hispanic and Hispanic groups had significant growth and relied upon accessing more medical services through Manage Care coverage from 1998 through 2001 for the Outpatient area.

The use of Managed Care increased for all the target populations for 1998 through 2001. The increased health services access coverage using Managed Care was offset by the reduced Medicaid coverage. The Hispanic group frequently used Medicaid in order

to access ER, Inpatient, and Outpatient health care services in 1998. However, by 2001 Managed Care became the more common way of payment, thus creating a shift in how ER and Inpatient costs were covered less through Medicaid. The Hispanic group's use of Medicaid coverage for accessing health services in the ER, Inpatient, and Outpatient areas declined from 1998 through 2001. This decline could be hypothesized as less availability of Medicaid services due to states tightening their budgets and not having enough available health services. Welfare reform, more stringent requirements, and the fear of deportation could also possibly explain the decline in Medicaid coverage for Hispanics. The Hispanic group's 1998-proportion level of the Inpatient Medicaid component of the patient population dropped drastically from 1999 through 2001. The Hispanic ER Medicaid category decreased from 1998 to 2001. The White non-Hispanic group also had a decline in the use of Medicaid to pay for Outpatient health services from 1998, to 2001. The White non-Hispanic and Hispanic groups saw increased reliance upon Managed Care in order to access Outpatient health services. At the same time, these groups saw a decrease in Medicaid coverage.

In 1998 and 2001, the Hispanics were the most reliant upon Self Pay coverage for accessing ER health services, with the Other group also relying heavily on Self Pay. The Other group saw a reduction of Inpatient Self Pay access to Outpatient health services, as Managed Care was the predominant coverage. The Hispanic group had the highest Inpatient Self Pay utilization in 1998, and has remained the highest of the three predominant groups through 2001. The Hispanics predominantly provided cash payments when available, and this activity shows inadequate health insurance and a lack

of appropriate health care access at OHST. White non-Hispanics who accessed Inpatient health care services with Medicare saw a gradual decrease in that category's utilization from 1998 through 2001. The White non-Hispanic group saw a decreased reliance upon Inpatient Medicare in order to access health services, though that was still a predominant method of payment for that group. The Hispanic, African-American, and Other groups had less health care access overall than were their White non-Hispanic counterparts when entering the ER, Inpatient, and Outpatient components of OMCT.

APPENDIX

Table 1

Total Population of the United States

Ethnic/Racial Group	1990	%	2000	%
White Non-Hispanic	188,128,296	75%	198,177,900	70%
African-American	29,216,293	12%	35,383,751	13%
Hispanic	22,354,059	9%	35,305,818	12%
Other	9,011,225	4%	12,554,437	5%
Total	248,709,873	100%	281,421,906	100%

Note: Source of Data is from the U.S. Census Bureau, 2000.

Table 2

Total Population of Texas

Ethnic/Racial Group	1990	%	1998	%	1999	%	2000	%	2001	%
White Non-Hispanic	10,308,444	61%	11,386,727	58%	11,487,818	57%	11,074,716	53%	11,126,485	53%
African-American	1,980,693	12%	2,286,148	12%	2,312,046	11%	2,421,653	12%	2,453,860	12%
Hispanic	4,339,900	25%	5,593,455	28%	5,735,425	29%	6,669,666	32%	6,884,165	32%
Other	357,473	2%	493,284	2%	508,852	3%	685,785	3%	710,771	3%
Total	16,986,510	100%	19,759,614	100%	20,044,141	100%	20,851,820	100%	21,175,281	100%

Note: Source of Data is from TDH, 2003.

Table 3

Total Population of Tarrant County

Ethnic/Racial Group	1990	%	1998	%	1999	%
White Non-Hispanic	858,901	73%	953,877	71%	968,669	70%
African-American	138,608	12%	161,238	12%	164,079	12%
Hispanic	139,886	12%	193,756	14%	203,200	15%
Other	32,708	3%	46,068	3%	48,389	3%
Total	1,170,103	100%	1,354,939	100%	1,384,337	100%

Ethnic/Racial Group	2000	%	2001	%
White Non-Hispanic	908,197	63%	910,402	62%
African-American	188,144	13%	191,755	13%
Hispanic	285,290	20%	297,856	20%
Other	64,588	4%	67,360	5%
Total	1,446,219	100%	1,467,373	100%

Note: Source of Data is from TDH, 2003.

Table 4

Projected Total Population of Tarrant County

Ethnic/Racial Group	2005	%	2010	%
White Non-Hispanic	915,416	59%	913,508	55%
African-American	205,915	13%	223,050	13%
Hispanic	351,127	23%	425,178	26%
Other	78,861	5%	94,165	6%
Total	1,551,319	100%	1,655,901	100%

Note: Source of Data is from TDH, 2003.

Table 5

Patient Volume at the Osteopathic Health System of Texas

Medical Services Area	1998*	%	1999	%	2000	%	2001	%
ER	19,423	29%	23,405	32%	24,399	31%	23,006	29%
Inpatient	7,841	12%	8,176	11%	8,523	11%	9,198	12%
Outpatient	39,090	59%	42,078	57%	45,449	58%	47,465	59%
Total Number of Patients	66,354	100%	73,659	100%	78,371	100%	79,669	100%

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 6

General Population Demographics for the Osteopathic Health System and Tarrant County

Ethnic/Racial Group	1998* Patients	1998* OMCT %	1998* Tarrant %	1999 Patients	1999 OMCT %	1999 Tarrant %
White Non-Hispanic	44,962	68	71	48,997	67	70
African-American	11,838	18	12	12,573	17	12
Hispanic	8,137	12	14	9,833	13	15
Other	1,417	2	3	2,256	3	3
Total	66,354	100%		73,659	100%	

Ethnic/Racial Group	2000 Patients	2000 OMCT %	2000 Tarrant %	2001 Patients	2001 OMCT %	2001 Tarrant %
White Non-Hispanic	52,264	67	63	52,529	66	62
African-American	13,069	17	13	13,345	17	13
Hispanic	11,447	15	20	12,044	15	20
Other	1,591	2	4	1,751	2	5
Total	78,371	100%		79,669	100%	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Note: Source of Tarrant County Data is from TDH, 2003.

Table 7

Emergency Room, Inpatient, and Outpatient Demographics at the Osteopathic Health System of Texas

ER Population	1998*	%	1999	%	2000	%	2001	%
White Non-Hispanic	10,998	57	12,778	55	13,752	56	12,487	54
African-American	4,566	24	5,252	22	5,277	22	5,378	24
Hispanic	3,200	16	4,159	18	4,991	20	4,872	21
Other	659	3	1,216	5	379	2	269	1
ER Total	19,423	100%	23,405	100%	24,399	100%	23,006	100%

Inpatient Population								
White Non-Hispanic	5,194	66	5,434	66	5,596	66	6,092	66
African-American	1,526	19	1,485	18	1,584	18	1,615	18
Hispanic	982	13	1,038	13	1,188	14	1,315	14
Other	139	2	219	3	155	2	176	2
Inpatient Total	7,841	100%	8,176	100%	8,523	100%	9,198	100%

Outpatient Population								
White Non-Hispanic	28,770	74	30,785	73	32,916	72	33,950	72
African-American	5,746	15	5,836	14	6,208	14	6,352	13
Hispanic	3,955	10	4,636	11	5,268	12	5,857	12
Other	619	1	821	2	1,057	2	1,306	3
Outpatient Total	39,090	100%	42,078	100%	45,449	100%	47,465	100%

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 8

Population Demographics of the ER, Inpatient, and Outpatient Components Compared to Tarrant County

	1998*		1999		2000		2001	
Ethnic/Racial Group	ER	Tarrant	ER	Tarrant	ER	Tarrant	ER	Tarrant
White Non-Hispanic	57%	71%	55%	70%	56%	63%	54%	62%
African-American	24%	12%	22%	12%	22%	13%	24%	13%
Hispanic	16%	14%	18%	15%	20%	20%	21%	20%
Other	3%	3%	5%	3%	2%	4%	1%	5%
Total	100%		100%		100%		100%	

Ethnic/Racial Group	Inpatient	Tarrant	Inpatient	Tarrant	Inpatient	Tarrant	Inpatient	Tarrant
White Non-Hispanic	66%	71%	66%	70%	66%	63%	66%	62%
African-American	19%	12%	18%	12%	18%	13%	18%	13%
Hispanic	13%	14%	13%	15%	14%	20%	14%	20%
Other	2%	3%	3%	3%	2%	4%	2%	5%
Total	100%		100%		100%		100%	

Ethnic/Racial Group	Outpatient	Tarrant	Outpatient	Tarrant	Outpatient	Tarrant	Outpatient	Tarrant
White Non-Hispanic	74%	71%	73%	70%	72%	63%	72%	62%
African-American	15%	12%	14%	12%	14%	13%	13%	13%
Hispanic	10%	14%	11%	15%	12%	20%	12%	20%
Other	1%	3%	2%	3%	2%	4%	3%	5%
Total	100%		100%		100%		100%	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Note: Source of Tarrant County Data is from TDH, 2003.

