



**A STUDY OF THE COLLIN COUNTY TEXAS
BEHAVIORAL HEALTH SERVICES SYSTEM
A NorthSTAR County**

**PHASE ONE REPORT
MAY 2010**

***ANALYSIS AND RECOMMENDATIONS
FOR THE MANAGEMENT AND FINANCING
OF BEHAVIORAL HEALTH SERVICES
IN COLLIN COUNTY, TEXAS***

EXECUTIVE SUMMARY

A STUDY OF THE COLLIN COUNTY TEXAS BEHAVIORAL HEALTH SERVICES SYSTEM

This report presents the results of phase one of a multi-phase study conducted by the University of North Texas Health Science Center to examine the behavioral health services system in Collin County, as a member county of the NorthSTAR program. The primary aim of phase one was to describe expenditure patterns for behavioral health services to Collin County residents enrolled in the NorthSTAR program. A secondary aim of this phase was to review the organizational structure and functioning of the NorthSTAR system as it relates to Collin County. The report is presented in two sections, *Financial and Population Statistics, and Systems Issues*.

The study contract was finalized in September 2009, and activity in data definitions, interviews, and finalizing study methods, commenced in October. In February 2010, the study team acquired all requested existing historical data from the Texas Department of Health and Human Services (DSHS), following the protocol and methods approved by the requisite Institutional Review Boards. These historical data were analyzed to address each of the questions posed to the study team by the leadership in Collin County. Results are presented in narratives, tables, figures, and maps.

Analyses presented in this report are intended to inspire meaningful discussions within Collin County and among involved constituencies to address issues of mutual concern and to better serve the needs of Collin County as it grows and changes. We found no noticeable differences between the data commonly disseminated in the NorthSTAR system and these data from the DSHS.

Current concerns about the relative position of Collin County as a member of NorthSTAR serving an indigent population with behavioral health needs, appear to be related more to how data have been communicated, lack of transparency in provider negotiations, and system components that rely on status quo or have inefficiencies resulting in service delivery gaps. While this phase of the study identified no evidence of systematic disparities between Collin County and the rest of NorthSTAR, there are gaps in the services array in Collin County.

The combined perspective we have developed from examining both quantitative and qualitative data prompt us to make the following observations and recommendations for Phase One.

- Data disseminated throughout the NorthSTAR system have tended to be used for arguing one point or another rather than as facts to be examined. Thus the system has become static rather than proactively engaged.
- Collin County has services needs that are illuminated but not fully described by analyses in this phase one report, and will be addressed in the phase two report.
- It is generally accepted that VO has de facto authority for policies and operations in the NorthSTAR system, and although individuals express interest in effective communication, lack of trust in the system prevents it from occurring. Certain current VO roles should be decentralized to re-empower local communities.
- The North Texas Behavioral Health Authority (NTBHA) role should be decentralized to empower a new configuration of partners in the NorthSTAR system who can effectively interact with each other and the managed care organization.
- Collin County should consider hiring a Behavioral Healthcare Director as soon as possible, using an independent process.
- Collin County should consider reinstating some local investment of dollars into the NorthSTAR system, with a memorandum of understanding or contract for the deployment of those dollars.

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INTRODUCTION

A STUDY OF THE COLLIN COUNTY TEXAS BEHAVIORAL HEALTH SERVICES SYSTEM

This report presents the results of phase one of a multi-phase study conducted by the study team (page 41) based at the University of North Texas Health Science Center to examine the behavioral health services system in Collin County, Texas as a member county of the NorthSTAR behavioral health system. NorthSTAR is a unique behavioral health care system covering seven counties in North Texas. These counties include Collin, at the northern boundary, Dallas County, and five predominantly rural counties to the East and South, Hunt, Rockwall, Kaufman, Ellis, and Navarro.

Purpose of the Study

The **primary aim** of phase one was to describe expenditure patterns for behavioral health services to Collin County, Texas residents enrolled in the NorthSTAR program. The term “expenditure” refers to the paid or expensed amount for services. This study did not examine costs. Costs may be higher or lower than the paid amount.

The **primary question** guiding this study phase is: “What NorthSTAR behavioral health services were utilized by Collin County residents and where, and what was spent for those services over the immediate past three years?”

This report focuses on the following levels of analysis

- | | |
|--|----------------------------------|
| • Who uses services and where | • State Hospital Utilization |
| • What was paid for services and to whom | • Prescription Drug Expenditures |
| • What was spent for Medicaid and non-Medicaid populations | • Invoiced Services |
| | • How funding is distributed |

A **secondary aim** of phase one was to evaluate strengths and limitations of organizational systems in NorthSTAR as they impact behavioral health services in Collin County and for Collin County residents.

Thus in addition to the financial and population statistics we also have discussed some of the strengths and limitations of the current behavioral health service system. These primarily qualitative data were collected from interviews with NorthSTAR providers, consumers and advocates, and with officials of public agencies that influence or otherwise address the delivery of behavioral health services to Collin County residents.

Background

Organizations Managing the NorthSTAR Program

NorthSTAR originated in 1999 as the Dallas Area NorthSTAR Authority. Today *three major organizations* are the primary partners in NorthSTAR.

- The program is administered by the Texas Department of State Health Services (DSHS).
- The second major partner is Value Options®. Value Options® is a managed care company that specializes in management for all behavioral health issues, and mental health and chemical dependency diagnoses. The corporate office is located in Reston, Virginia. The Chief Executive Officer of Value Options® (VO) is Ms. Barbara B. Hill. VO employs ~3,000 individuals around the country, often serving local clients remotely through telephone and web-based contact. Nationally

VO covers services annually for ~23,000,000 lives with private and public contract funds. In NorthSTAR VO covers services for ~1,000,000 enrolled customers.

- The third major partner in NorthSTAR is the North Texas Behavioral Health Authority (NTBHA). The governing board of NTBHA includes two members appointed by the Collin County Commissioner's Court to represent the interests of Collin County residents.

Management and Authority

DSHS contracts directly with VO, thus endowing that managed care organization full authority over how approximately \$150,000,000 are spent annually for mental health and chemical dependency services throughout the seven NorthSTAR counties. VO is recognized as the de facto authority for NorthSTAR. VO has been successful at acquiring significant supplemental funding for services in NorthSTAR.

NTBHA, the authority in name, receives about three-quarters of a million dollars for its annual operations. NTBHA has day to day interaction with VO, but limited engagement with providers or other constituencies. NTBHA does not have the same "authority" functions held by all other Mental Health Authorities in Texas.

VO heads all discussions with current and potential organizations to develop services throughout NorthSTAR, with no requirement to use a bidding process. VO sponsors many local community activities but is proprietary in its contract negotiations. This lack of transparency fosters lack of trust in the system. VO is authorized by the State of Texas to retain a profit with a ceiling, whereas providers are expected to "break even."

VO directly employs many personnel ordinarily hired by local provider agencies, thus centralizing power and influence over NorthSTAR. VO contracts directly at varying rates with private and public non-for-profit and for-profit corporations to serve persons with diagnosed mental illnesses and substance use disorders. The manner and method of contracting for services shapes the system in a way VO envisions with no direct involvement of the community in planning.

Collin County, with over 760,000 residents and over 250,000 households and growing, has unique features that are impacting its public health and behavioral health services policies and its residents' needs. Until August 2009 Collin County was contributing nearly one-half million local county dollars annually to the NorthSTAR system. Those funds were given directly to VO by DSHS. Collin County curtailed its contribution approximately simultaneously with a 10% decrease in the amount of local funds contributed to NorthSTAR from Dallas County.

Study Design and Methods

The study contract was finalized in September 2009. The study team finalized study methods, and initiated data definitions and interviews in October 2009.

A data advisory team was formed including representatives from the study team, Value Options® (VO), North Texas Behavioral Health Authority (NTBHA) staff, and the Texas Department of State Health Services (DSHS). Agreement was reached that the study team would obtain the main data file from DSHS as the most valid and reliable source of information submitted by authorized NorthSTAR organizations. DSHS staff extracted or requested the data items from the "Data Warehouse" for all NorthSTAR clients who resided in Collin County and a 10% random sample for each of the other six NorthSTAR counties for calendar years 2007, 2008, and 2009.

In February 2010, the study team acquired over 500,000 data points, following the protocol and methods approved by the Institutional Review Boards (IRBs) of the State of Texas, the University of North Texas Health Science Center, and the University of Texas - Houston. The list of data elements is provided in Appendix I of this report. A list of specific topics proposed to be addressed in the phase one report, taken from the contract with Collin County is provided in Appendix II. Assurance was given to all IRBs that only the study team would view the original data files. Reports are presented as aggregate data, and no client level data is reported in situations in which any provider has fewer than ten clients.

Data requested from VO and Green Oaks Psychiatric Hospital for negotiated rates and costs were not obtained due to the position taken by these private for-profit entities that their various rates, despite the source of income being tax dollars from the State of Texas and federal dollars, are "proprietary." A copy of a newspaper article of note relevant to this question is included in Appendix IV.

Phase two of the study has been occurring concurrently with phase one activities, and continues with a community-wide needs-assessment into June 2010 with a report scheduled for late July 2010.

Assumptions and Cautions

This section sets the framework for understanding the data and analyses in this report. There are several assumptions and cautions important to keep in mind when reading this report.

This report uses *existing historical data* reported by community providers of behavioral health services and VO to the Texas DSHS.

Expenditures are reported. Costs are not known. A study of costs would require more extensive research into each organization's operating costs and the actual cost of prescription drugs.

Medicaid rates have decreased in the past three years. We have not directly compared VO's rates to Medicaid rates. However the low Medicaid rates drive health care professionals out of that market partly because the rates are too low to cover costs. Many of VO's rates are lower than Medicaid, and thus "saving money" is being achieved by limiting the availability of providers.

Rate setting and actuarial analyses are available on web sites such as the Texas Health and Human Services Commission for Texas.

The behavioral health organization managed care corporation, VO rather than NTBHA negotiates the contracts with providers in NorthSTAR whereas in all other Mental Health Authorities (MHA) in Texas the MHA contracts with the providers. There is a legal separation between authority and provider mental health functions in Texas.

In NorthSTAR various providers have different rates in their VO contracts because of the populations they serve or the specialty services they provide. These are not addressed in detail in this report but will be addressed in some detail in phase two of this study.

Each question, table, map and graph should be examined independently and not viewed as containing the same data or precisely matching numbers presented in other graphs or tables.

- ◇ Records of encounters used in this analysis are for persons authorized to receive services paid by the NorthSTAR program.
- ◇ Some comparisons may be made with the NorthSTAR Data Book available on-line at <http://www.dshs.state.tx.us/mhsa/northstar/databook.shtm#databook> . Although that report is drawn from the same database, data are reported quarterly in that publication. Thus, caution is advised against literal direct comparisons.
- ◇ Zip code boundaries used to create maps for this report can and do shift from year to year. Our report applies the 2007 ESRI zip code map templates provided by the Collin County GIS Department.
- ◇ Data outside of the DSHS files provided to the study team are used only if from a reliable source such as the US Census Bureau. Other data referenced should be considered in the context of the referenced sources.
- ◇ Data presented are not exhaustive of the data files received by the study team. Some data will populate the phase two report.
- ◇ Information may be repeated in some graphs and tables to examine possible relationships among data.
- ◇ The study team has presented verified data and faithfully reflected information from interviews and observations.
- ◇ Individual interpretations of the report information used to respond effectively to anecdotal comments on the costs or expenditures for NorthSTAR services may be made with confidence, but also within the parameters of the data used in the analysis, and the content of each different data display.
- ◇ More questions may be asked than are addressed in the report.

Purpose and schedule for phase two of this study

Phase two of this study is assessing the perceived and estimated behavioral health needs of the residents in Collin County relative to the quantity and distribution of services.

Organization of Phase One Report

Data analyses presented in this report are intended to provide the kind of information Collin County constituencies can utilize in meaningful discussions within Collin County, and with the three major partners in the system, and with service providers, CEOs and CFOs, and with community groups interested in behavioral health care in Collin County as a part of NorthSTAR.

The report is presented in two sections. Section One, Financial and Population Statistics, and Section Two, Systems Issues.

SECTION ONE

Population and Financial Statistics

Population: What were the characteristics of the Collin County residents who used NorthSTAR services?

Between January 1, 2007 and December 31, 2009, 10,130 individual clients received a service from a NorthSTAR provider. Most individuals have remained in the system across these three years. More specific information regarding the movement of clients within and outside of NorthSTAR will be provided in the phase two report.

Tables 1 and 2 present the age groups by gender, and the ethnic populations receiving a NorthSTAR service in the three study years. The total numbers presented in the tables differ from the previously stated total number of individuals served by 17 individuals, because of incomplete records for those clients. This omission from this point forward has no known negative effect on the subsequent data analyses.

Table 1. Age Groups and Gender All Study Years Combined

	Gender		Total
	Female	Male	
Number Under Age 18	788 (37%)	1,320 (63%)	2,108
Number Age 65 and older	134 (75.3%)	44 (24.7%)	178
Number Ages 18 - 65	4,289 (54.8%)	3,538 (45.2%)	7,827
Totals	5,211 (51.5%)	4,902 (48.5%)	10,113

More Collin County women than men in all adult age groups utilized NorthSTAR services. Children under age 18 represent ~21% of the treated population. Despite the lower proportion of males served in the adult categories compared to females, male children were served at more than one and a half times the rate of girls.

Black or African Americans comprised 12% of the Collin County residents using NorthSTAR services in the three study years. Persons of the Black race or

African American are estimated to be 7% of the Collin County population and are thus overrepresented in the treatment population. This is a common phenomenon in behavioral health services. Hispanics and Latinos represented 11.8% of the clients. Persons of Latino or Hispanic heritage are estimated to represent 13.9% of the Collin County population at an estimated 101,279 persons, and thus may be under-represented in the treatment population. With 18% of the clients registered with “unknown”

Table 2. Race, Ethnicity and Gender All Study Years Combined

Federal Race and Ethnic Origin Categories	Gender		Totals
	Female	Male	
American Indian Or Alaska Native	21 (0.4%)	15 (0.31%)	36 (0.4%)
Asian	104 (2%)	73 (1.5%)	177 (1.8%)
Black or African American	598 (11.5%)	619 (12.6%)	1,217 (12%)
Hispanic	527 (10.1%)	667 (13.6%)	1,194 (11.8%)
Native Hawaiian or Other Pacific Islander	4 (.07%)	0 (0.0%)	4 (.04%)
White Non-Hispanic	2,830 (54.3%)	2,509 (51.2%)	5,339 (52.8%)
More Than One Race	33 (0.63%)	37 (0.8%)	70 (0.7%)
Other	108 (2.1%)	126 (2.6%)	234 (2.3%)
Unknown	986 (18.9%)	856 (17.5%)	1,842 (18.2%)
TOTAL	5,211 (51.5%)	4,902 (48.5%)	10,113 (100%)

race or ethnic origin, it may be important for future planning to improve documentation of race and ethnic heritage for all clients of the system to determine the rates of access to the system.

Financial Expenditures

Providers: How much were providers paid for services to Collin County residents?

Between January 1, 2007 and December 31, 2009 (the three study years), \$ 15,111,857.00 were spent on NorthSTAR community-based services for 10,130 Collin County residents. This includes bills paid by Value Options to providers of a community-based service to a NorthSTAR client who lived in Collin County at the time of the service. It does not include state hospital costs, prescription drug costs or other invoiced expenses.

The 215 individual providers in the data set are grouped in table 3, under 9 logical combinations to most efficiently present the analysis. The distribution of expenditure by category of provider is displayed in Table 3 and illustrated in Figure 1.

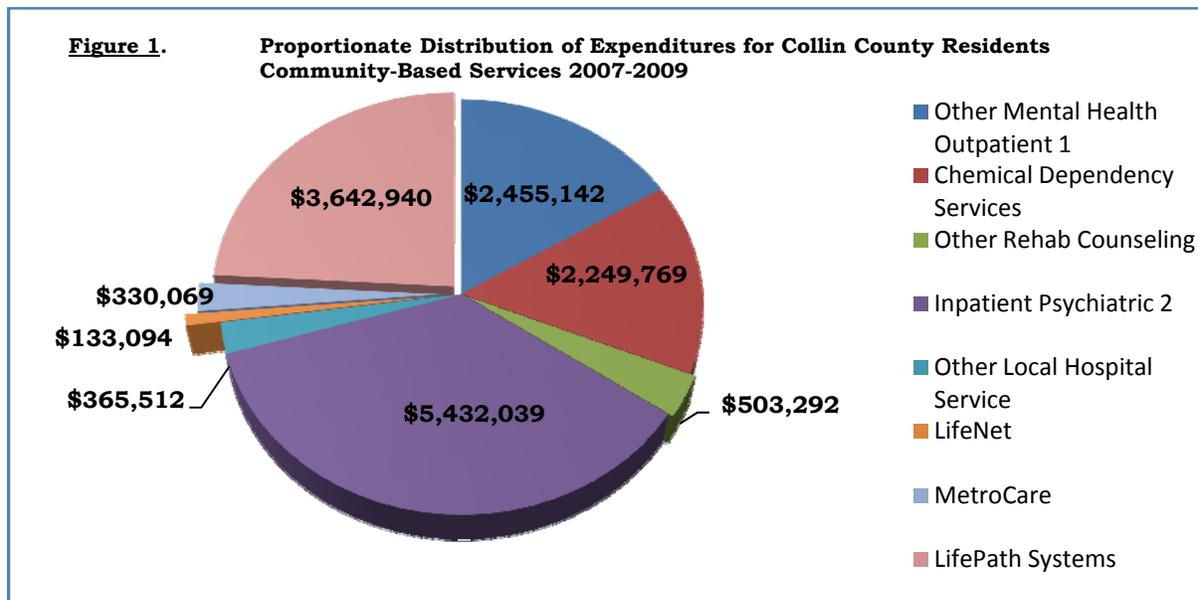
PROVIDER	Total Paid	Percent of Total
LifePath	\$ 3,642,940	24%
MetroCare	\$ 330,069	2%
LifeNet	\$ 133,094	1%
Other Local Hospital Service	\$ 365,512	2%
Inpatient Psychiatric ²	\$ 5,432,039	36%
Other Rehab Counseling	\$ 503,292	3%
Chemical Dependency Services	\$ 2,249,769	15%
Other Counseling Agencies and Individual Providers ¹	\$1,557,647	10%
Other Unique Services ¹	\$897,495	6%
	\$ 15,111,857	100%

LifePath includes Avenues reflecting the recent merger.

Eight hospitals are included in “other local hospital” (Hickory Trail, Lakes Regional, Parkland, Providence, Zale Lipshy, Childrens’, East Texas, and Glen Oaks).

¹ Other Counseling Agencies and Individual Provides are combined in the graph under Other Mental Health Outpatient.

² Inpatient Psychiatric includes Green Oaks Hospital, Medical Center of Plano, Medical Center of McKinney, and Timberlawn Mental Health System.



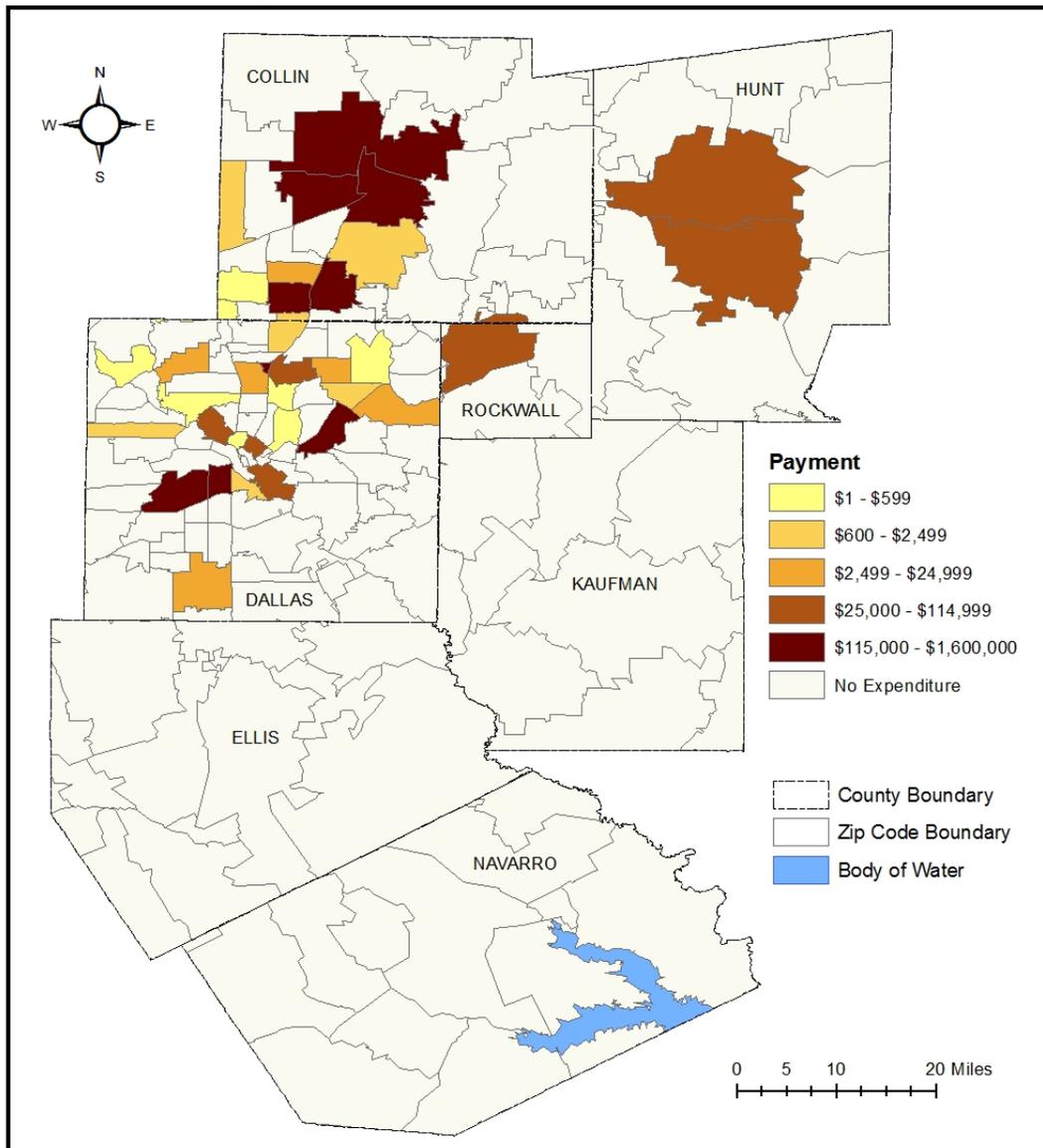
LifePath Systems received 16%, 21%, and 25.6% of the total NorthSTAR expenditures for community-based services for Collin County residents in each of the three study years respectively, reflecting an increasing share of those expenditures.

Providers: What was the distribution of dollars to providers by geo-political areas?

Map 2 illustrates the distribution of community based services expenditures for Collin County residents by provider zip code for calendar year 2009. This map illustrates the locations in which Collin County residents received NorthSTAR services. Appendix IV provides 3 maps (9, 10, and 11) for these data for 2008, 2007, and all three study year, and thus illustrates changes in where Collin County residents received services. Of interest outside of Collin County serving Collin County residents are providers Glenn Oaks Hospital in Hunt County, and Lakes Regional in Rockwall.

Map 2

2009 Payments to Providers by Provider Zip Code for Community Based Services to Collin County Residents



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on expenditures data from the Texas Department of State Health Services, and provider zip code information obtained from the Value Options NorthSTAR Member Information and Provider Directory published March 1, 2010. 2007 ESRI shapefiles provided by the Collin County GIS Department.

What services did Collin County residents receive and what was spent for these services?

In the DSHS data files an encounter is equivalent to a contact, visit or admission for a service. The number of encounters does not equal the number of unduplicated clients served. From a list of 219 discrete service codes in the data files we organized services into the following two major and 14 sub-categories.

- Community Hospitalization (not state hospitals)
 - Community Inpatient
 - Psychiatric Observation
 - Emergency Room
- Community-based, Non-hospital Services
 - Assertive Community Treatment (ACT)
 - Case Management
 - Outpatient Counseling
 - Clinical Assessment
 - Chemical Dependency (CD) Non-residential
 - Chemical Dependency (CD) Residential
 - Crisis Services
 - Labs and Medication Services (not prescription drugs)
 - Rehabilitation
 - Jail Diversion
 - Other

- ▽ Table 4 on the following page displays the number of encounters reported in the data files for each of the 14 collapsed community-based service categories for each study year. It also displays the number of individuals receiving those services (making those visits/encounters) and the average amount paid for each encounter.
- ▽ Using table 4 we have created three bar graphs to illustrate trends across years in each of these services categories. These bar graphs are figures 2, 3, and 4.
- ▽ Using Table 4, one can obtain an average amount paid per individual in each service category by dividing the amount paid by the number of individuals. This facilitates examination of possible trends in services utilization such as a decrease in the average expenditure for community inpatient services for encounters and for individuals.
- ▽ Note that the column for “individuals” cannot be summed without duplicating numbers of individuals.
- ▽ An estimated 10% of bills for December 2009 may not be included in this report. If this is an accurate assessment of the data derived in discussion with DSHS staff, Community Inpatient encounters in 2009 may equal those in 2008, with a larger number of persons served than in 2009, but fewer than in 2007.
- ▽ Therefore it is possible that the trend being seen nation-wide, with more utilization of state hospital beds due to acuity of a small proportion of behavioral health service systems’ clients may also be seen in this data as the use of intensive case management declines.

Table 4. Expenditures, Encounters and Individuals by Service Categories for Each Study Year

Services Categories	2007				2008				2009				Totals all Years
	Paid	Encounters	Individuals	Average per Encounter	Paid	Encounters	Individuals	Average per Encounter	Paid	Encounters	Individuals	Average per Encounter	
Community Inpatient	\$ 1,630,005	1,425	649	\$ 1,144	\$ 1,860,494	1,821	562	\$ 1,022	\$ 1,205,446	1,804	566	\$ 668	\$ 4,695,945.00
Psychiatric Observation	\$ 470,300	680	483	\$ 692	\$ 546,054	734	529	\$ 744	\$ 613,092	803	590	\$ 764	\$ 1,629,446.00
Emergency Room	\$ 32,205	208	145	\$ 155	\$ 24,048	176	119	\$ 137	\$ 34,087	200	139	\$ 170	\$ 90,340.00
ACT	\$ 23,200	29	5	\$ 800	\$ 31,000	34	6	\$ 912	\$ 65,595	69	16	\$ 951	\$ 119,795.00
Case Management	\$ 180,210	4,699	1,972	\$ 38	\$ 253,554	5,639	2,364	\$ 45	\$ 373,574	7,404	2,661	\$ 50	\$ 807,338.00
Outpatient Counseling	\$ 198,064	4,276	1,122	\$ 46	\$ 235,343	3,908	1,163	\$ 60	\$ 263,203	4,123	1,211	\$ 64	\$ 696,610.00
Clinical Assessment	\$ 122,448	1,788	1,472	\$ 68	\$ 259,581	2,400	1,977	\$ 108	\$ 275,940	2,597	2,021	\$ 106	\$ 657,969.00
CD Non-Residential	\$ 378,694	8,056	546	\$ 47	\$ 410,660	8,332	543	\$ 49	\$ 589,874	11,129	647	\$ 53	\$ 1,379,228.00
CD Residential	\$ 261,489	886	177	\$ 295	\$ 192,702	833	132	\$ 231	\$ 245,722	1,054	162	\$ 233	\$ 699,913.00
Crisis	\$ 14,148	93	81	\$ 152	\$ 61,739	568	410	\$ 109	\$ 53,563	546	356	\$ 98	\$ 129,450.00
Lab and Med Services	\$ 483,002	11,157	2,519	\$ 43	\$ 561,164	10,603	2,401	\$ 53	\$ 783,258	12,646	2,692	\$ 62	\$ 1,827,424.00
Rehabilitation	\$ 506,893	8,326	1,152	\$ 61	\$ 820,280	9,646	1,356	\$ 85	\$ 1,044,302	11,153	1,884	\$ 94	\$ 2,371,475.00
Jail Diversion	\$ -	0	0	-	\$ 2,190	7	3	\$ 313	\$ 2,425	8	2	\$ 303	\$ 4,615.00
Other	\$ 99	1	1	\$ 99	\$ 792	7	3	\$ 113	\$ 1,418	10	9	\$ 142	\$ 2,309.00
TOTAL	\$ 4,300,757	41,624			\$ 5,259,601	44,708			\$ 5,551,499	53,546			\$ 15,111,857.00

Graphs created with data from this table illustrate trends in each service category by year. See Figures 2, 3, and 4.

Figures 2 through 4 are graphs of the expenditures, encounters, and individuals served in each service category. These graphs highlight several aspects of services to Collin County residents that should be discussed among the principles in the system.