Table 9

1998 Through 2001 Emergency Room Health Care Coverage for the Osteopathic Health System of Texas

Ethnic/Racial Group	Payment Coverage	1998* *n*	1998* Utilization %	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %
White Non-Hispanic	Self Pay	2,809	25.5	3,349	26.2	3,463	25.2	3,222	25.8
	Managed Care	3,940	35.8	4,828	37.8	5,509	40.1	4,962	39.7
	Medicaid	1,704	15.5	1,752	13.7	1,783	13.0	1,732	13.9
	Medicare	2,545	23.1	2,849	22.3	2,997	21.8	2,571	20.6
Sub-group Total		10,998	100%	12,778	100%	13,752	100%	12,487	100%
African-American	Self Pay	1,183	25.9	1,295	24.7	1,332	25.2	1,405	26.1
	Managed Care	1,207	26.4	1,501	28.6	1,550	29.4	1,563	29.1
	Medicaid	1,237	27.1	1,427	27.2	1,399	26.5	1,390	25.8
	Medicare	939	20.6	1,029	19.6	996	18.9	1,020	19.0
Sub-group Total		4,566	100%	5,252	100%	5,277	100%	5,378	100%
Hispanic	Self Pay	1,329	41.5	1,604	38.6	1,939	38.8	1,927	39.6
	Managed Care	767	24.0	1,227	29.5	1,677	33.6	1,508	31.0
	Medicaid	758	23.7	923	22.2	875	17.5	955	19.6
	Medicare	346	10.8	405	9.7	500	10.0	482	9.9
Sub-group Total		3,200	100%	4,159	100%	4,991	100%	4,872	100%
Other	Self Pay	207	31.4	455	37.4	110	29.0	113	42.0
	Managed Care	292	44.3	497	40.9	174	45.9	78	29.0
	Medicaid	100	15.2	155	12.7	48	12.7	39	14.5
	Medicare	60	9.1	109	9.0	47	12.4	39	14.5
Sub-group Total		659	100%	1,216	100%	379	100%	269	100%
Total ER Population		19,423		23,405		24,399		23,006	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 10

1998 to 1999 Emergency Room Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998**		1999					
		n	Utilization %	*n*	Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	2,809	25.5	3,349	26.2	1.03	(0.98-1.07)	1.34	0.2470167
	Managed Care	3,940	35.8	4,828	37.8	1.05*	(1.02-1.09)	9.66	0.0018827
	Medicaid	1,704	15.5	1,752	13.7	0.88*	(0.83-0.94)	14.98	0.0001088
	Medicare	2,545	23.1	2,849	22.3	0.96	(0.92-1.01)	2.36	0.1248774
Sub-group Total		10,998	100%	12,778	100%				
African-American	Self Pay	1,183	25.9	1,295	24.7	0.95	(0.89-1.02)	1.96	0.1612959
	Managed Care	1,207	26.4	1,501	28.6	1.08	(1.01-1.15)	5.52	0.0188028
	Medicaid	1,237	27.1	1,427	27.2	1.00	(0.94-1.07)	0.00	0.9480820
	Medicare	939	20.6	1,029	19.6	0.95	(0.88-1.03)	1.38	0.2398742
Sub-group Total		4,566	100%	5,252	100%				
Hispanic	Self Pay	1,329	41.5	1,604	38.6	0.93	(0.88-0.98)	6.51	0.0107492
	Managed Care	767	24.0	1,227	29.5	1.23*	(1.14-1.33)	27.75	0.0000001
	Medicaid	758	23.7	923	22.2	0.94	(0.86-1.02)	2.21	0.1372665
	Medicare	346	10.8	405	9.7	0.90	(0.79-1.03)	2.16	0.1413544
Sub-group Total		3,200	100%	4,159	100%				
Other	Self Pay	207	31.4	455	37.4	1.19	(1.04-1.36)	6.49	0.0108465
	Managed Care	292	44.3	497	40.9	0.92	(0.83-1.03)	1.93	0.1643420
	Medicaid	100	15.2	155	12.7	0.84	(0.67-1.06)	1.94	0.1634309
	Medicare	60	9.1	109	9.0	0.98	(0.73-1.33)	0.00	0.9862360
Sub-group Total		659	100%	1,216	100%				
Total ER Population		19,423		23,405					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 11

1999 to 2000 Emergency Room Payment Assessment

Ethnic/Racial Group	Payment Coverage	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	3,349	26.2	3,463	25.2	0.96	(0.92-1.00)	3.61	0.0574547
	Managed Care	4,828	37.8	5,509	40.1	1.06*	(1.03-1.09)	14.33	0.0001533
	Medicaid	1,752	13.7	1,783	13.0	0.95	(0.89-1.01)	3.12	0.0771138
	Medicare	2,849	22.3	2,997	21.8	0.98	(0.93-1.02)	0.95	0.3306958
Sub-group Total		12,778	100%	13,752	100%				
African-American	Self Pay	1,295	24.7	1,332	25.2	1.02	(0.96-1.09)	0.45	0.5026706
	Managed Care	1,501	28.6	1,550	29.4	1.03	(0.97-1.09)	0.77	0.3812872
	Medicaid	1,427	27.2	1,399	26.5	0.98	(0.92-1.04)	0.55	0.4584660
	Medicare	1029	19.6	996	18.9	0.96	(0.89-1.04)	0.83	0.3627416
Sub-group Total		5,252	100%	5,277	100%				
Hispanic	Self Pay	1,604	38.6	1,939	38.8	1.01	(0.96-1.06)	0.07	0.7986206
	Managed Care	1227	29.5	1,677	33.6	1.14*	(1.07-1.21)	17.40	0.0000303
	Medicaid	923	22.2	875	17.5	0.79*	(0.73-0.86)	30.92	0.0000001
	Medicare	405	9.7	500	10.0	1.03	(0.91-1.17)	0.17	0.6805291
Sub-group Total		4,159	100%	4,991	100%				
Other	Self Pay	455	37.4	110	29.0	0.78*	(0.65-0.92)	8.54	0.0034804
	Managed Care	497	40.9	174	45.9	1.12	(0.99-1.28)	2.81	0.0938697
	Medicaid	155	12.7	48	12.7	0.99	(0.73-1.34)	0.00	0.9628828
	Medicare	109	9.0	47	12.4	1.38	(1.00-1.91)	3.49	0.0617781
Sub-group Total		1216	100%	379	100%				
Total ER Population		23,405		24,399					