For example:

- There are few jail diversion services recorded in the data set (Table 4), underscoring the lack of these services in Collin County.
- The expenditures for, and the utilization of Psychiatric Observation at Green Oaks is increasing while the use of inpatient services may be decreasing or holding steady.
- ACT services, originally designed to prevent hospitalization and provide crisis management in the community, are very low, but increasing, doubling the 2008 expenditure in 2009. The question arises “*what is the benefit of ACT?*”
- In 2009, 5.3% more individuals received case management services than in 2008, and the cost increased by 32%, while the average number of encounters per person increase from 2.4 to 2.8. This suggests a need to examine how case management, ACT, crisis and outpatient counseling services are being used with respect to level of care and risk for hospitalization.

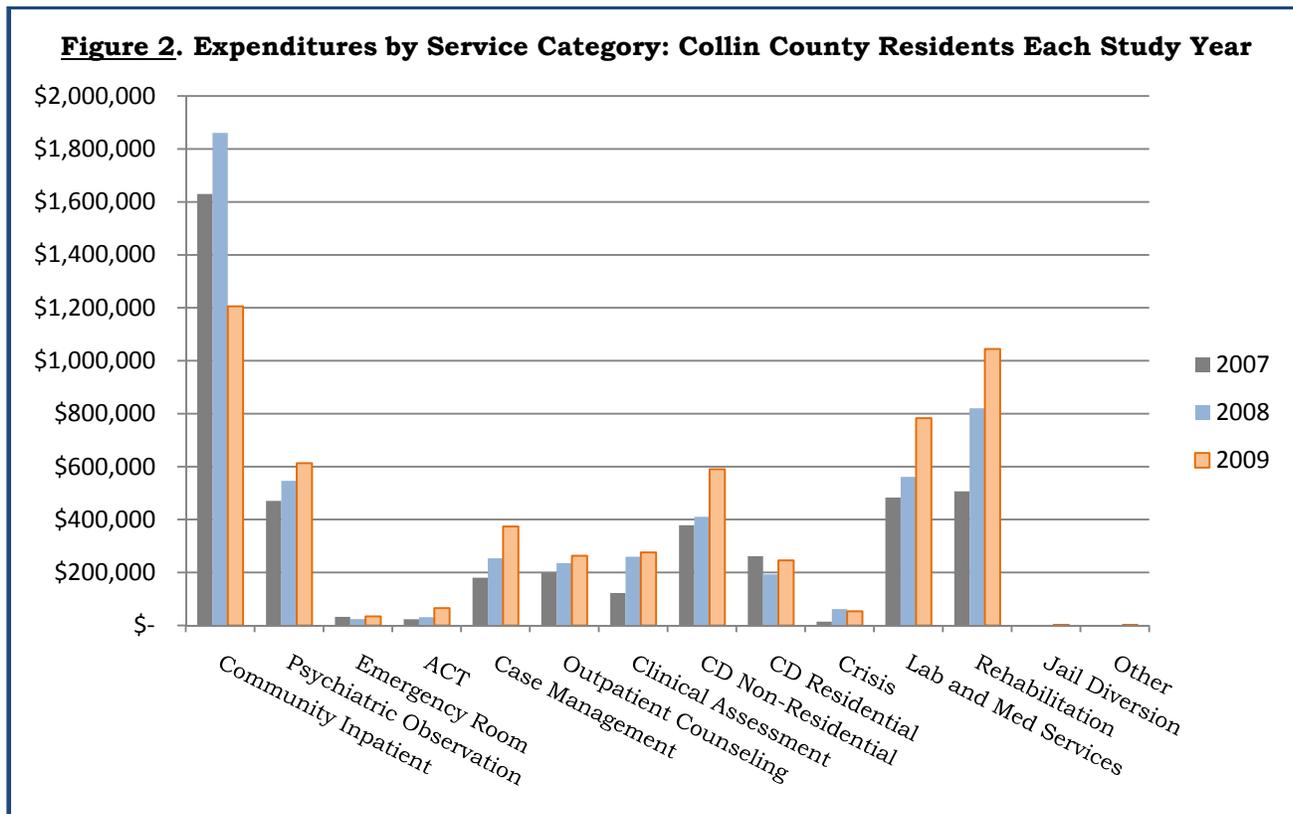


Figure 3. Encounters by Service Category Collin County Residents Each Study Year

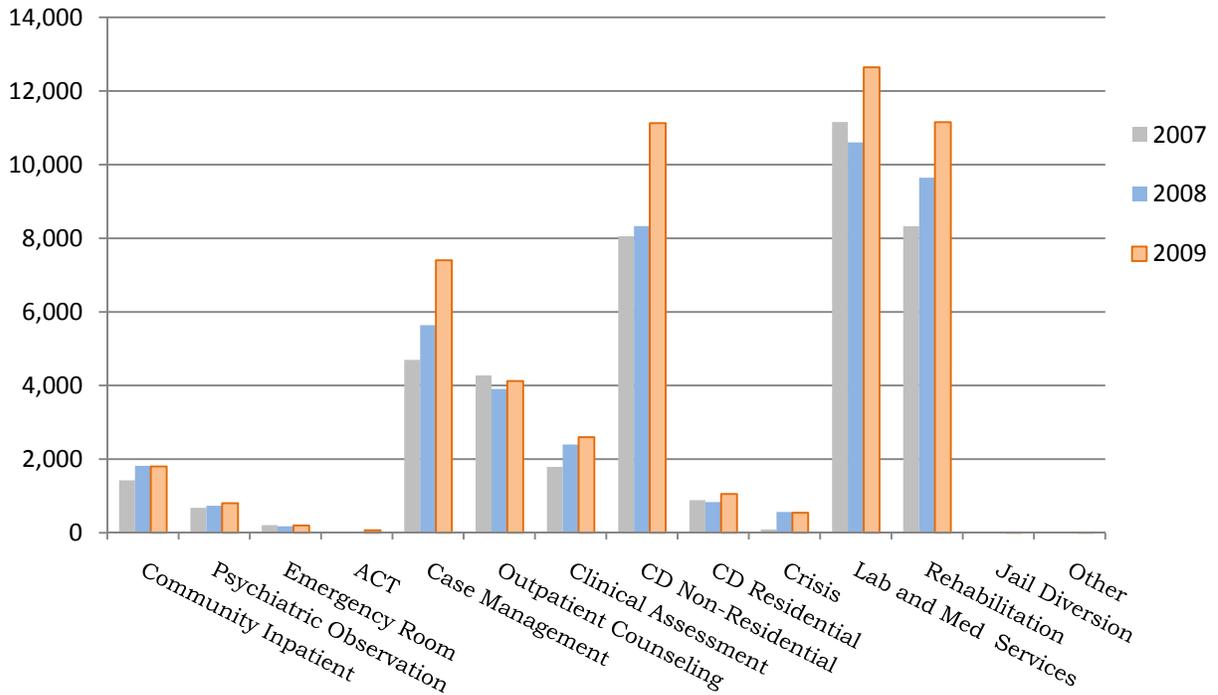
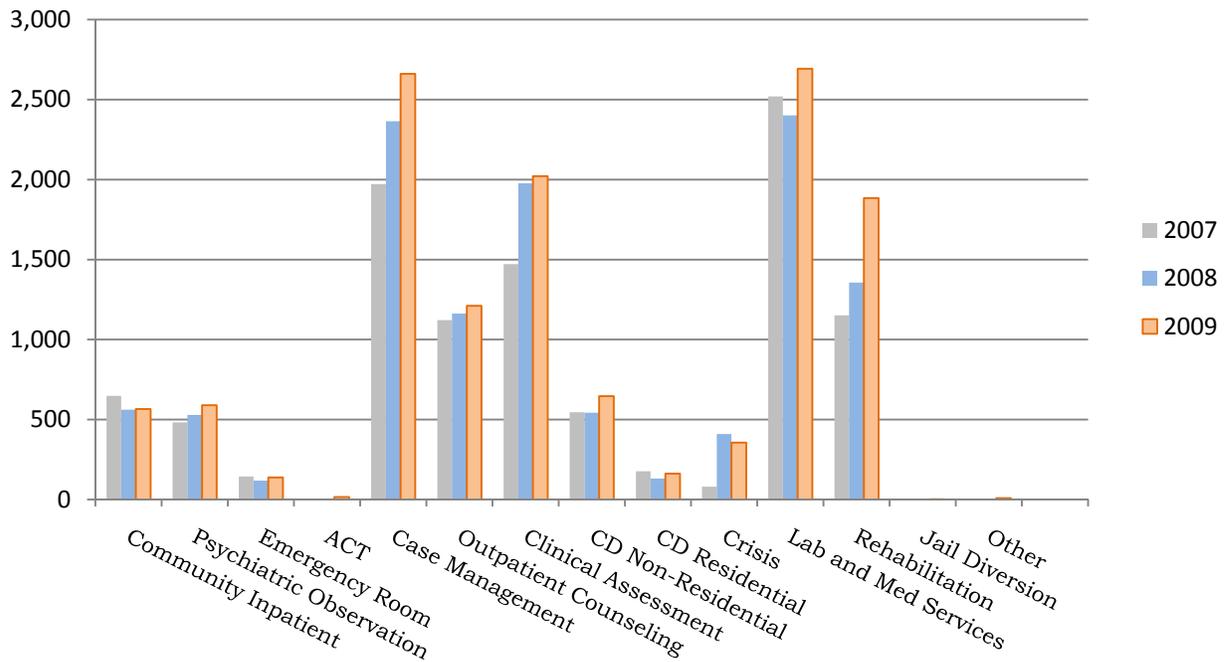
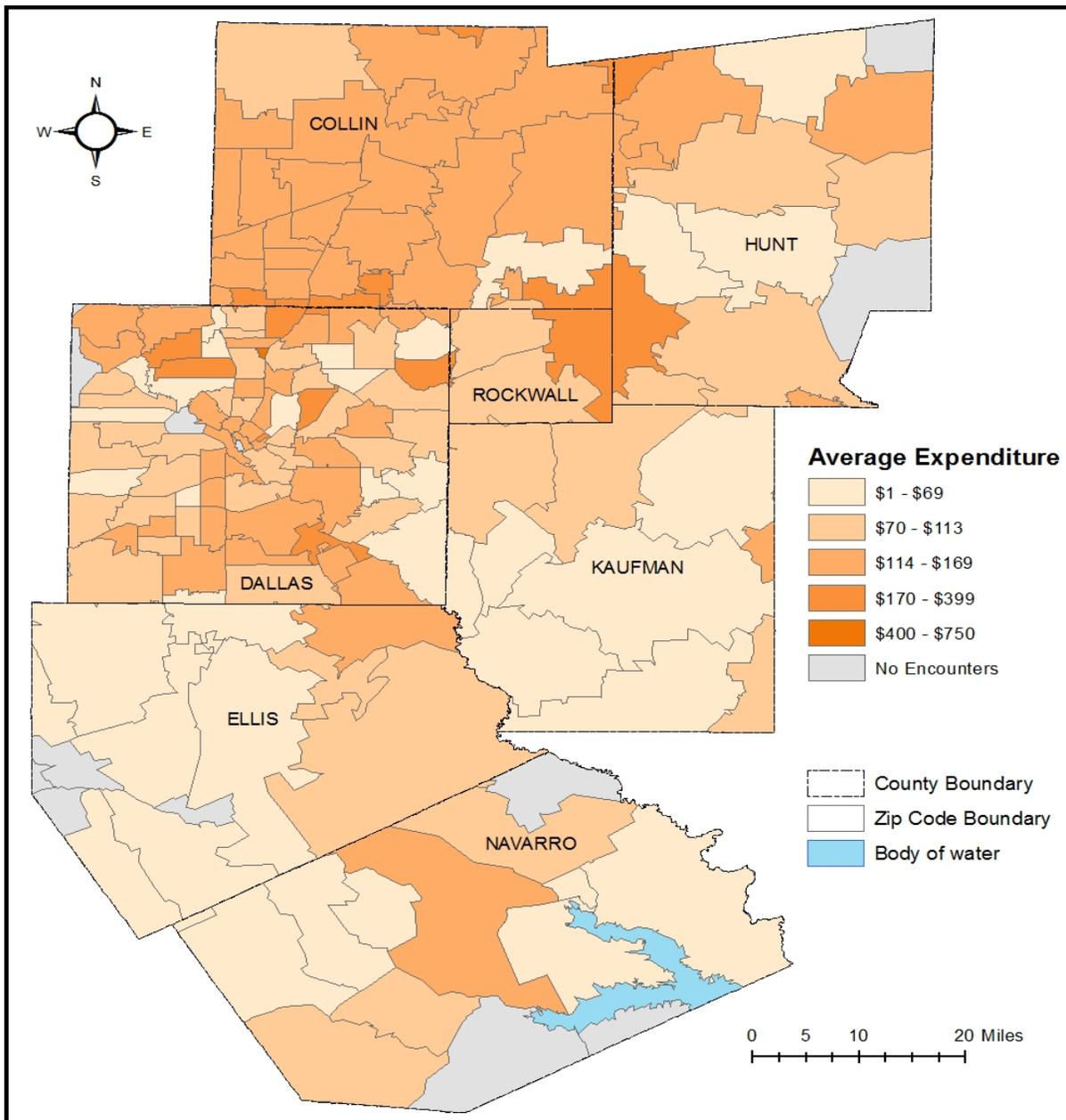


Figure 4. Individual Collin County Residents Served by Service Category Each Study Year



Map 3

Average Encounter Expenditure by Billing Zip Code All NorthSTAR Counties in 2009



Map created April 23, 2010 by the Mental Sciences Institute at UNTHSC. Map based on encounter data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

For Collin County clients in 2009 there were 53,546 encounters with a total expenditure of \$5.5 million, for an average cost of \$103.68 per encounter. In the 10% random sample from all other counties (i.e. 10% of each of the other counties individually) in 2009, there were 24,243 encounters for 1,807 individuals with a total expenditure of \$2,477,149; at \$102.17 per encounter. Costs per individual are not possible with these data as individuals typically receive more than one service and are duplicated across service lines.

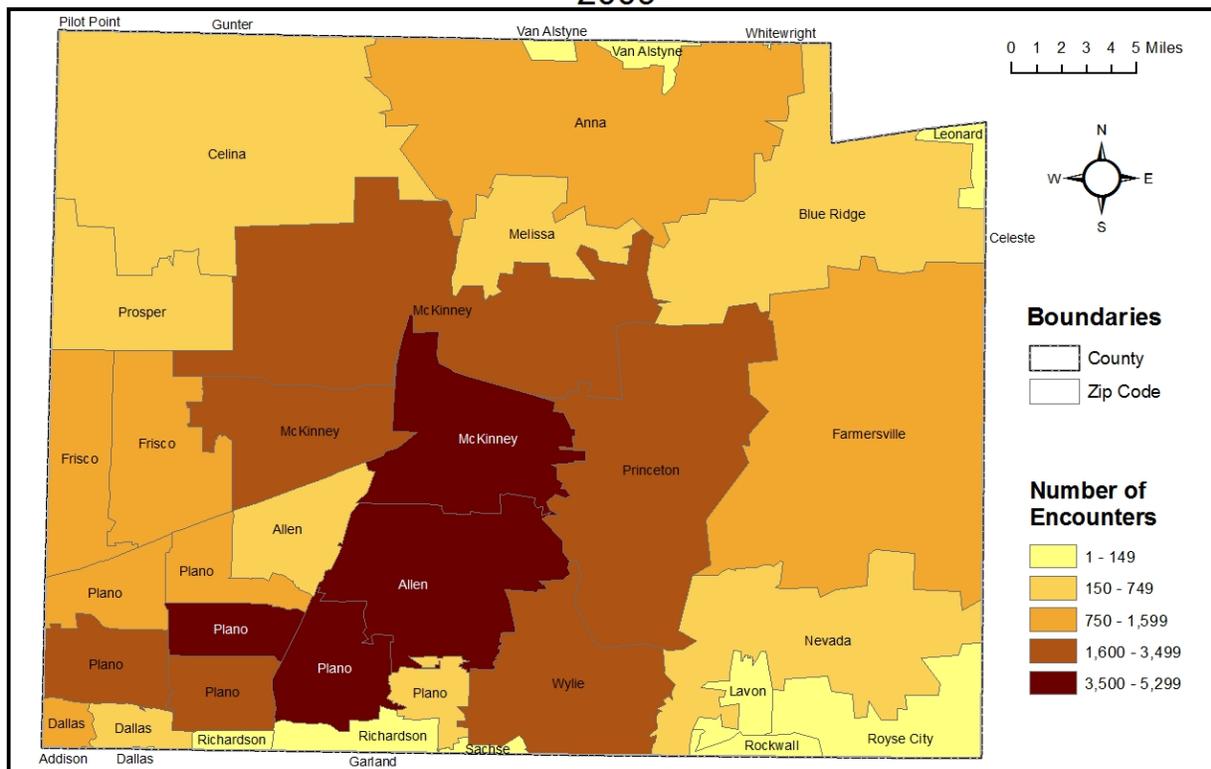
How were encounters distributed within Collin County for Collin County residents' urban and rural status?

In 2009 there were 53,546 encounters documented for all individuals receiving a service when reporting a residence in Collin County, an increase over 2008. For all three years the 139,878 encounters in the data set for someone who was a Collin County resident during the three years represented 362 zip codes.

There are 45,714 encounters in Map 4 representing 85.4% of all the encounters by Collin County residents in 2009. Persons may have lived in Collin County but not had a Collin County billing zip code in the data files due to the system overwriting billing zip codes or due to the person using a billing address outside of Collin County such as a parent's or guardian's address not in Collin County. Another method to determine patterns of use for rural or urban residence would be to identify housing addresses for a sample of individuals currently in the system, stratified by rural/urban zip codes and compare these to NorthSTAR billing zip codes.

Map 4 provides information for 2009 about the number of encounters Collin County residents whose billing zip codes were in Collin County. The purpose of map 4 is to illustrate the utilization of service by rural and urban residents to the best of the ability of this data to reflect that status. This map is similar to Map 1 on page 6. These data do not contain the person's physical housing address. Therefore the map illustrates the locations of the billing zip codes for those individuals only if that billing zip code was in Collin County. Appendix IV provides the same information for all study years combined in Map 13.

Map 4 Number of Community Based Services Encounters
Collin County Residents by Billing Zip Code
2009



Map created May 5, 2010 by the Mental Sciences Institute at UNTHSC. Map based on encounter data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

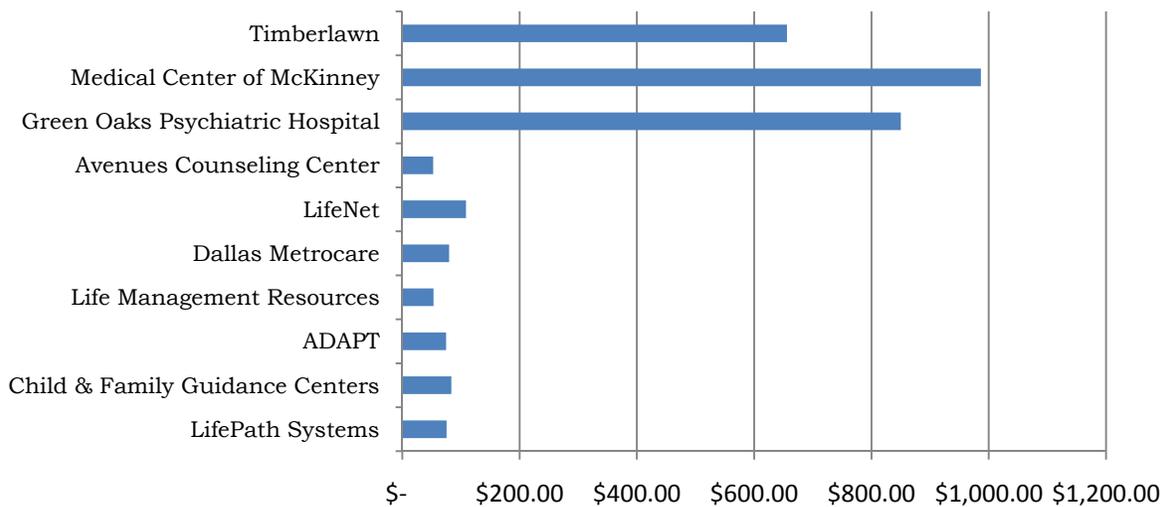
Expenditures: How are funds distributed among the top 10 largest outpatient inpatient community based providers for Collin County residents?

Table 5 displays the number of encounters, total amounts paid, average rate per encounter/visit, and the average rate paid per client for the major providers of services to Collin County residents during calendar year 2009.

Table 5. Top 10 Largest Agency Providers of Community Based Services to Collin County Residents in NorthSTAR by Encounters, Amount Paid, Individuals and Average Rates Paid 2009

<u>Outpatient</u>	2009		
	Encounters	Paid	Average Rate/Encounter
LifePath Systems	18,786	\$ 1,418,189	\$ 75.49
Child & Family Guidance Centers	6,341	\$ 530,674	\$ 83.69
ADAPT	4,870	\$ 364,037	\$ 74.75
Life Management Resources	5,143	\$ 274,395	\$ 53.35
Dallas Metrocare	2,149	\$ 171,768	\$ 79.93
LifeNet	459	\$ 49,907	\$ 108.73
Avenues Counseling Center	2,796	\$ 147,545	\$ 52.77
<u>Inpatient</u>			
Green Oaks Psychiatric Hospital	1,621	\$ 1,378,068	\$ 850.13
Medical Center of McKinney	166	\$ 163,799	\$ 986.74
Timberlawn	330	\$ 216,420	\$ 655.82

Figure 5. Rate per Encounter from Table 5



Expenditures: Do expenditures differ for Collin County Medicaid and Non-Medicaid insured populations in the NorthSTAR program?

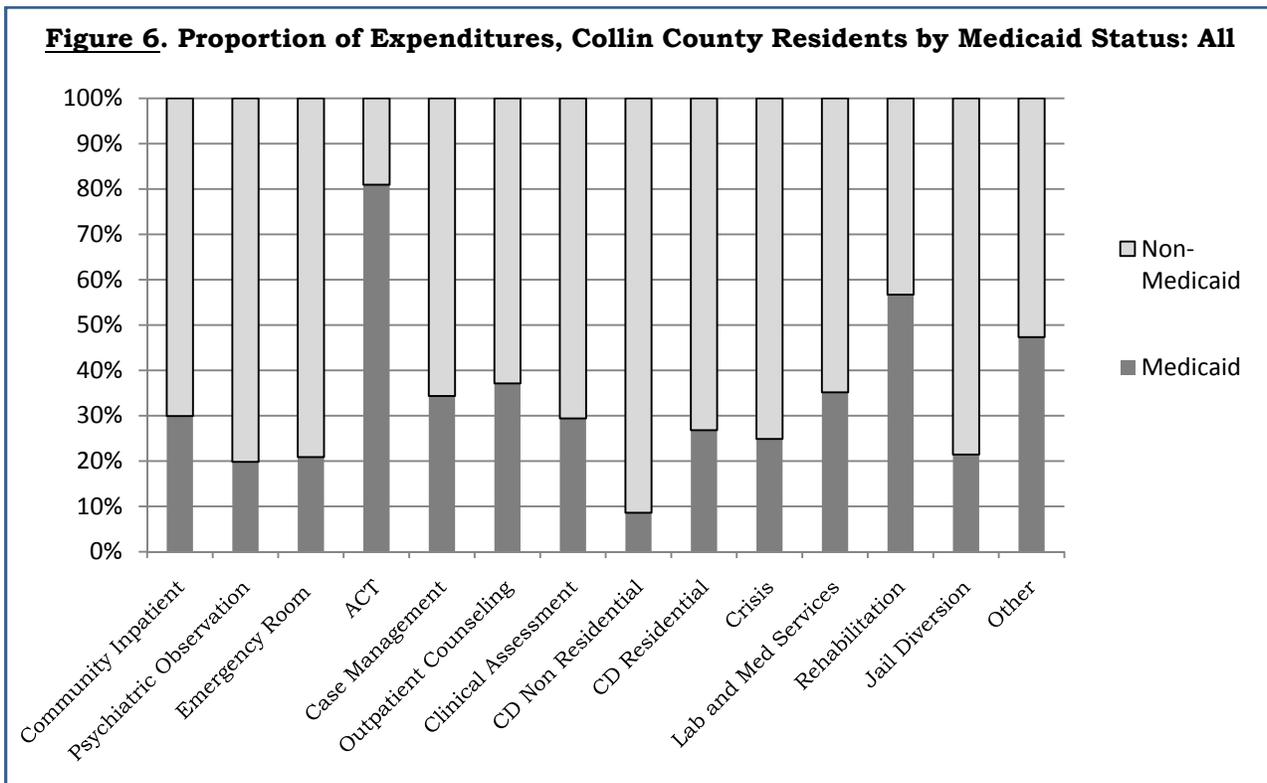
Criteria for Medicaid coverage are more stringent than the criteria for qualifying in the category of 200% and below poverty.

Many groups of people are covered by Medicaid. Within these groups certain requirements must be met such as age, pregnancy, or disability; your income and resources (like bank accounts, real property, or other items that can be sold for cash); and whether you are a U.S. citizen or a lawfully admitted immigrant. The rules for counting your income and resources vary from state to state and from group to group. There are special rules for nursing homes residents and for disabled children living at home.

http://www.quickbrochures.net/medicare/texas_medicaid_medicare.htm#eligibility

Total Collin County residents listed as Medicaid enrollees were 32,149 in April 2010. <http://www.hhsc.state.tx.us/research/MedicaidEnrollment/PIT/201004.html>

Figure 6 illustrates that 32.4% (\$4.9 Million) of all expenditures in the three study years for the community-based service categories were for Medicaid enrollees; whereas 67.6% (\$10.2 Million) of the expenditures for Collin County residents in these service categories were for non-Medicaid persons qualifying under the 200% of poverty eligibility threshold. This is consistent with the first quarter DSHS Data Book statistics for State Fiscal Year 2010 (i.e. 9/1 – 12/31 2009) showing approximately 63% of the individuals served in that quarter were non-Medicaid indigent recipients.



An equal or larger proportion of expenditures in 2009 were for Medicaid covered individuals compared to 2008 for all service categories except ACT, Case Management, CD Residential, Clinical Assessment and Jail Diversion services in which larger proportions were covered by non-Medicaid funds. The decrease in Medicaid covered services may be related to insufficient documentation to qualify clients for Medicaid, since in all other categories the proportion of Medicaid patients increased.

Table 6 provides the information in a tabular format for the past two years only to examine service categories more precisely.

Table 6. Medicaid and Non-Medicaid Expenditures 2008 and 2009 by Category of Community Based Services

Service Category	Medicaid Status	2008		2009	
		Expenditure	Percent	Expenditure	Percent
Psychiatric Observation	Medicaid	\$ 120,528	22.1%	\$ 134,898	22.0%
	Non-Medicaid	\$ 425,526	77.9%	\$ 478,194	78.0%
	Total	\$ 546,054		\$ 613,092	
Community Inpatient Services	Medicaid	\$ 541,124	29.1%	\$ 461,805	38.3%
	Non-Medicaid	\$ 1,319,370	70.9%	\$ 743,641	61.7%
	Total	\$ 1,860,494		\$ 1,205,446	
Crises Intervention/ Stabilization Services	Medicaid	\$ 13,223	21.4%	\$ 15,503	28.9%
	Non-Medicaid	\$ 48,516	78.6%	\$ 38,060	71.1%
	Total	\$ 61,739		\$ 53,563	
Emergency Room Services	Medicaid	\$ 5,051	21.0%	\$ 7,395	21.7%
	Non-Medicaid	\$ 18,997	79.0%	\$ 26,692	78.3%
	Total	\$ 24,048		\$ 34,087	
ACT	Medicaid	\$ 25,150	81.1%	\$ 48,645	74.2%
	Non-Medicaid	\$ 5,850	18.9%	\$ 16,950	25.8%
	Total	\$ 31,000		\$ 65,595	
Case Management	Medicaid	\$ 83,822	33.1%	\$ 119,212	31.9%
	Non-Medicaid	\$ 169,732	66.9%	\$ 254,362	68.1%
	Total	\$ 253,554		\$ 373,574	
Outpatient Counseling	Medicaid	\$ 80,845	34.4%	\$ 101,341	38.5%
	Non-Medicaid	\$ 154,498	65.6%	\$ 161,862	61.5%
	Total	\$ 235,343		\$ 263,203	
Clinical Assessment	Medicaid	\$ 81,433	31.4%	\$ 74,183	26.9%
	Non-Medicaid	\$ 178,148	68.6%	\$ 201,757	73.1%
	Total	\$ 259,581		\$ 275,940	
Chemical Dependency Non Residential	Medicaid	\$ 29,741	7.2%	\$ 51,141	8.7%
	Non-Medicaid	\$ 380,919	92.8%	\$ 538,733	91.3%
	Total	\$ 410,660		\$ 589,874	
Chemical Dependency Residential	Medicaid	\$ 52,666	27.3%	\$ 58,490	23.8%
	Non-Medicaid	\$ 140,036	72.7%	\$ 187,232	76.2%
	Total	\$ 192,702		\$ 245,722	
Rehabilitation	Medicaid	\$ 448,139	54.6%	\$ 628,498	60.2%
	Non-Medicaid	\$ 372,141	45.4%	\$ 415,804	39.8%
	Total	\$ 820,280		\$ 1,044,302	
Labs and Medication Services	Medicaid	\$ 202,746	36.1%	\$ 271,797	34.7%
	Non-Medicaid	\$ 358,418	63.9%	\$ 511,461	65.3%
	Total	\$ 561,164		\$ 783,258	
Other	Medicaid	\$ 375	47.3%	\$ 718	50.6%
	Non-Medicaid	\$ 417	52.7%	\$ 700	49.4%
	Total	\$ 792		\$ 1,418	
Jail Diversion	Medicaid	\$ 990	45.2%	\$	0.0%
	Non-Medicaid	\$ 1,200	54.8%	\$ 2,425	100.0%
	Total	\$ 2,190		\$ 2,425	
Total	Medicaid	\$ 1,685,833	32.1%	\$ 1,973,626	35.6%
	Non-Medicaid	\$ 3,573,768	67.9%	\$ 3,577,873	64.4%
	Total	\$ 5,259,601		\$ 5,551,499	

Expenditures: Prescription Drug expenses for Collin County Residents

Managing and controlling the costs of pharmaceuticals for behavioral health treatment have been a continuing challenge for the behavioral health services industry since the 1950s. The NorthSTAR system has implemented innovative methods to effectively manage escalating costs in these areas while supporting evidence-based clinical practice.