* $p < .01$

Table 12

2000 to 2001 Emergency Room Payment Assessment

Ethnic/Racial Group	Payment Coverage	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	3,463	25.2	3,222	25.8	1.02	(0.98-1.07)	1.30	0.2547694
	Managed Care	5,509	40.1	4,962	39.7	0.99	(0.96-1.02)	0.27	0.6031949
	Medicaid	1,783	13.0	1,732	13.9	1.07	(1.01-1.14)	4.54	0.0330558
	Medicare	2,997	21.8	2,571	20.6	0.94	(0.90-0.99)	5.60	0.0179490
Sub-group Total		13,752	100%	12,487	100%				
African-American	Self Pay	1,332	25.2	1,405	26.1	1.03	(0.97-1.10)	1.04	0.3071338
	Managed Care	1,550	29.4	1,563	29.1	0.99	(0.93-1.05)	0.11	0.7411018
	Medicaid	1,399	26.5	1,390	25.8	0.97	(0.91-1.04)	0.58	0.4478716
	Medicare	996	18.9	1,020	19.0	1.00	(0.93-1.09)	0.01	0.9233433
Sub-group Total		5,277	100%	5,378	100%				
Hispanic	Self Pay	1,939	38.8	1,927	39.6	1.02	(0.97-1.07)	0.48	0.4876904
	Managed Care	1677	33.6	1,508	31.0	0.92	(0.87-0.98)	7.79	0.0052640
	Medicaid	875	17.5	955	19.6	1.12	(1.03-1.21)	6.86	0.0088345
	Medicare	500	10.0	482	9.9	0.99	(0.88-1.11)	0.03	0.8624418
Sub-group Total		4,991	100%	4,872	100%				
Other	Self Pay	110	29.0	113	42.0	1.45*	(1.17-1.79)	11.18	0.0008257
	Managed Care	174	45.9	78	29.0	0.63*	(0.51-0.78)	18.23	0.0000195
	Medicaid	48	12.7	39	14.5	1.14	(0.77-1.70)	0.31	0.5771558
	Medicare	47	12.4	39	14.5	1.17	(0.79-1.73)	0.43	0.5106493
Sub-group Total		379	100%	269	100%				
Total ER Population		24,399		23,006					

* $p < .01$

Table 13

1998 and 2001 Emergency Room Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998**		2001					
		n	Utilization %	*n*	Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	2,809	25.5	3,222	25.8	1.01	(0.97-1.06)	0.21	0.6467336
	Managed Care	3,940	35.8	4,962	39.7	1.11*	(1.07-1.15)	38.03	0.0000000
	Medicaid	1,704	15.5	1,732	13.9	0.90*	(0.84-0.95)	12.34	0.0004440
	Medicare	2,545	23.1	2,571	20.6	0.89*	(0.85-0.93)	22.34	0.0000023
Sub-group Total		10,998	100%	12,487	100%				
African-American	Self Pay	1,183	25.9	1,405	26.1	1.01	(0.97-1.05)	0.14	0.7033865
	Managed Care	1,207	26.4	1,563	29.1	1.10*	(1.05-1.15)	20.14	0.0000072
	Medicaid	1,237	27.1	1,390	25.8	0.95	(0.91-1.00)	4.66	0.0308615
	Medicare	939	20.6	1,020	19.0	0.92*	(0.88-0.97)	9.50	0.0020534
Sub-group Total		4,566	100%	5,378	100%				
Hispanic	Self Pay	1,329	41.5	1,927	39.6	0.95*	(0.92-0.98)	9.53	0.0020201
	Managed Care	767	24.0	1,508	31.0	1.29*	(1.24-1.35)	142.49	0.0000000
	Medicaid	758	23.7	955	19.6	0.83*	(0.79-0.87)	57.69	0.0000000
	Medicare	346	10.8	482	9.9	0.91	(0.85-0.99)	5.36	0.0206492
Sub-group Total		3,200	100%	4,872	100%				
Other	Self Pay	207	31.4	113	42.0	1.34*	(1.29-1.38)	281.14	0.0000000
	Managed Care	292	44.3	78	29.0	0.65*	(0.63-0.68)	593.70	0.0000000
	Medicaid	100	15.2	39	14.5	0.96	(0.90-1.02)	2.15	0.1430057
	Medicare	60	9.1	39	14.5	1.59*	(1.48-1.71)	161.44	0.0000000
Sub-group Total		659	100%	269	100%				
Total ER Population		19,423		23,006					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 14

1998 Through 2001 Inpatient Health Care Coverage for the Osteopathic Health System of Texas

Ethnic/Racial Group	Payment Coverage	1998* *n*	1998* Utilization %	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %
White Non-Hispanic	Self Pay	181	3.5	180	3.3	208	3.7	238	3.9
	Managed Care	1,553	29.9	1,741	32.0	1,914	34.2	2,100	34.5
	Medicaid	575	11.1	604	11.1	469	8.4	701	11.5
	Medicare	2,885	55.5	2,909	53.5	3,005	53.7	3,053	50.1
Sub-group Total		5,194	100%	5,434	100%	5,596	100%	6,092	100%
African-American	Self Pay	102	6.7	98	6.6	88	5.6	104	6.4
	Managed Care	313	20.5	281	18.9	339	21.4	381	23.6
	Medicaid	426	27.9	330	22.2	353	22.3	431	26.7
	Medicare	685	44.9	776	52.3	804	50.8	699	43.3
Sub-group Total		1,526	100%	1,485	100%	1,584	100%	1,615	100%
Hispanic	Self Pay	95	9.7	117	11.3	140	11.8	134	10.2
	Managed Care	249	25.4	328	31.6	448	37.7	508	38.6
	Medicaid	376	38.3	281	27.1	283	23.8	314	23.9
	Medicare	262	26.7	312	30.1	317	26.7	359	27.3
Sub-group Total		982	100%	1,038	100%	1,188	100%	1,315	100%
Other	Self Pay	10	7.2	35	16.0	7	4.5	9	5.1
	Managed Care	66	47.5	67	30.6	53	34.2	83	47.2
	Medicaid	35	25.2	19	8.7	29	18.7	37	21.0
	Medicare	28	20.1	98	44.7	66	42.6	47	26.7
Sub-group Total		139	100%	219	100%	155	100%	176	100%
Total Inpatient Population		7,841		8,176		8,523		9,198	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 15

1998 to 1999 Inpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998** *n*	Utilization %	1999 *n*	Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	181	3.5	180	3.3	0.95	(0.78-1.16)	0.19	0.6623691
	Managed Care	1,553	29.9	1,741	32.0	1.07	(1.01-1.13)	5.58	0.0181441
	Medicaid	575	11.1	604	11.1	1.00	(0.90-1.12)	0.00	0.9660913
	Medicare	2,885	55.5	2,909	53.5	0.96	(0.93-1.00)	4.25	0.0391841
Sub-group Total		5,194	100%	5,434	100%				
African-American	Self Pay	102	6.7	98	6.6	0.99	(0.76-1.29)	0.00	0.9838455
	Managed Care	313	20.5	281	18.9	0.92	(0.80-1.07)	1.10	0.2940168
	Medicaid	426	27.9	330	22.2	0.80*	(0.70-0.90)	12.68	0.0003706
	Medicare	685	44.9	776	52.3	1.16*	(1.08-1.25)	16.06	0.0000614
Sub-group Total		1,526	100%	1,485	100%				
Hispanic	Self Pay	95	9.7	117	11.3	1.17	(0.90-1.51)	1.21	0.2720891
	Managed Care	249	25.4	328	31.6	1.25*	(1.08 -1.43)	9.33	0.0022490
	Medicaid	376	38.3	281	27.1	0.71*	(0.62- 0.80)	28.43	0.0000001
	Medicare	262	26.7	312	30.1	1.13	(0.98-1.29)	2.67	0.1024884
Sub-group Total		982	100%	1,038	100%				
Other	Self Pay	10	7.2	35	16.0	2.22	(1.14- 4.34)	5.20	0.0225631
	Managed Care	66	47.5	67	30.6	0.64*	(0.49- 0.84)	9.68	0.0018667
	Medicaid	35	25.2	19	8.7	0.34*	(0.21-0.58)	16.82	0.0000412
	Medicare	28	20.1	98	44.7	2.22*	(1.55-3.19)	21.50	0.0000035
Sub-group Total		139	100%	219	100%				
Total Inpatient Population		7,841		8,176					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 16

1999 to 2000 Inpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	URR	C.I.	χ_2	*p*-value
White Non-Hispanic	Self Pay	180	3.3	208	3.7	1.12	(0.92-1.37)	1.12	0.2708667
	Managed Care	1,741	32.0	1,914	34.2	1.07	(1.01-1.13)	5.73	0.0166814
	Medicaid	604	11.1	469	8.4	0.75*	(0.67-0.85)	23.16	0.0000015
	Medicare	2,909	53.5	3,005	53.7	1.00	(0.97-1.04)	0.02	0.8764802
Sub-group Total		5,434	100%	5,596	100%				
African-American	Self Pay	98	6.6	88	5.6	0.84	(0.64-1.11)	1.29	0.2562208
	Managed Care	281	18.9	339	21.4	1.13	(0.98-1.30)	2.77	0.0960491
	Medicaid	330	22.2	353	22.3	1.00	(0.88-1.14)	0.00	0.9988825
	Medicare	776	52.3	804	50.8	0.97	(0.91-1.04)	0.63	0.4272874
Sub-group Total		1,485	100%	1,584	100%				
Hispanic	Self Pay	117	11.3	140	11.8	1.05	(0.83-1.32)	0.10	0.7556226
	Managed Care	328	31.6	448	37.7	1.19*	(1.06-1.34)	8.84	0.0029408
	Medicaid	281	27.1	283	23.8	0.88	(0.76-1.01)	2.92	0.0873135
	Medicare	312	30.1	317	26.7	0.89	(0.78-1.01)	2.95	0.0860294
Sub-group Total		1,038	100%	1,188	100%				
Other	Self Pay	35	16.0	7	4.5	0.28*	(0.13-0.62)	10.85	0.0009899
	Managed Care	67	30.6	53	34.2	1.12	(0.83-1.50)	0.39	0.5337626
	Medicaid	19	8.7	29	18.7	2.16	(1.26-3.70)	7.30	0.0069112
	Medicare	98	44.7	66	42.6	0.95	(0.75-1.20)	0.10	0.7561660
Sub-group Total		219	100%	155	100%				
Total Inpatient Population		8,176		8,523					

* $p < .01$

Table 17

2000 to 2001 Inpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	208	3.7	238	3.9	1.05	(0.88-1.26)	0.24	0.6264074
	Managed Care	1,914	34.2	2,100	34.5	1.01	(0.96-1.06)	0.08	0.7750272
	Medicaid	469	8.4	701	11.5	1.37*	(1.23-1.53)	31.29	0.0000001
	Medicare	3,005	53.7	3,053	50.1	0.93*	(0.90-0.97)	14.86	0.0001155
Sub-group Total		5,596	100%	6,092	100%				
African-American	Self Pay	88	5.6	104	6.4	1.16	(0.88-1.53)	0.96	0.3280214
	Managed Care	339	21.4	381	23.6	1.10	(0.97-1.25)	2.07	0.1497447
	Medicaid	353	22.3	431	26.7	1.20*	(1.06-1.35)	8.14	0.0043322
	Medicare	804	50.8	699	43.3	0.85*	(0.79-0.92)	17.64	0.0000266
Sub-group Total		1,584	100%	1,615	100%				
Hispanic	Self Pay	140	11.8	134	10.2	0.86	(0.69-1.08)	1.47	0.2256439
	Managed Care	448	37.7	508	38.6	1.02	(0.93-1.13)	0.19	0.6655614
	Medicaid	283	23.8	314	23.9	1.00	(0.87-1.15)	0.00	0.9890872
	Medicare	317	26.7	359	27.3	1.02	(0.90-1.16)	0.09	0.7626315
Sub-group Total		1,188	100%	1,315	100%				
Other	Self Pay	7	4.5	9	5.1	1.13	(0.43-2.97)	0.00	0.9969050
	Managed Care	53	34.2	83	47.2	1.38	(1.05-1.80)	5.20	0.0225786
	Medicaid	29	18.7	37	21.0	1.12	(0.73-1.74)	0.15	0.6982243
	Medicare	66	42.6	47	26.7	0.63*	(0.46-0.85)	8.55	0.0034621
Sub-group Total		155	100%	176	100%				
Total Inpatient Population		8,523		9,198					

* $p < .01$

Table 18

1998 and 2001 Inpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998** *n*	Utilization %	2001 *n*	Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	181	3.5	238	3.9	1.12	(0.93-1.36)	1.40	0.2373071
	Managed Care	1,553	29.9	2,100	34.5	1.15*	(1.09-1.22)	26.77	0.0000002
	Medicaid	575	11.1	701	11.5	1.04	(0.94-1.15)	0.53	0.4655456
	Medicare	2,885	55.5	3,053	50.1	0.90*	(0.87-0.93)	33.16	0.0000000
Sub-group Total		5,194	100%	6,092	100%				
African-American	Self Pay	102	6.7	104	6.4	0.96	(0.84-1.11)	0.28	0.5983238
	Managed Care	313	20.5	381	23.6	1.15*	(1.07-1.23)	15.45	0.0000846
	Medicaid	426	27.9	431	26.7	0.96	(0.90-1.02)	2.13	0.1448412
	Medicare	685	44.9	699	43.3	0.96	(0.92-1.01)	2.96	0.0856039
Sub-group Total		1,526	100%	1,615	100%				
Hispanic	Self Pay	95	9.7	134	10.2	1.05	(0.94-1.18)	0.81	0.3676973
	Managed Care	249	25.4	508	38.6	1.52*	(1.44-1.61)	224.92	0.0000000
	Medicaid	376	38.3	314	23.9	0.62*	(0.59-0.66)	274.58	0.0000000
	Medicare	262	26.7	359	27.3	1.02	(0.96-1.09)	0.57	0.4505179
Sub-group Total		982	100%	1,315	100%				
Other	Self Pay	10	7.2	9	5.1	0.71*	(0.61-0.82)	21.23	0.0000041
	Managed Care	66	47.5	83	47.2	0.99	(0.96-1.03)	0.11	0.7362107
	Medicaid	35	25.2	37	21.0	0.83*	(0.78-0.89)	27.38	0.0000002
	Medicare	28	20.1	47	26.7	1.33*	(1.24-1.42)	66.92	0.0000000
Sub-group Total		139	100%	176	100%				
Total Inpatient Population		7,841		9,198					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 19

1998 Through 2001 Outpatient Health Care Coverage for the Osteopathic Health System of Texas

Ethnic/Racial Group	Payment Coverage	1998* *n*	1998* Utilization %	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %
White Non-Hispanic	Self Pay	487	1.7	439	1.4	520	1.6	544	1.6
	Managed Care	15,878	55.2	17,858	58.0	19,572	59.5	19,642	57.9
	Medicaid	2,267	7.9	1,954	6.3	1,857	5.6	2,185	6.4
	Medicare	10,138	35.2	10,534	34.2	10,967	33.3	11,579	34.1
Sub-group Total		28,770	100%	30,785	100%	32,916	100%	33,950	100%
African-American	Self Pay	119	2.1	96	1.6	103	1.7	100	1.6
	Managed Care	2,524	43.9	2,631	45.1	2,837	45.7	2,937	46.2
	Medicaid	1,189	20.7	1,203	20.6	1,200	19.3	1,246	19.6
	Medicare	1914	33.3	1,906	32.7	2068	33.3	2,069	32.6
Sub-group Total		5,746	100%	5,836	100%	6,208	100%	6,352	100%
Hispanic	Self Pay	174	4.4	172	3.7	196	3.7	203	3.5
	Managed Care	2096	53.0	2,696	58.2	3,233	61.4	3,640	62.1
	Medicaid	830	21.0	824	17.8	808	15.3	854	14.6
	Medicare	855	21.6	944	20.4	1031	19.6	1160	19.8
Sub-group Total		3,955	100%	4,636	100%	5,268	100%	5,857	100%
Other	Self Pay	27	4.4	22	2.7	31	2.9	23	1.8
	Managed Care	409	66.1	598	72.8	769	72.8	917	70.2
	Medicaid	87	14.1	74	9.0	111	10.5	156	11.9
	Medicare	96	15.5	127	15.5	146	13.8	210	16.1
Sub-group Total		619	100%	821	100%	1057	100%	1306	100%
Total Outpatient Population		39,090		42,078		45,449		47,465	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 20