Prescription drugs are covered either by Medicaid pharmacy benefits (i.e. Federal and State Dollars combined) or by state appropriated funds only, for non-Medicaid eligible persons qualified for NorthSTAR services.

Table 7 displays prescription drug Medicaid and non-Medicaid expenditures for each study year by coverage source.

Calendar Year	Medicaid	Proportion Medicaid	Non-Medicaid	Proportion for Non-Medicaid	Total
2007	\$ 1,772,252	78.67%	\$ 480,512	21.33%	\$ 2,252,764
2008	\$ 2,378,417	81.01%	\$ 557,668	18.99%	\$ 2,936,085
2009	\$ 1,704,518	64.90%	\$ 921,893	35.10%	\$ 2,626,411

Figure 7 displays the proportion of funds spent for Medicaid versus non-Medicaid prescriptions filled. A greater proportion of prescription drug expenditures is increasingly being spent for non-Medicaid eligible persons whose income is at or below 200% of the federal poverty threshold but have resources greater than those allowed for Medicaid coverage, compared to Medicaid covered individuals. When Medicaid eligibility is maximized Federal funds are drawn down to match State funds. Anyone not eligible for Medicaid has their services paid 100% by State funds

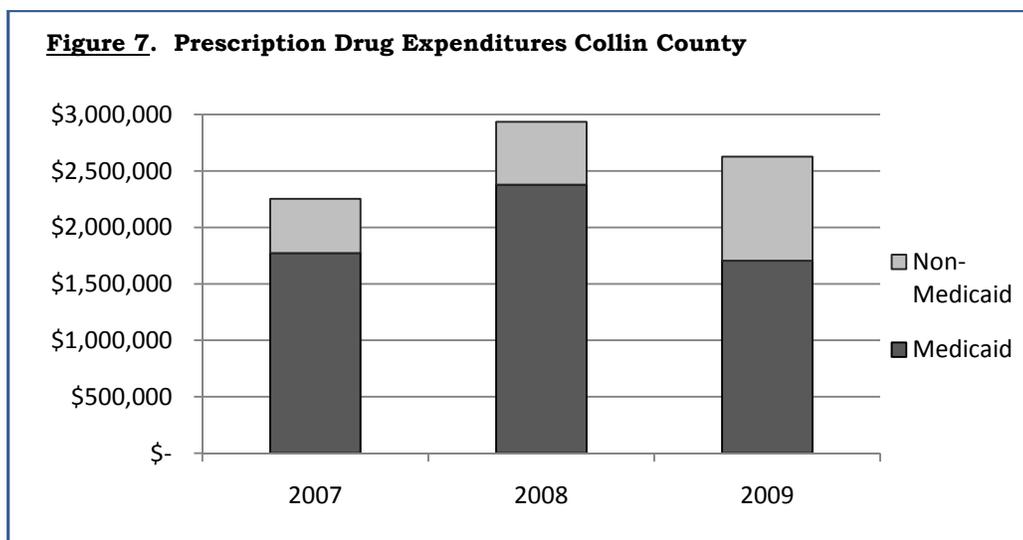


Table 8 provides details for each study year for the number of individuals, number of prescriptions filled (Rx), and the expenditure by study year. This information is useful in comparing data from other NorthSTAR counties.

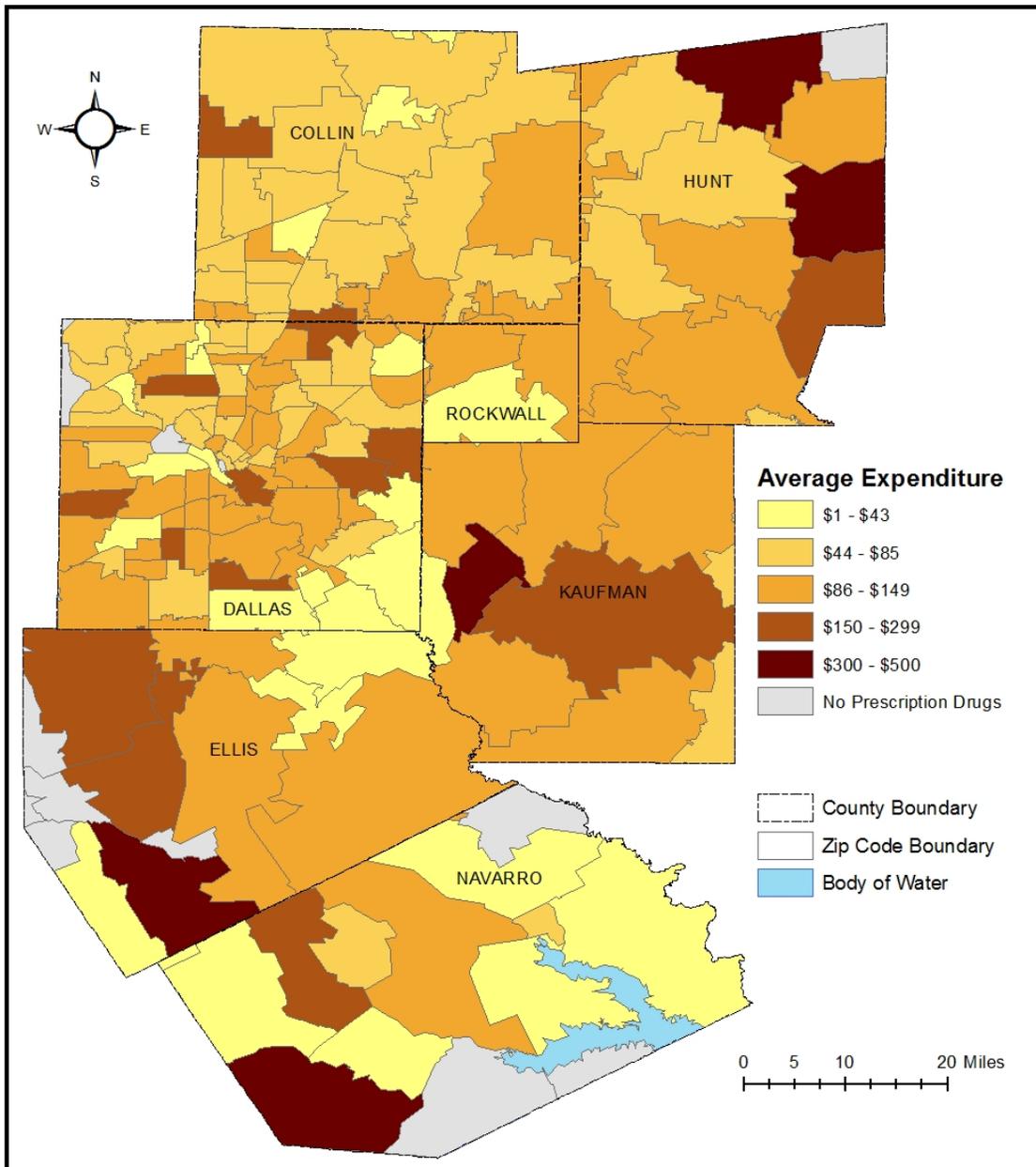
Table 8. Total Expenditures Collin County Prescription Medications All Study Years									
	2007			2008			2009		
SOURCE	Individuals	Rx Filled	Expenditure	Individuals	Rx Filled	Expenditure	Individuals	Rx Filled	Expenditure
Medicaid	1,201	10,140	\$ 1,772,252	1,323	12,223	\$ 2,378,417	1,168	9,268	\$ 1,704,518
Non-Medicaid	1,915	21,505	\$ 480,512	1,896	21,560	\$ 557,668	2,164	30,381	\$ 921,893
Total	2,116	31,645	\$ 2,252,764	3,219	33,783	\$ 2,936,085	3,332	39,649	\$ 2,626,411

The 2009 expenditures may not include all paid prescription drug claims because the system assumes ~90 days lag-time for all monthly data entry. Thus the expenditures for medications for Collin County residents served by NorthSTAR providers is estimated at potentially \$2,648, 298 versus \$2,626,411, still lower than the 2008 figure.

Map 5 illustrates the variations in the average expenditure per person for prescription medications by billing zip codes of NorthSTAR clients with prescription drug coverage, who lived in Collin County in 2009, and clients in the 10% sample from all other NorthSTAR counties. This map was produced using the average expenditure per prescription for persons with that billing zip code (total expenditures per person/total number of prescriptions for each person). Thus a range was calculated and reflects the utilization of prescriptions in the bracketed ranges.

Map 5

Average Prescription Drug Expenditure by Billing Zip Code All NorthSTAR Counties in 2009



Map created April 23, 2010 by the Mental Sciences Institute at UNTHSC. Map based on prescription medication data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

For Collin County clients in 2009 the average number of prescriptions per person was 12 for an average cost per prescription of \$ 66.00. In the 10% random sample for all other counties (i.e. 10% of each of the other counties individually) in 2009, 1,414 individuals filled 21,743 prescriptions for \$1,692,039; an average of 15 prescriptions per person at an expenditure of \$77.82 per prescription. This may reflect severity of illness differences.

State Hospital Utilization By Collin County Residents Covered By NorthSTAR

State hospital use is complicated and complex to analyze. Hospital “costs” are attributed to a mental health authority based on utilization within an allocated annual or bi-annual allowance for bed days.

Table 9 displays the expenditures attributed for state hospital use by Collin County residents for each study year. There were 318 individuals from Collin County with 457 separate admissions. The total cost and proportionate allocation of NorthSTAR’s state hospital bed allocation dollars for all three years was \$5,289,293. The 2009 amount in Table 9 represents 4.78% of the total NorthSTAR allocation of \$39.45 million.

An additional 102 admissions were reported for Collin County residents as forensic commitments and administrative transfers. These types of admissions are not charged against NorthSTAR’s state hospital bed allocation.

Table 9. State Hospital Utilization Collin County Residents Each Study Year

Calendar Year	Persons in the Hospital	Bed Days	Average Length of Stay (for this year only)	Allocation of "Cost"	Average Expenditure Per Person (for this year only)
2007	151	5,940	39.34	\$ 1,442,360	\$ 9,552
2008	182	6,806	37.40	\$ 1,934,653	\$ 10,630
2009	165	6,792	41.00	\$ 1,912,280	\$ 11,590
Sums		<u>19,538</u>		<u>\$ 5,289,293</u>	<u>\$ 13,493</u>

There are a few individuals hospitalized for periods of time that cross the state fiscal or calendar year parameter for cost attribution. For example, the 182 persons in the hospital in 2008 may have included some who were in the hospital in 2007.

These are not separate “admissions,” and cannot be summed. The average length of stay is provided for each year and not for individuals.

Length of stay is typically calculated at discharge. The DSHS web site provides a 433 page report with quarterly data for each state hospital.

<http://www.dshs.state.tx.us/mhreports/mhbook/MhBook10q1.pdf>

To analyze the length of stay for a Collin County resident relative to others in the Texas state hospitals would require additional research.

Invoiced Costs

There are other services provided to the counties in NorthSTAR using state and local funds provided to Value Options. Table 10 displays the amounts for all NorthSTAR invoiced expenditures, and the amount and proportions attributed as Collin County’s share of these invoiced expenses. This means Collin County would have received or should have received this dollar value in invoiced services for its residents.

Table 10. Invoiced Expenditures Attributed to Collin County All Study Years

	State Fiscal Year 2007	State Fiscal Year 2008	State Fiscal Year 2009
Total NorthSTAR Invoiced Expenses	\$ 4,533,918.59	\$ 5,318,835.22	\$ 7,414,082.00
Percent Attributed to Collin County	7.10%	6.90%	6.85%
Amount Attributed to Collin County	\$ 321,908.22	\$ 366,999.63	\$ 507,977.25
<u>Total All Years</u>			\$ 1,196,885.10

Invoiced costs are “attributed” to each county based on an estimate of the proportion of overall services utilization. These services include contract services that are either not yet sufficiently mature to calculate their costs on rates, or not expected to develop a rate structure. Examples of the immature services might be new specialized case management services for forensic populations, or new or exploratory day shelter services. An example of an invoiced service not expected to develop into a rate structure is the contract between VO and the Mental Health America (formerly Mental Health Association) of Greater Dallas.

FUNDING MENTAL HEALTH AUTHORITIES IN TEXAS

Table 11 presents the State Fiscal Year 2009 Allocation to each Mental Health and Mental Retardation Authority (MHMRA) in Texas with Collin County data extrapolated from analysis of expenditures. MHMRAs are not funded based on population. Rather, the per-capita funding is calculated by dividing the population of the area served by that MHMRA into the funding appropriation for each agency.

We have calculated a new funding amount for NorthSTAR (VO and NTBHA) and for Collin County.

At the end of State Fiscal Year 2009 VO received a supplemental \$5,000,000. This has been added to the line and a new per capita distribution calculated. See the note in blue font at the bottom of Table 11.

Next, the calculation we have performed for Collin County was performed using the 2009 expenditures for community based services plus pharmacy expenditures plus invoiced services. The state hospital allocation was not included. A rough calculation of the per capita equivalent for Collin County was entered.

This information can be interpreted only within certain limits. The DSHS allocation to the MHAs represents state appropriated dollars. Medicaid payments and state hospital costs are outside of this amount, and systems’ capacities to attract Medicaid dollars differ.

MHAs have varying needs, opportunities, and capacities to acquire funds to provide services to persons with developmental disabilities (also referred to as mental retardation services), or to access Medicaid for children through the Child Health Insurance Program (CHIP expenditures), or to acquire funds from local school systems. Thus this “per capita” distribution does not include the funding LifePath Systems has for example, for mental retardation services or other special programs.