1998 to 1999 Outpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998** *n*	Utilization %	1999 *n*	Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	487	1.7	439	1.4	0.84	(0.74 -0.96)	6.74	0.0094361
	Managed Care	15,878	55.2	17,858	58.0	1.05*	(1.04-1.07)	48.02	0.0000001
	Medicaid	2,267	7.9	1,954	6.3	0.81*	(0.76-0.85)	52.81	0.0000001
	Medicare	10,138	35.2	10,534	34.2	0.97	(0.95-0.99)	6.78	0.0091967
Sub-group Total		28,770	100%	30,785	100%				
African-American	Self Pay	119	2.1	96	1.6	0.79	(0.61-1.04)	2.66	0.1031918
	Managed Care	2,524	43.9	2,631	45.1	1.03	(0.99-1.07)	1.52	0.2175901
	Medicaid	1,189	20.7	1,203	20.6	1.00	(0.93-1.07)	0.01	0.9343698
	Medicare	1914	33.3	1,906	32.7	0.98	(0.93-1.03)	0.53	0.4684264
Sub-group Total		5,746	100%	5,836	100%				
Hispanic	Self Pay	174	4.4	172	3.7	0.84	(0.69-1.04)	2.45	0.1176040
	Managed Care	2096	53.0	2,696	58.2	1.10*	(1.06-1.14)	22.81	0.0000018
	Medicaid	830	21.0	824	17.8	0.85*	(0.78-0.92)	13.96	0.0001868
	Medicare	855	21.6	944	20.4	0.94	(0.87-1.02)	1.96	0.1617309
Sub-group Total		3,955	100%	4,636	100%				
Other	Self Pay	27	4.4	22	2.7	0.61	(0.35-1.07)	2.55	0.1104263
	Managed Care	409	66.1	598	72.8	1.10	(1.03-1.18)	7.36	0.0066703
	Medicaid	87	14.1	74	9.0	0.64*	(0.48-0.86)	8.53	0.0034890
	Medicare	96	15.5	127	15.5	1.00	(0.78 -1.27)	0.00	0.9578696
Sub-group Total		619	100%	821	100%				
Total Outpatient Population		39,090		42,078					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 21

1999 to 2000 Outpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1999 *n*	1999 Utilization %	2000 *n*	2000 Utilization %	URR	C.I.	χ_2	*p*-value
White Non-Hispanic	Self Pay	439	1.4	520	1.6	1.11	(0.98-1.26)	2.43	0.1187551
	Managed Care	17,858	58.0	19,572	59.5	1.03*	(1.01-1.04)	13.77	0.0002062
	Medicaid	1,954	6.3	1,857	5.6	0.89*	(0.84-0.95)	13.96	0.0001872
	Medicare	10,534	34.2	10,967	33.3	0.97	(0.95-1.00)	5.72	0.0167731
Sub-group Total		30,785	100%	32,916	100%				
African-American	Self Pay	96	1.6	103	1.7	1.01	(0.77-1.33)	0.00	0.9916428
	Managed Care	2,631	45.1	2,837	45.7	1.01	(0.97-1.05)	0.44	0.5084770
	Medicaid	1,203	20.6	1,200	19.3	0.94	(0.87-1.01)	3.02	0.0820848
	Medicare	1906	32.7	2,068	33.3	1.02	(0.97-1.07)	0.55	0.4582547
Sub-group Total		5,836	100%	6,208	100%				
Hispanic	Self Pay	172	3.7	196	3.7	1.00	(0.82-1.23)	0.00	0.9794857
	Managed Care	2696	58.2	3,233	61.4	1.06*	(1.02-1.09)	10.49	0.0012017
	Medicaid	824	17.8	808	15.3	0.86*	(0.79-0.94)	10.46	0.0012222
	Medicare	944	20.4	1031	19.6	0.96	(0.89-1.04)	0.92	0.3378869
Sub-group Total		4,636	100%	5,268	100%				
Other	Self Pay	22	2.7	31	2.9	1.09	(0.64-1.88)	0.04	0.8507435
	Managed Care	598	72.8	769	72.8	1.00	(0.94-1.06)	0.00	0.9910293
	Medicaid	74	9.0	111	10.5	1.17	(0.88-1.54)	0.99	0.3195796
	Medicare	127	15.5	146	13.8	0.89	(0.72-1.11)	0.89	0.3451105
Sub-group Total		821	100%	1,057	100%				
Total Outpatient Population		42,078		45,449					

* $p < .01$

Table 22

2000 to 2001 Outpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	2000 *n*	2000 Utilization %	2001 *n*	2001 Utilization %	URR	C.I.	χ^2	*p*-value
White Non-Hispanic	Self Pay	520	1.6	544	1.6	1.01	(0.90-1.14)	0.04	0.8396526
	Managed Care	19,572	59.5	19,642	57.9	0.97*	(0.96-0.99)	17.68	0.0000261
	Medicaid	1,857	5.6	2,185	6.4	1.14*	(1.07-1.21)	18.43	0.0000177
	Medicare	10,967	33.3	11,579	34.1	1.02	(1.00-1.05)	4.61	0.0318423
Sub-group Total		32,916	100%	33,950	100%				
African-American	Self Pay	103	1.7	100	1.6	0.95	(0.72-1.25)	0.09	0.7594312
	Managed Care	2,837	45.7	2,937	46.2	1.01	(0.97-1.05)	0.34	0.5569943
	Medicaid	1,200	19.3	1,246	19.6	1.01	(0.95-1.09)	0.15	0.7023887
	Medicare	2068	33.3	2,069	32.6	0.98	(0.93-1.03)	0.74	0.3883728
Sub-group Total		6,208	100%	6,352	100%				
Hispanic	Self Pay	196	3.7	203	3.5	0.93	(0.77-1.13)	0.45	0.5027939
	Managed Care	3233	61.4	3,640	62.1	1.01	(0.98-1.04)	0.68	0.4105634
	Medicaid	808	15.3	854	14.6	0.95	(0.87-1.04)	1.19	0.2749295
	Medicare	1031	19.6	1160	19.8	1.01	(0.94-1.09)	0.08	0.7745077
Sub-group Total		5,268	100%	5,857	100%				
Other	Self Pay	31	2.9	23	1.8	0.60	(0.35-1.02)	3.09	0.0789556
	Managed Care	769	72.8	917	70.2	0.97	(0.92-1.02)	1.72	0.1897264
	Medicaid	111	10.5	156	11.9	1.14	(0.90-1.43)	1.07	0.2998843
	Medicare	146	13.8	210	16.1	1.16	(0.96-1.41)	2.17	0.1405059
Sub-group Total		1057	100%	1,306	100%				
Total Outpatient Population		45,449		47,465					

* $p < .01$

Table 23

1998 and 2001 Outpatient Payment Assessment

Ethnic/Racial Group	Payment Coverage	1998** *n*	Utilization %	2001 *n*	Utilization %	URR	C.I.	χ^2	*p*-value
	Self Pay	487	1.7	544	1.6	0.95	(0.84-1.07)	0.73	0.3922758
White	Managed Care	15,878	55.2	19,642	57.9	1.05*	(1.03-1.06)	44.97	0.0000001
Non-	Medicaid	2,267	7.9	2,185	6.4	0.82*	(0.77-0.86)	49.01	0.0000001
Hispanic	Medicare	10,138	35.2	11,579	34.1	0.97*	(0.95-0.99)	8.77	0.0030677
Sub-group Total		28,770	100%	33,950	100%				
	Self Pay	119	2.1	100	1.6	0.76	(0.58-0.99)	3.91	0.0479229
African-	Managed Care	2,524	43.9	2,937	46.2	1.05	(1.01-1.09)	6.41	0.0113187
American	Medicaid	1,189	20.7	1,246	19.6	0.95	(0.88-1.02)	2.11	0.1463937
	Medicare	1914	33.3	2,069	32.6	0.98	(0.93-1.03)	0.71	0.3992981
Sub-group Total		5,746	100%	6,352	100%				
	Self Pay	174	4.4	203	3.5	0.79	(0.65-0.96)	5.32	0.0210919
Hispanic	Managed Care	2096	53.0	3,640	62.1	1.17*	(1.13-1.22)	81.04	0.0000001
	Medicaid	830	21.0	854	14.6	0.69*	(0.64-0.76)	67.68	0.0000001
	Medicare	855	21.6	1160	19.8	0.92	(0.85-0.99)	4.64	0.0311627
Sub-group Total		3,955	100%	5,857	100%				
	Self Pay	27	4.4	23	1.8	0.40*	(0.23-0.70)	10.22	0.0013867
Other	Managed Care	409	66.1	917	70.2	1.06	(0.99-1.14)	3.17	0.0751005
	Medicaid	87	14.1	156	11.9	0.85	(0.67-1.08)	1.51	0.2192470
	Medicare	96	15.5	210	16.1	1.04	(0.83-1.29)	0.06	0.8001488
Sub-group Total		619	100%	1,306	100%				
Total Outpatient Population		39,090		47,465					

* $p < .01$ ** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 24

Payment Proportions for Texas and the Osteopathic Health System of Texas

Payment Coverage	Total Texas Pop.		Total OHST Pop.		ER		Inpatient		Outpatient	
	1998**	2001*	1998**	2001*	1998**	2001*	1998**	2001*	1998**	2001*
	%	%	%	%	%	%	%	%	%	%
Self Pay	24	25	10.1	10.1	28.4	28.9	4.9	5.2	2.1	2
Managed Care	52.5	52.2	44.2	48.1	32	35.5	27.8	33.4	53.5	57
Medicaid	13.5	12.8	14.4	12.6	19.6	17.8	18	16.1	11.2	9.4
Medicare	10	10	31.3	29.2	20	17.8	49.3	45.2	33.3	31.6
Total	100%		100%		100%		100%		100%	

*Source of Data is from the U.S. Census Bureau, 2001.

** Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Table 25

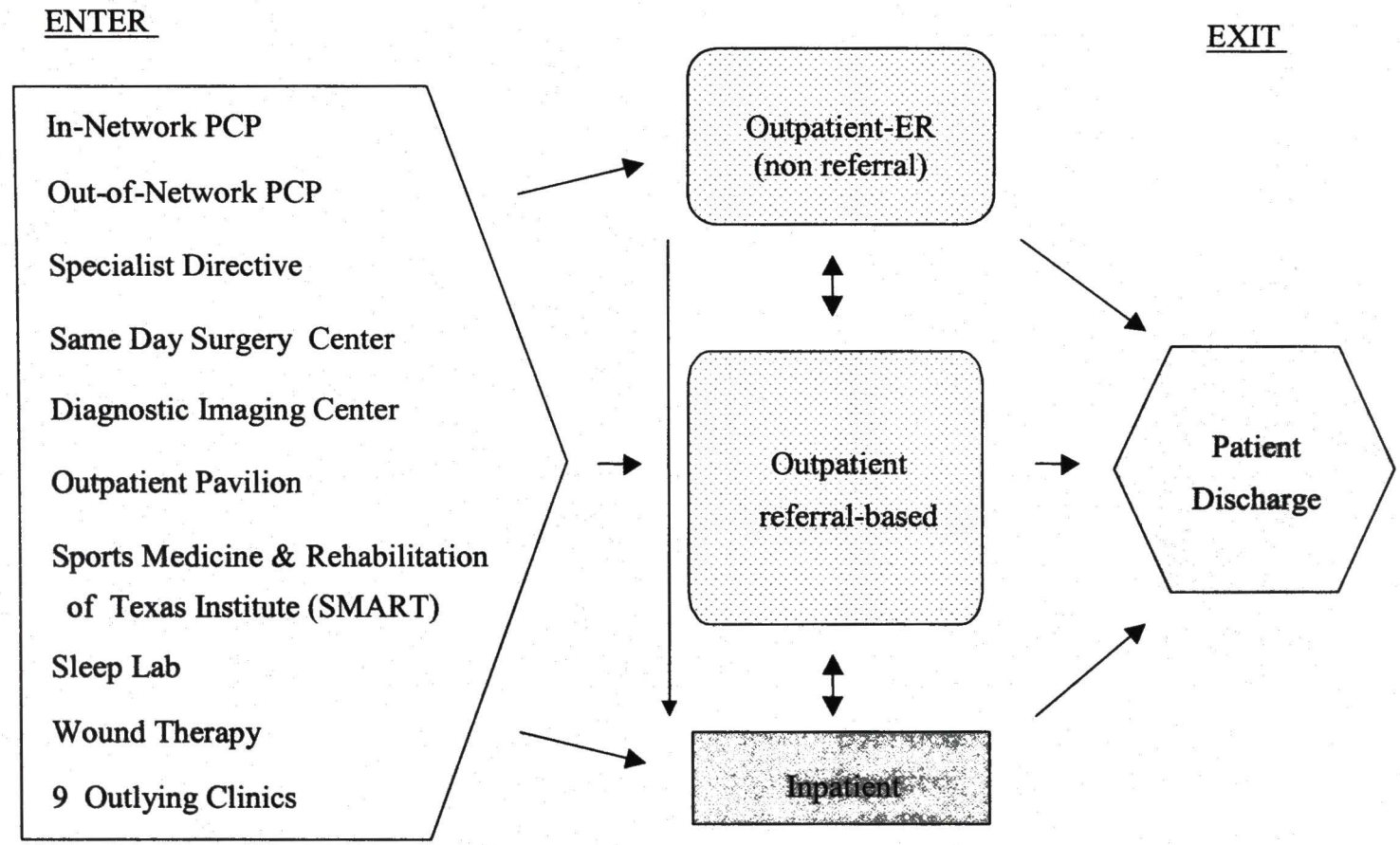
Payment Proportions for the Osteopathic Health System of Texas' Components

Ethnic/Racial Group	Payment Coverage	ER		Inpatient		Outpatient	
		1998*	2001	1998*	2001	1998*	2001
White Non-Hispanic	Self Pay	25.5	25.8	3.5	3.9	1.7	1.6
	Managed Care	35.8	39.7	29.9	34.5	55.2	57.9
	Medicaid	15.5	13.9	11.1	11.5	7.9	6.4
	Medicare	23.1	20.6	55.5	50.1	35.2	34.1
Sub-group Total		100%		100%		100%	
African-American	Self Pay	25.9	26.1	6.7	6.4	2.1	1.6
	Managed Care	26.4	29.1	20.5	23.6	43.9	46.2
	Medicaid	27.1	25.8	27.9	26.7	20.7	19.6
	Medicare	20.6	19.0	44.9	43.3	33.3	32.6
Sub-group Total		100%		100%		100%	
Hispanic	Self Pay	41.5	39.6	9.7	10.2	4.4	3.5
	Managed Care	24.0	31.0	25.4	38.6	53.0	62.1
	Medicaid	23.7	19.6	38.3	23.9	21.0	14.6
	Medicare	10.8	9.9	26.7	27.3	21.6	19.8
Sub-group Total		100%		100%		100%	
Other	Self Pay	31.4	42.0	7.2	5.1	4.4	1.8
	Managed Care	44.3	29.0	47.5	47.2	66.1	70.2
	Medicaid	15.2	14.5	25.2	21.0	14.1	11.9
	Medicare	9.1	14.5	20.1	26.7	15.5	16.1
Sub-group Total		100%		100%		100%	

* Source of 1998 Baseline Data is from Coustasse & Treviño, 1999.

Figure 1

Medical Services Components and Patient Flow at the Osteopathic Health System of Texas



Note: Source of OHST Components is from Coustasse & Treviño, 1999.