Population sectors in this list comparable to the size of Collin County include the Texana Center in South Texas, Bluebonnet, and El Paso, none of which are in a major metropolitan area, and all with different per capita funding amounts. Table 11 is only one perspective and one aspect of a complex and dynamic system of funding for a variety of services provided in the communities by the MHMRAs and other providers.

Table 11. Distribution of State of Texas Appropriated Dollars by DSHS to the Mental Health Authorities with NorthSTAR and Collin County modified

<u>LOCAL MH AUTHORITY</u>	<u>FY09 DSHS Allocation (includes crisis \$)</u>	<u>Percentage of Statewide</u>	<u>Population</u>	<u>Per Capita Funding</u>	<u>Per Capita Funding per TX Average</u>
	\$ 341,831,531.00	(TOTAL)	25,373,947	\$ 13.47	(STATEWIDE MEAN)
WEST TX CENT	\$ 6,177,831	1.81%	206,092	\$ 29.98	223%
ACCESS	\$ 2,897,201	0.85%	107,842	\$ 26.87	199%
COASTAL PLAINS	\$ 6,249,291	1.83%	239,761	\$ 26.06	193%
HELEN FARABEE	\$ 7,655,845	2.24%	310,049	\$ 24.69	183%
CENT LIFE RESC	\$ 2,358,929	0.69%	102,497	\$ 23.01	171%
LAKES REG MHMR	\$ 3,518,259	1.03%	160,161	\$ 21.97	163%
CENTRAL PLAINS	\$ 2,024,888	0.59%	95,081	\$ 21.30	158%
CAMINO REAL MHMR	\$ 4,398,826	1.29%	210,927	\$ 20.85	155%
CONCHO VALLEY	\$ 2,513,606	0.74%	122,531	\$ 20.51	152%
SPINDLE TOP	\$ 7,689,222	2.25%	415,763	\$ 18.49	137%
PERMIAN BASIN	\$ 5,638,305	1.65%	307,863	\$ 18.31	136%
LUBBOCK REG	\$ 5,478,334	1.60%	307,690	\$ 17.80	132%
BETTY HARDWICK	\$ 3,116,523	0.91%	180,315	\$ 17.28	128%
COMM HEALTHCORE	\$ 7,769,788	2.27%	452,094	\$ 17.19	128%
BORDER REG MHMR	\$ 5,812,441	1.70%	345,744	\$ 16.81	125%
EL PASO MHMR	\$ 12,752,730	3.73%	773,125	\$ 16.50	122%
GULF BEND MHMR	\$ 2,983,357	0.87%	182,755	\$ 16.32	121%
NUECES CO MHMR	\$ 4,857,472	1.42%	323,890	\$ 15.00	111%
TEX PANHANDLE	\$ 5,967,690	1.75%	400,960	\$ 14.88	110%
BURKE CENTER	\$ 5,687,778	1.66%	387,078	\$ 14.69	109%
ANDREWS CENTER	\$ 5,573,210	1.63%	397,603	\$ 14.02	104%
TEXOMA MHMR	\$ 2,720,906	0.80%	196,413	\$ 13.85	103%
BRAZOS VALLEY	\$ 4,090,374	1.20%	302,464	\$ 13.52	100%
HEART OF TEXAS	\$ 4,663,742	1.36%	350,889	\$ 13.29	99%
NORTHSTAR	\$ 50,005,638 *	13.17%	3,772,013	\$ 13.25	89%
CENTRAL COS	\$ 5,609,134	1.64%	430,606	\$ 13.03	97%
AUSTIN-TRAVIS	\$ 12,643,236	3.70%	992,773	\$ 12.74	95%
HILL COUNTRY	\$ 7,576,557	2.22%	595,591	\$ 12.72	94%
CENT HEALTH CR	\$ 20,124,621	5.89%	1,636,642	\$ 12.30	91%
TROPICAL TEX	\$ 15,062,771	4.41%	1,232,576	\$ 12.22	91%
GULF COAST	\$ 7,400,570	2.16%	612,988	\$ 12.07	90%
PECAN VALLEY	\$ 5,051,978	1.48%	420,391	\$ 12.02	89%
MHMR TARRANT C	\$ 21,814,974	6.38%	1,825,548	\$ 11.95	89%
HARRIS MHMRA	\$ 47,971,862	14.03%	4,096,052	\$ 11.71	87%
BLUEBONNET TR	\$ 8,756,574	2.56%	796,074	\$ 11.00	82%
TRI-CNTY MHMR	\$ 6,762,903	1.98%	623,634	\$ 10.84	80%
TEXANA CENTER	\$ 8,142,452	2.38%	753,369	\$ 10.81	80%
DENTON CO MHMR	\$ 7,311,713	2.14%	706,103	\$ 10.36	77%
Collin County using phase one data. See Narrative.	\$ 8,177,910		762,000	\$ 10.73	

*NorthSTAR allocation was originally \$45,005,638: \$5,000,000 supplemental appropriation disbursed at the end of State FY09 was added to compute new per capita distribution. Percents not changed. Original per capita was \$11.93. NorthSTAR amount does not include State Hospital allocation.

SECTION TWO Systems Issues

The following systems issues are addressed in this section of the report.

1. Population risk for behavioral health care needs based on economic status
2. Organizational costs, communications and planning

Population risk for behavioral health care needs based on economic status

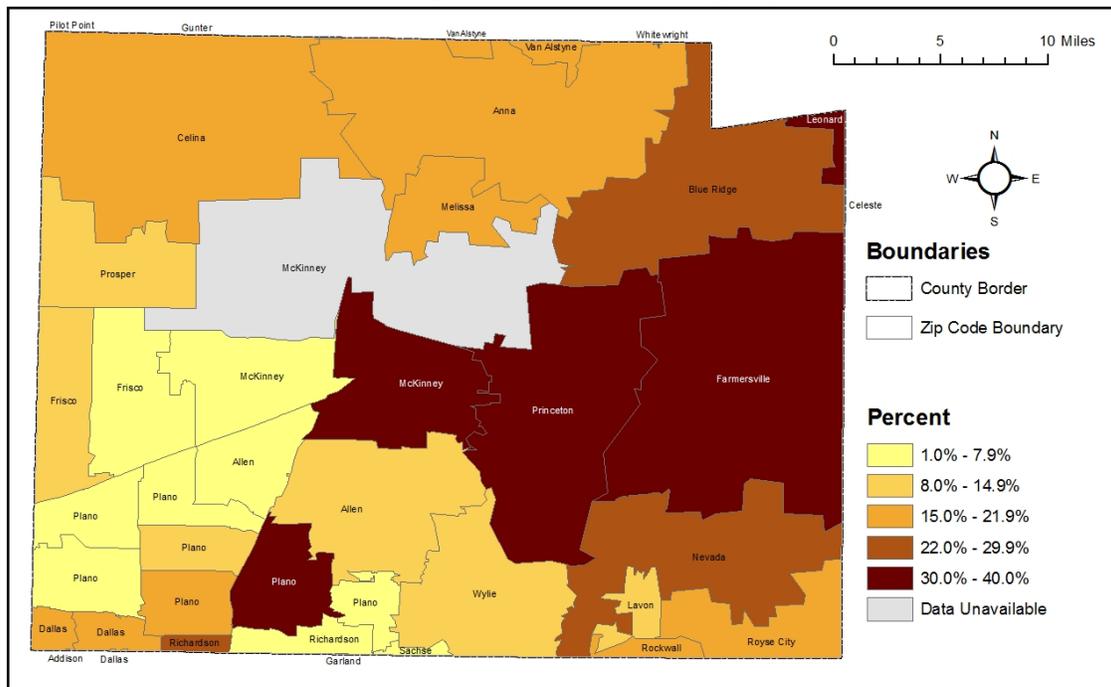
Map 6 displays the 2008 estimated percent of Collin County residents with income at or below 200% of the Federal poverty level by zip code. Of the estimated 95,156 Collin County residents aged 65 and under who had income at or below 200% of the Federal poverty level living in Collin County in 2006, (Source: Small Area Health Insurance Estimates by the U.S. Census Bureau, published August 2009), 62.7% (59,623) were estimated to be uninsured.

Population risk rates published by the National Institutes of Health (NIH) indicate that in the uninsured group of Collin County residents under 200% of poverty 3,577 may have a serious mental illness (schizophrenia, major depressive disorder, or bipolar disorder), and an additional 11,328 may have a mental health problem needing treatment.

Additionally, among those Collin County residents with an income above 200% of poverty, 9.93% (67,372) are estimated to be uninsured, adding an additional risk population to the estimates above.

Map 6

**Percent of Population At or Below 200% of Federal Poverty Level
Collin County 2008 Estimates by Zip Code**



Map created April 24, 2010 by the Mental Sciences Institute at UNTHSC. Map based on 2008 estimates of population at or below 200% of federal poverty level by zip code provided by the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

The Current displayed information reflects missing data for one section of Collin County. We have requested those data and upon receipt we will issue a replacement map for this information.

Applying the prevalence rates from the National Institutes of Health suggest that among those persons over the 200% of poverty threshold approximately 4,000 may suffer from a serious mental illness. An additional 12,800 of them may have a need for some mental health service ranging from the most intensive in lower numbers, to supportive counseling and medications in higher numbers. Of the estimated 678,215 persons aged 65 and under living in Collin County, 18.7% in all income levels were estimated to be uninsured.

Chemical Dependency Risks

The Substance Abuse and Mental Health Administration (SAMHSA) publishes estimates for chemical dependency treatment risks. These numbers should be added to those estimated for mental illness rates to acquire the total number of persons at-risk for behavioral health treatment needs in Collin County.

In February 2010 The National Survey on Drug Use and Health reports the following current information about chemical dependency risks.

More than 18.4 million full-time employees aged 18 to 64 (15.5 percent of the full-time adult workers in that age range) had no health insurance coverage and represented the majority (54.5 percent) of adults under age 65 without health insurance coverage.

An estimated 3.0 million uninsured full-time workers (16.3 percent) needed substance use treatment in the past year; specifically, 13.3 percent needed alcohol use treatment, 5.6 percent needed illicit drug use treatment, and 2.7 percent needed both alcohol and illicit drug use treatment.

Of the uninsured workers who needed substance use treatment in the past year, 12.6 percent (378,000 persons) received treatment at a specialty facility.

Although the public might assume that most adults without health insurance are unemployed or part-time workers, the reality is just the opposite. Over 18 million adults aged 18 to 64 were working full time and had no health insurance coverage; this represents more than half of uninsured nonelderly adults.

NSDUH data indicate that there is a substantial need for substance use treatment among uninsured workers—particularly among males and workers aged 18 to 25.

Few of those who needed treatment received it.

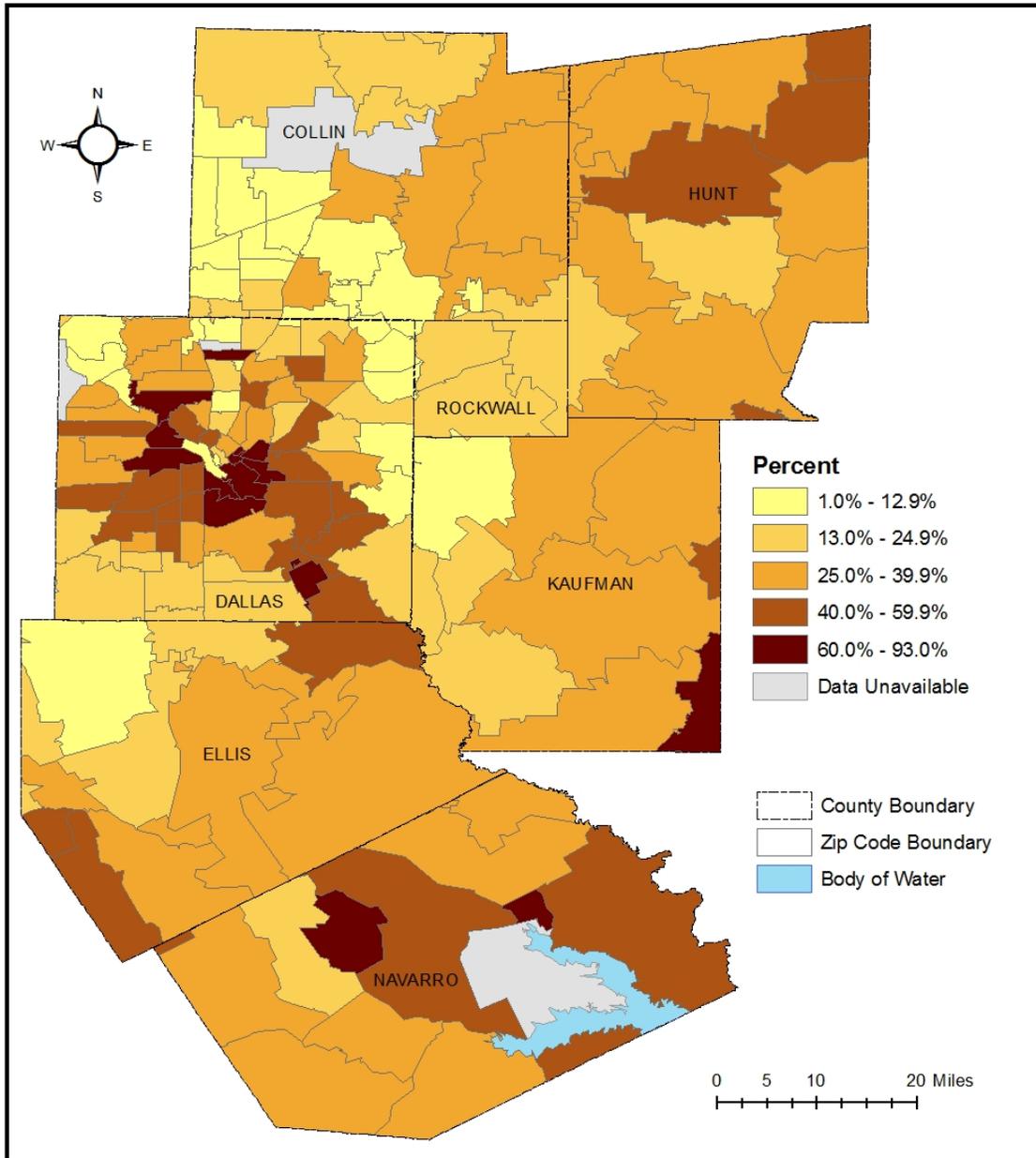
Given the health, economic, and social consequences of untreated substance use disorders, uninsured workers need access to effective substance use treatment services and high-quality care.

Addressing the substance use treatment needs of uninsured workers with treatment and recovery services that are coordinated and integrated with primary health care may result in improved health outcomes and greater productivity.

Behavioral services risks estimates are complex and one should apply national rates with caution, anticipating possible over or under estimation depending on other factors in the area of interest.