Figure 2

Patient Volume at the Osteopathic Health System of Texas

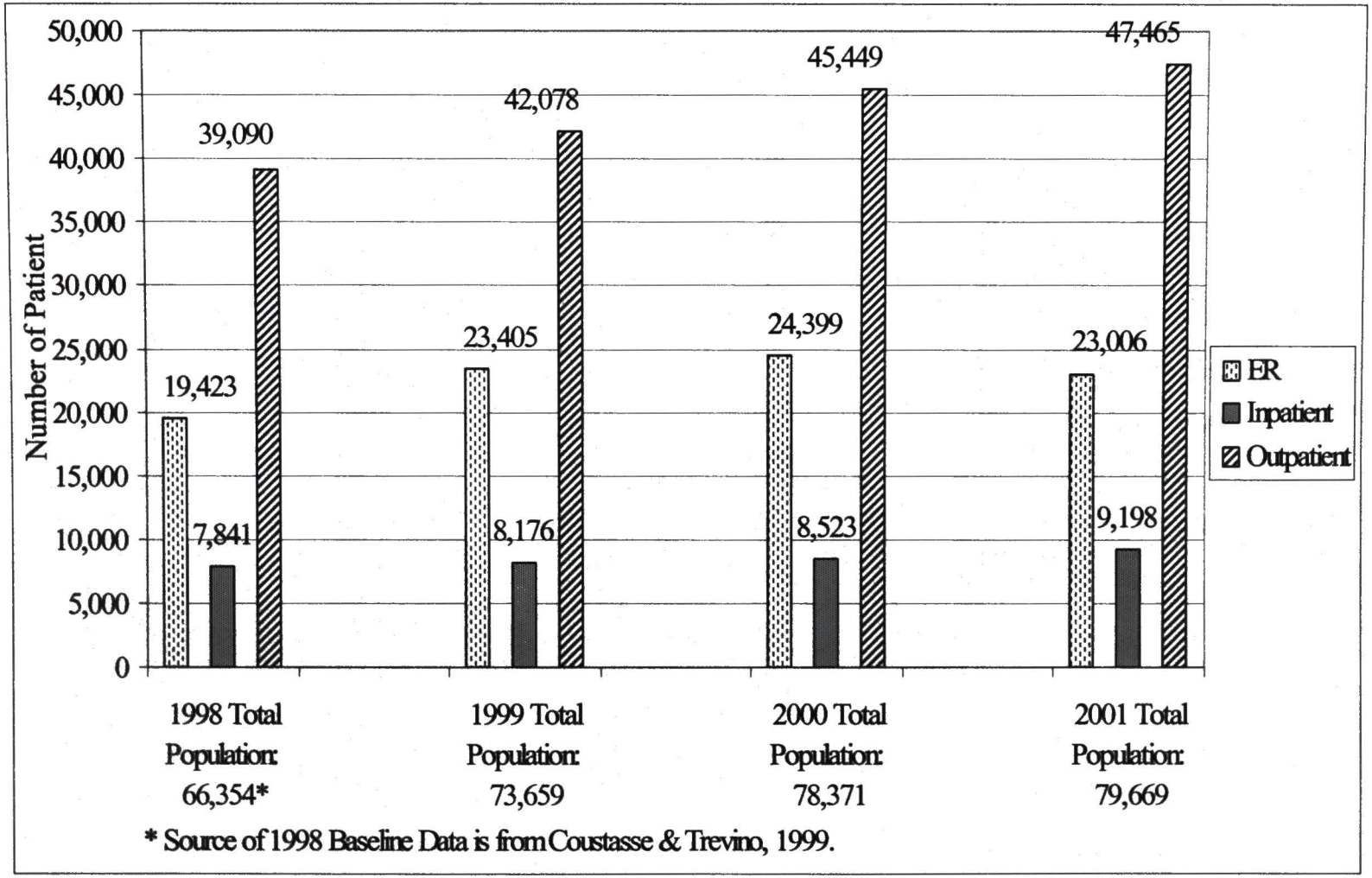
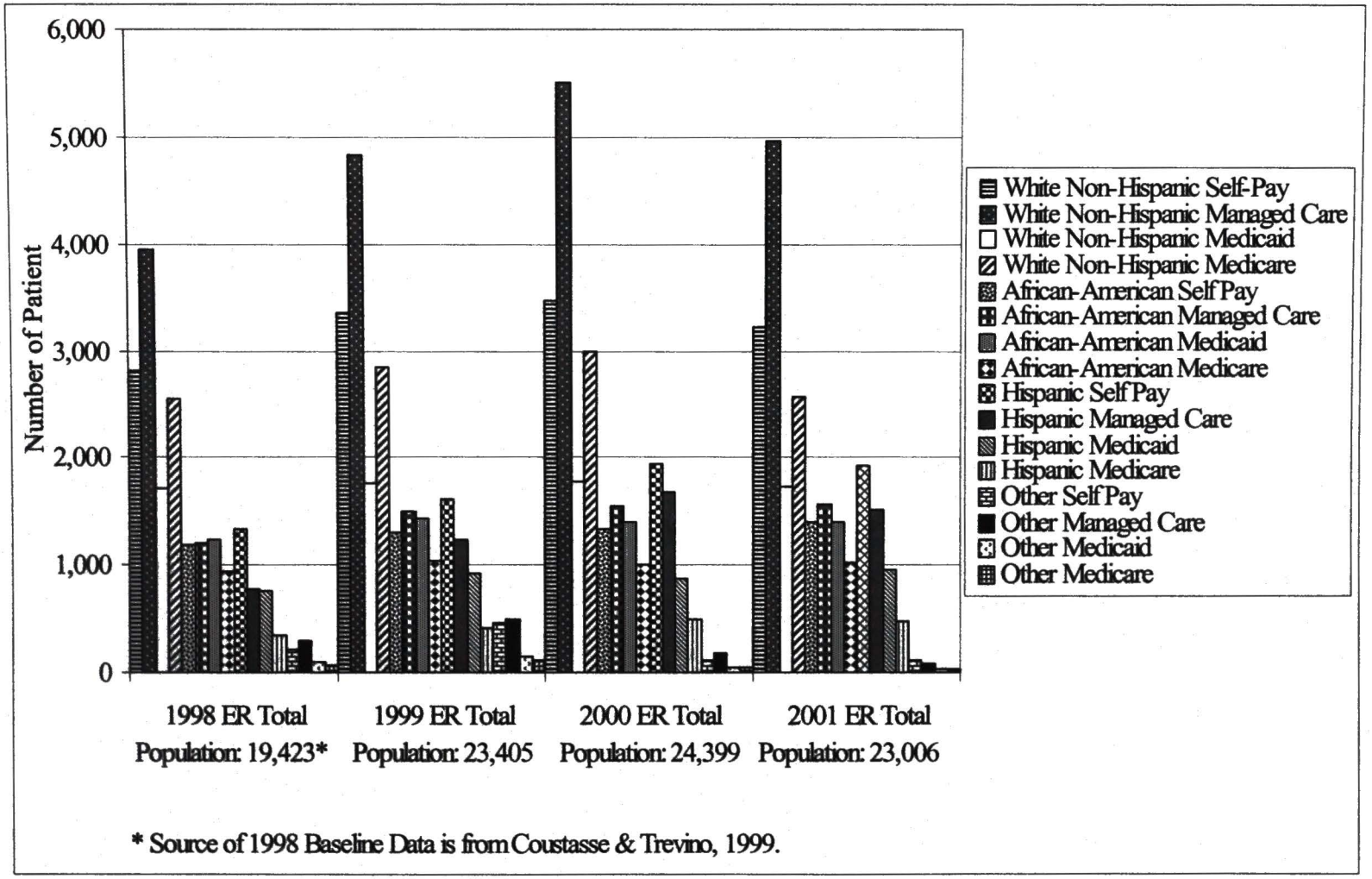


Figure 3

1998 Through 2001 Emergency Room Utilization at the Osteopathic Health System of Texas



* Source of 1998 Baseline Data is from Coustasse & Trevino, 1999.