Map 7 displays the proportion of each NorthSTAR county residents estimated to be living at or below the 200% of poverty threshold for NorthSTAR services eligibility as “indigent.”

Map 7
Percent of Population At or Below 200% of Federal Poverty Level
NorthSTAR 2008 Estimates by Zip Code



Map created April 24, 2010 by the Mental Sciences Institute at UNTHSC. Map based on 2008 estimates of population at or below 200% of federal poverty level by zip code provided by the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

Organizational Costs, Communications and Planning

Analyses presented in this report are intended to inspire meaningful discussions within Collin County and among involved constituencies to address issues of mutual concern and to better serve the needs of Collin County as it grows and changes. We found no noticeable differences between the data commonly disseminated in the NorthSTAR system and these data from the DSHS.

Current concerns about the relative position of Collin County as a member of NorthSTAR serving an indigent population with behavioral health needs, appear to be related more to how data have been communicated, lack of transparency in provider negotiations, and system components that rely on status quo or have inefficiencies resulting in service delivery gaps. While this phase of the study identified no evidence of systematic disparities between Collin County and the rest of NorthSTAR, there are gaps in the services array in Collin County.

Observations

1. Although there are management duplications in NorthSTAR, VO has nearly the full burden of administrative responsibilities and accountability for the operations of NorthSTAR. While revenue might accrue to Collin County if some profits retained by VO were re-distributed, the “profit” margin is also viewed as including dollars in escrow that VO may be expected to reinvest in the services system. The management overhead for VO is significantly larger than for each individual provider, but it is unclear what that overhead is and what it buys for the system.
2. The individual providers tend to view VO as the “authority” inasmuch as VO controls the flow of dollars to the system. VO voices interest in a healthy community and should be held accountable for addressing systems and community needs in fair and equitable ways.
3. When considering only the way in which the available dollars were spent, the system appears to have clear needs in specific areas. Phase two will address this issue in more detail. However, taken all together, these financial and community characteristics suggest that service provider networks have not kept pace with the behavioral health needs in Collin County. This is illustrated in the patterns of utilization outside of Collin County by Collin County residents. This may be due to limited pro-active engagement in the planning and development of community resources in Collin County. It may also be because the types of services needed by some individuals are not available in Collin County.
4. In the absence of a system-wide, county-specific plan for behavioral health services to the eligible population, Collin County leadership should initiate and sustain a dialog with VO as the de facto authority for behavioral health services in the NorthSTAR area.
5. Funding of behavioral health services in Collin County should be consolidated and evaluated for re-allocations for improving outcomes.
6. Data disseminated throughout the NorthSTAR system are abundant. Data are difficult to understand and interpret in context of anecdotal observations or systems expectation. When discussing systems issues, defining terminology is of critical importance to accurate communication.
7. Collin County needs greater visibility in multiple arenas within the NorthSTAR system to engage and interact as a major partner. Most of the persons interviewed, not only in Collin County, were dissatisfied with the existing system. Some persons interviewed express satisfaction with some aspects of the system, such as law enforcement officers who appreciate short turn-around times at hospitals or emergency rooms. However our observation is that the overall system’s communications mechanisms are unnecessarily fragmented and inefficient producing obstacles to effective working relationships. Without effective working relationships across the system, data collection is inconsistent, systems problems take longer to define and resolve, and costs are higher than in an efficient system.

8. As it currently is configured and operates, the North Texas Behavioral Health Authority has little influence and is minimally engaged in the provider or consumer network. NTBHA does not act as a Mental Health Authority that provides leadership in community planning or advocacy. The day to day operations of NTBHA seem to be focused on immediate problem solving with limited vision or long range measurable goals.

This is not a new or revealing statement. However, from an organizational dynamics perspective it appears that these conditions have existed so long that they are unlikely to improve in the near future. So long as organizational costs, communications and planning are obstacles rather than bridges to progress, anticipating or hoping for change to occur may be futile and exacerbate existing problems.

Recommendations

The combined perspective we have developed from examining both quantitative and qualitative data prompt us to make the following specific recommendations for action subsequent to Phase One.

1. Certain current VO roles should be decentralized to re-empower local communities.
2. The North Texas Behavioral Health Authority (NTBHA) role should be decentralized to empower a new configuration of partners in the NorthSTAR system who can effectively interact with each other and the managed care organization.
3. Collin County should consider hiring a Behavioral Healthcare Director as soon as possible, using an independent process.
4. Collin County should consider reinstating some local investment of dollars into the NorthSTAR system, with a memorandum of understanding or contract for the deployment of those dollars.

We suggest that the Collin County Behavioral Healthcare Director have at least the following responsibilities: Ideally located within the County Health Department to create a truly integrated behavioral health care system for Collin County in partnership with the current system; represent Collin County interests in NorthSTAR; have budget, program planning and management authority, including direct oversight of all behavioral health related operations or contracts. The person should have responsibility and accountability for acquiring and interpreting data related to NorthSTAR services in Collin County.

Final Comment

Data analyses and discussions in this report are provided to stimulate additional meaningful discussions among Collin County constituencies, with the three major partners in the system, and with service providers, CEOs and CFOs, and with the communities interested in behavioral health care services for Collin County.

None of our analyses suggest systematic differential treatment of Collin County within the NorthSTAR system. However, evidence suggests that inattention to certain aspects of the system have contributed to a result understandable misinterpreted as deliberate differential treatment. Establishing open communications and working on bridge building through common interests and differing perspectives are needed to build bridges and overcome current systems' limitations.

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- APPENDIX III** References
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News Article regarding profit and tax revenues

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APPENDIX II

List of data elements collected from DSHS

The following data were acquired from DSHS without names for calendar years 2007, 2008, and 2009 (January 1, 2007 through December 31, 2009) for persons identified at the time of service as a resident of Collin County, and for a 10% random sample of persons served with residence in the other six counties in the NorthSTAR program. The sample for the six NorthSTAR counties outside of Collin County was drawn from the first six months of the calendar year 2007 and those clients' data was included for the remainder of the three years of the sample window of time.

- NorthSTAR Identification Number
- Medicaid and Non-Medicaid Indicator (at the time of encounter)
- Enrollment beginning and ending date
- Disenrollment reason
- Date of Birth (YYYY/MM/DD)
- Zip Code of client's residence
- County Code of the client's residence for each encounter
- Name of county of the client's residence for each encounter
- State code of the client's residence for each encounter
- Gender
- Federal Race
- Federal Ethnicity
- Diagnosis for each encounter, service, or visit (with paid or denied indicator)
- Diagnoses at assessment (Axis I, II, III, IV, and GAF)
- Date of each encounter, service, or visit (with paid or denied indicator)
- Service code and description of service for each encounter or visit (outpatient, medication, inpatient, other such as rehabilitation, job counseling; with paid or denied indicator)
- Provider for each encounter or visit
- Total allowed units for each encounter
- Total allowed amount for each encounter
- Total billed for each encounter
- Total payment amount for each encounter
- State hospital bed days and bed day costs
- Admission date and discharge date for inpatient episodes by inpatient facility

Contractual Proposed Phase One Report Elements

- A) Review mental health operations specific to legal residents of Collin County:
 - 1) Overview of current services and system (enrollment limits, costs, management structure)
 - 2) Trends of current system (cost, enrollment)
 - 3) Amount expended for Collin County customers
 - 4) Number of providers in Collin County and pct of workload for each
 - 5) Financial impact estimated for non-treatment of persons suffering from mental illnesses
- B) Review performance of current system
 - 1) Barriers of entry (if any) into the system for customers
 - 2) Barriers of entry (if any) into the system for providers
 - 3) Expenditures in relation to population with NTBHA and other Texas State mental health systems
 - 4) Access to services for customers including location of providers and provider accessibility
- C) Recommendations
 - 1) Recommendations to improve the current system
 - 2) Preliminary analysis of costs and methods to implement recommendations

APPENDIX III

RESOURCE DOCUMENTS

Ganju, V. *Mental Health Transformation: Moving Toward a Public Health, Early-Intervention Approach in Texas*. **Psychiatric Services**; January 2008, 59(1):17-20.

Kelley, M. *House bars earmarks to for-profits.*, USA Today; March 11, 2010.

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593-602.

Kessler, R.C., Chiu, W. T., Demler, O., Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 617-627.

Perryman: Costs, Consequences, and Cures!!! An Assessment of the Impact of Severe Mental Health and Substance Abuse Disorders on Business Activity in Texas and the Anticipated Economic and Fiscal Return on Investment in Expanded Mental Health Services, May 2009. The Perryman Group Report

Robst, J. *Development of a Medicaid Behavioral Health Case-Mix Model*. **Evaluation Review**; October 2009, 33(6) 519-538.

Small Area Health Insurance Estimates by the U.S. Census Bureau, published August 2009

Study Kick-off Attendance and Concerns Spreadsheet Collin County Study December 2009.

The NSDUH Report: Substance Use Treatment among Uninsured Workers. Substance Abuse and Mental Health Services Administration, Office of Applied Studies, Rockville, Maryland; February 2010.

NTBHA Executive Director's Report, June 2009.

NTBHA Notification of Budget Driven Changes Within NorthSTAR Memo, date unknown, 2009.

NTBHA Strategic Plan, 2009-2010.

Texas Department of Health and Human Services Data Books, June 29, 2009:1-26, and April 2010.

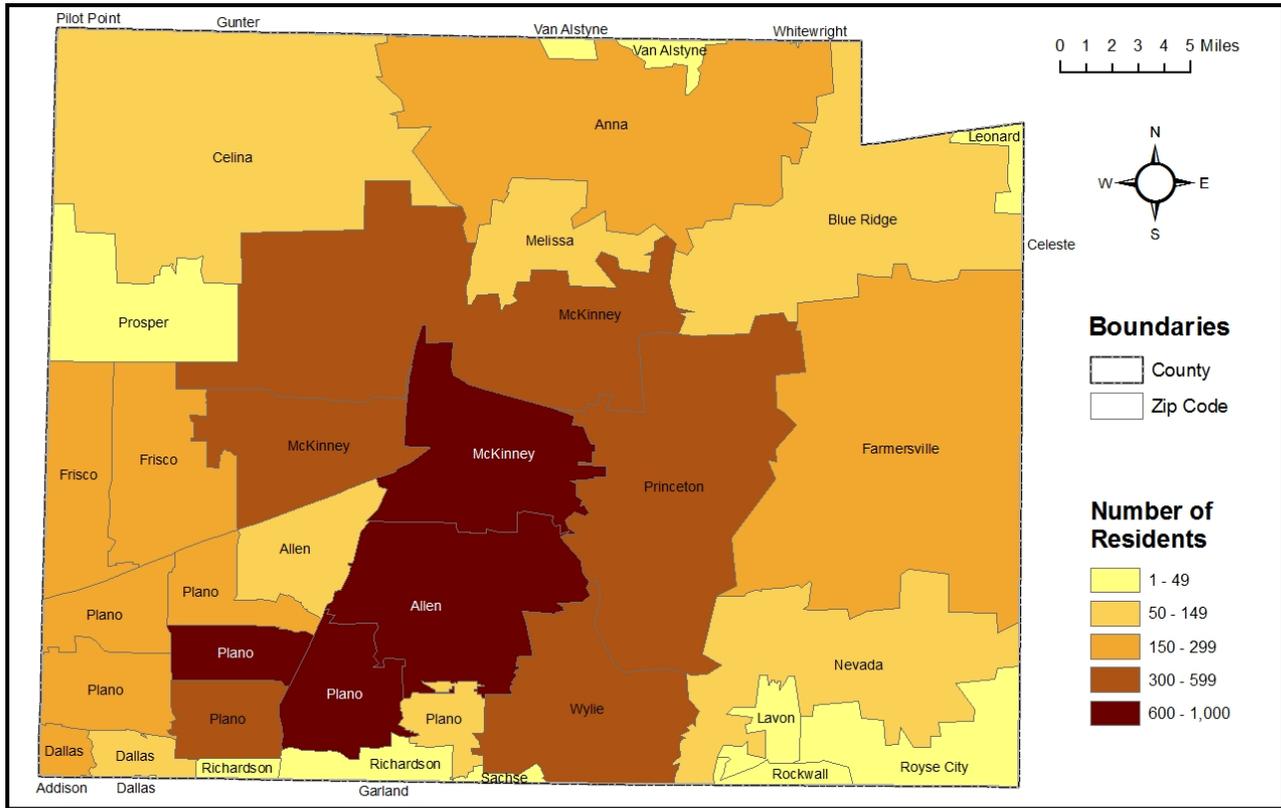
Texas Department of Health and Human Services NTBHA Budget, Fiscal Year 2008

Value Options NorthSTAR Member Information and Provider Directory, March 2010.