Figure 4

1998 Through 2001 Inpatient Utilization at the Osteopathic Health System of Texas

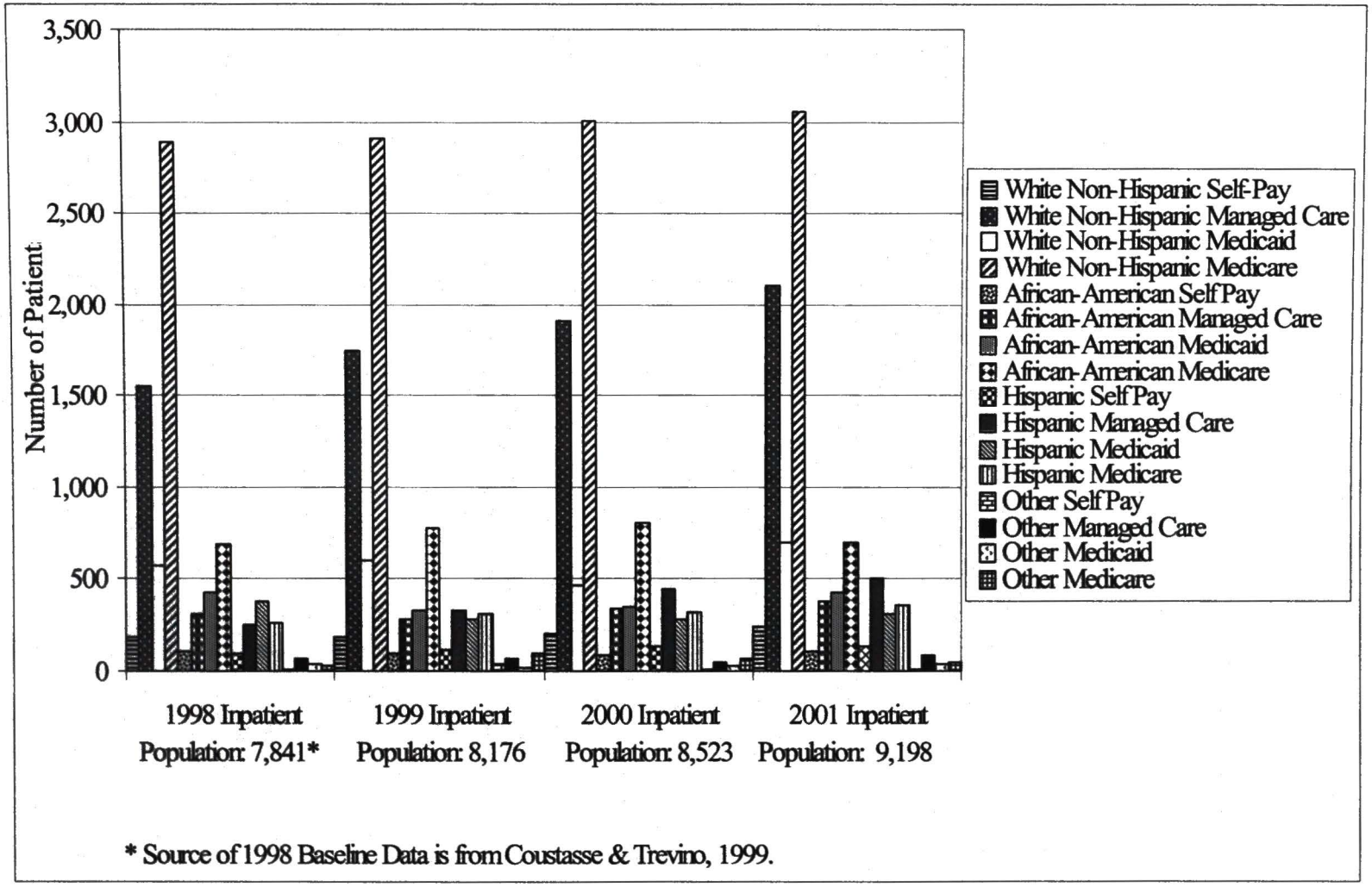
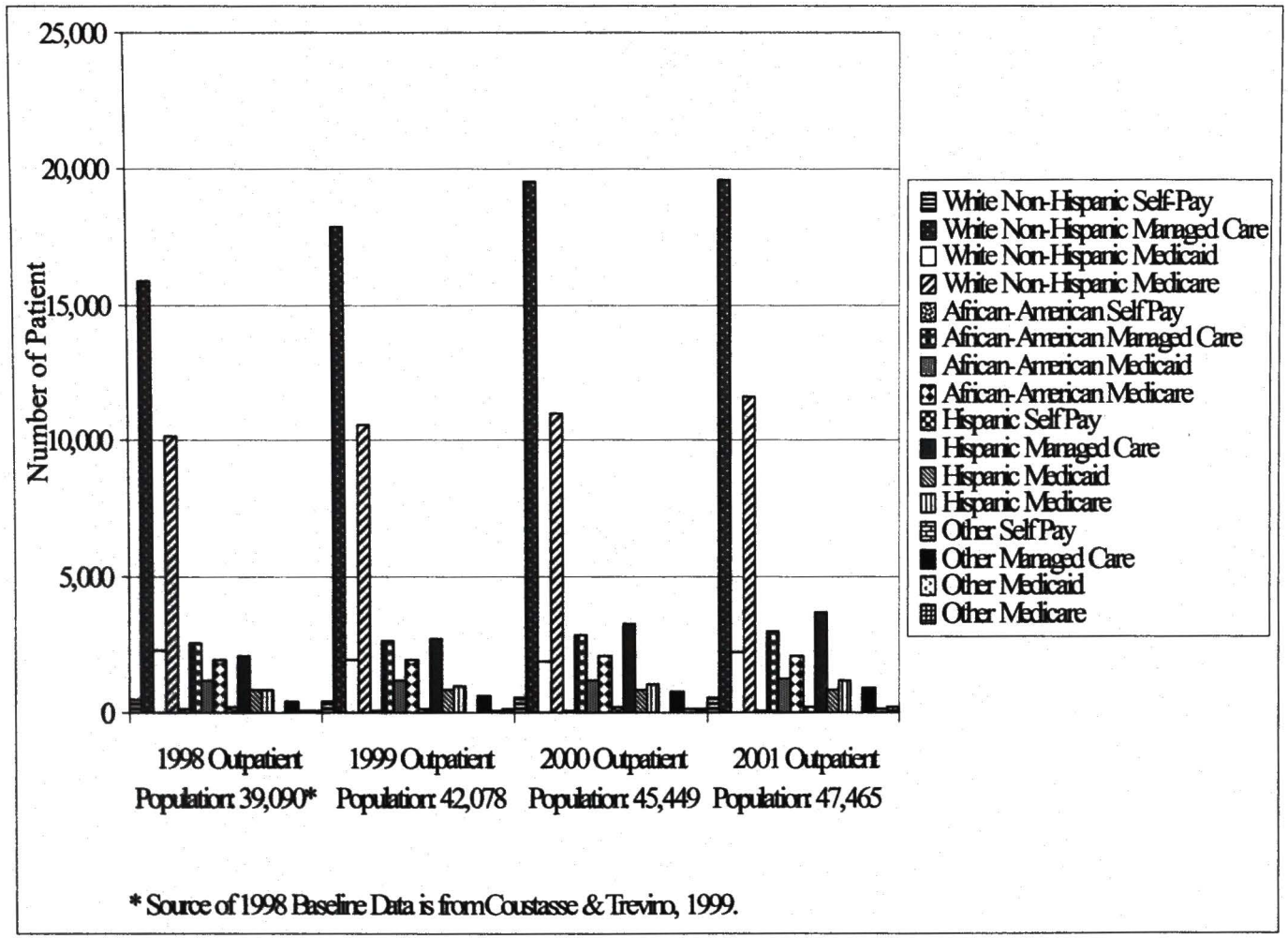


Figure 5

1998 Through 2001 Outpatient Utilization at the Osteopathic Health System of Texas



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