APPENDIX IV

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- ❖ Map 9 – 2008 Payments to Providers by Provider Zip Code for Community Based Services to Collin County Residents
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- ❖ Map 12 – Average Encounter Expenditure by Billing Zip Code All NorthSTAR Counties in All Study Years
- ❖ Map 13 – Number of Community Based Services Encounters Collin County Residents by Billing Zip Code All Study Years
- ❖ Map 14 – Average Prescription Drug Expenditure by Billing Zip Code All NorthSTAR Counties in All Study Years

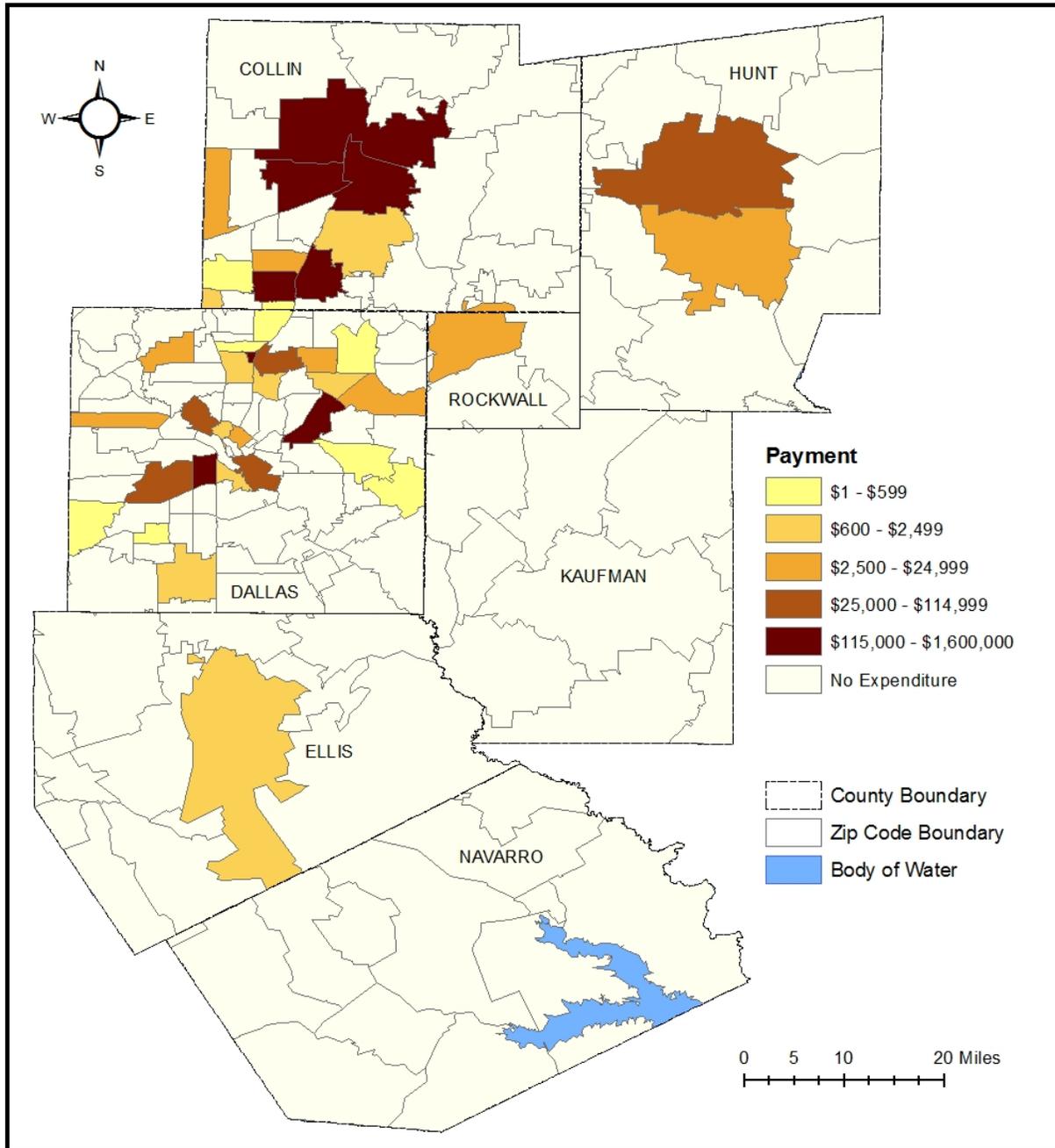
Map 8 Collin County Residents Receiving Services by Billing Zip Code All Study Years



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on encounter data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

Map 9

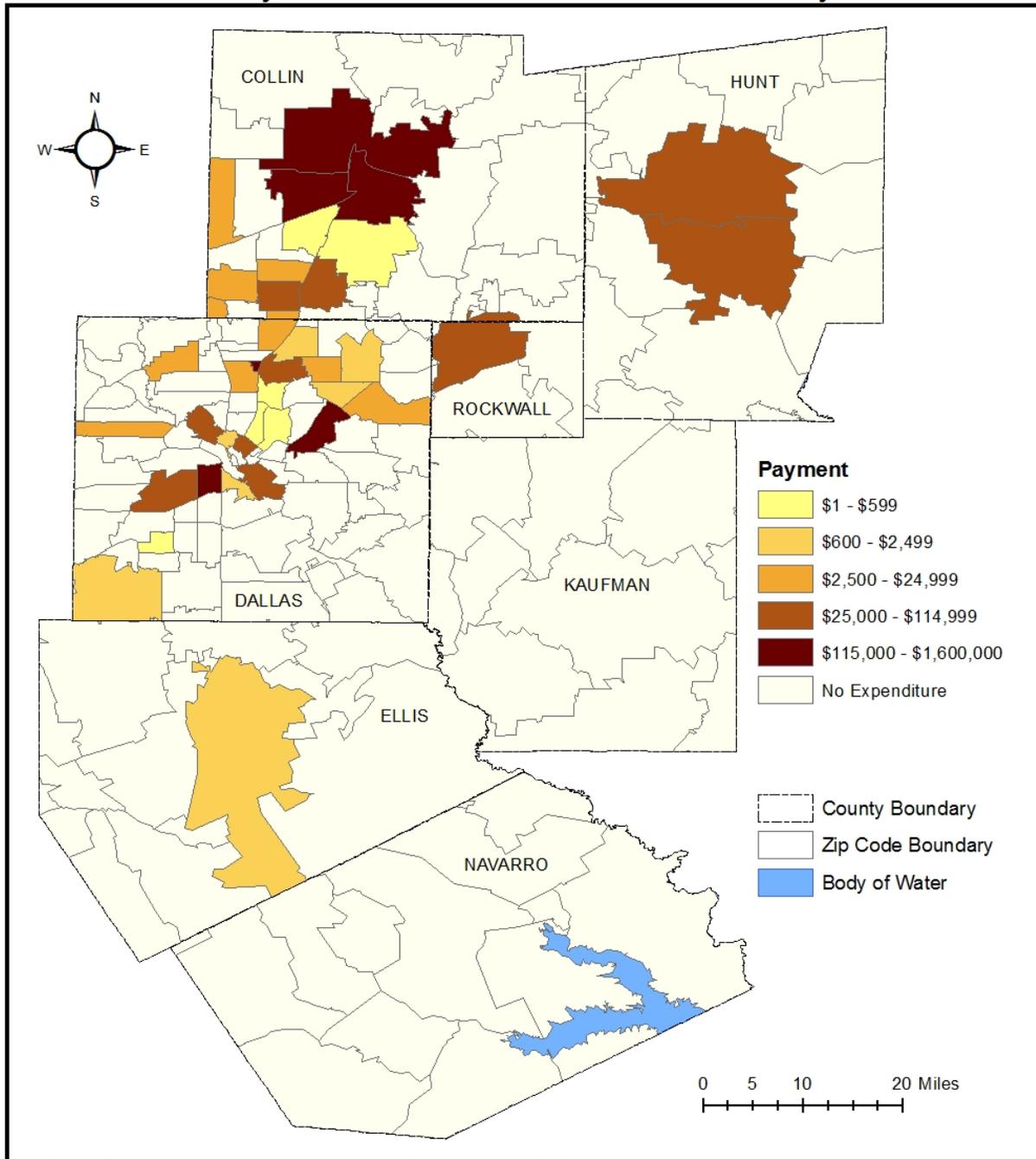
2008 Payments to Providers by Provider Zip Code for Community Based Services to Collin County Residents



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on expenditures data from The Texas Department of State Health Services, and provider zip code information obtained from the Value Options NorthSTAR Member Information and Provider Directory published March 1, 2010. 2007 ESRI shapefiles provided by the Collin County GIS Department.

Map 10

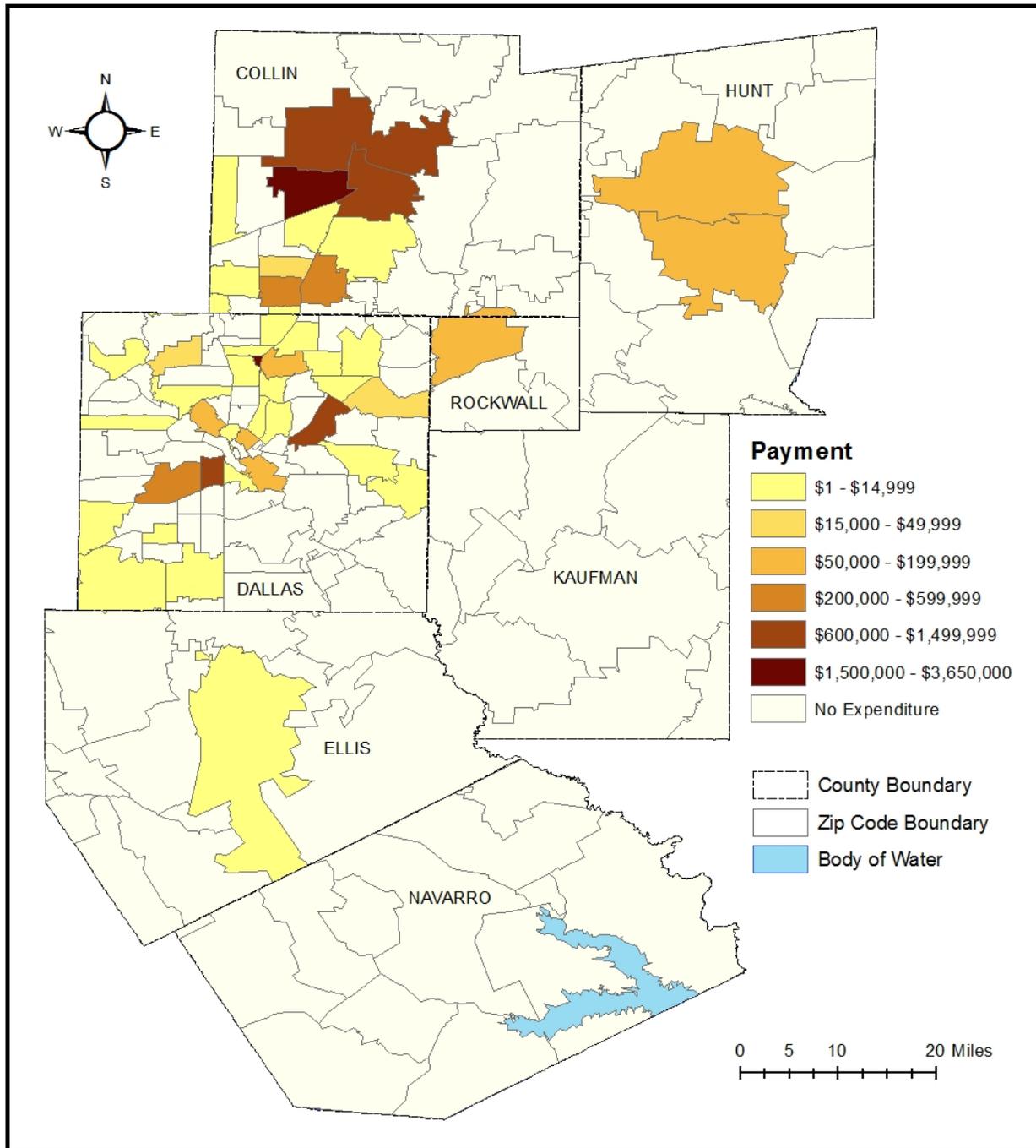
2007 Payments to Providers by Provider Zip Code for Community Based Services to Collin County Residents



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on expenditures data from the Texas Department of State Health Services, and provider zip code information obtained from the Value Options NorthSTAR Member Information and Provider Directory published March 1, 2010. 2007 ESRI shapefiles provided by the Collin County GIS Department.

Map 11

All Study Years Payments to Providers by Provider Zip Code for Community Based Services to Collin County Residents

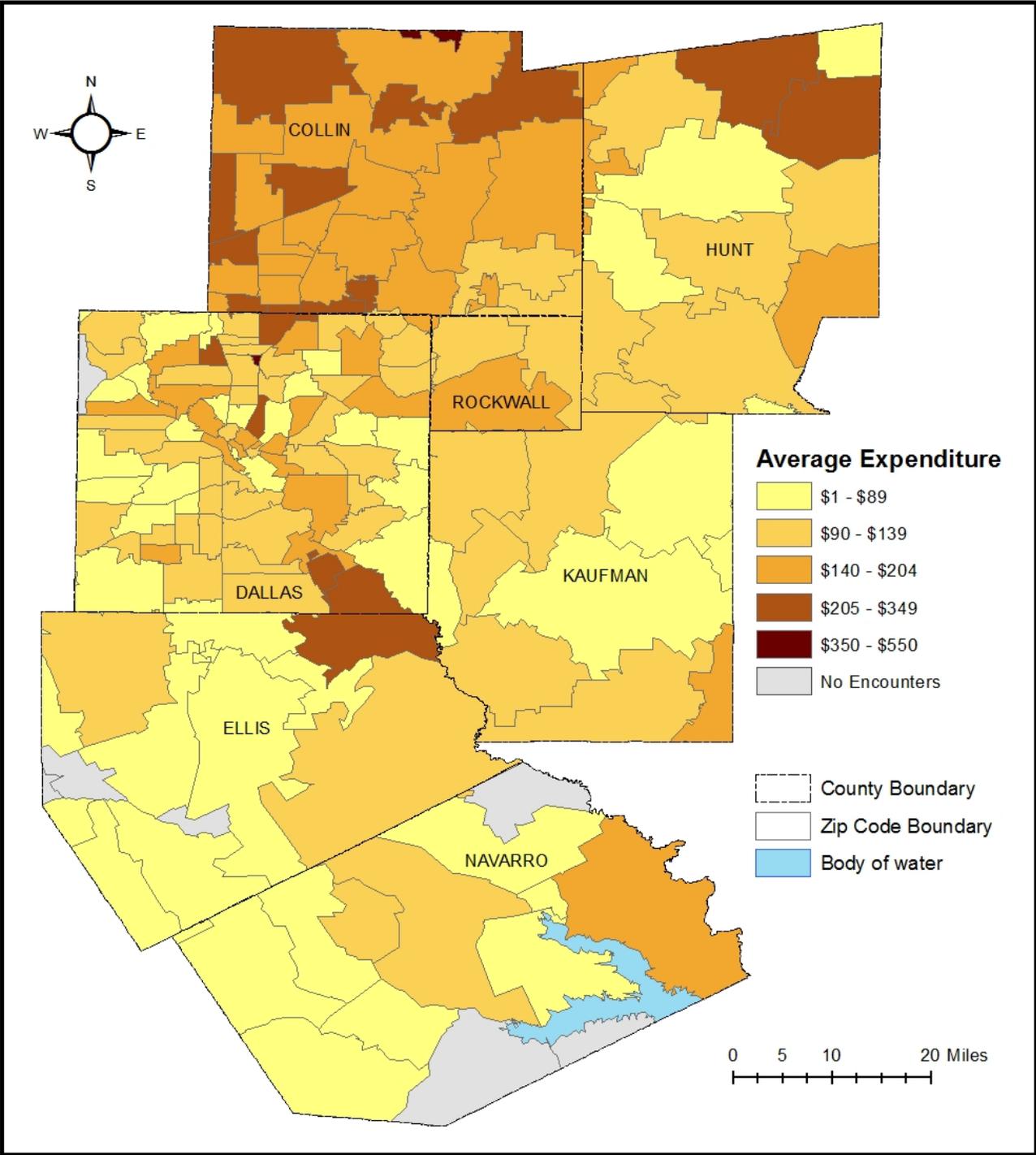


Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on expenditures data from the Texas Department of State Health Services, and provider zip code information obtained from the Value Options NorthSTAR Member Information and Provider Directory published March 1, 2010. 2007 ESRI shapefiles provided by the Collin County GIS Department.

Map 12

Average Encounter Expenditure by Billing Zip Code

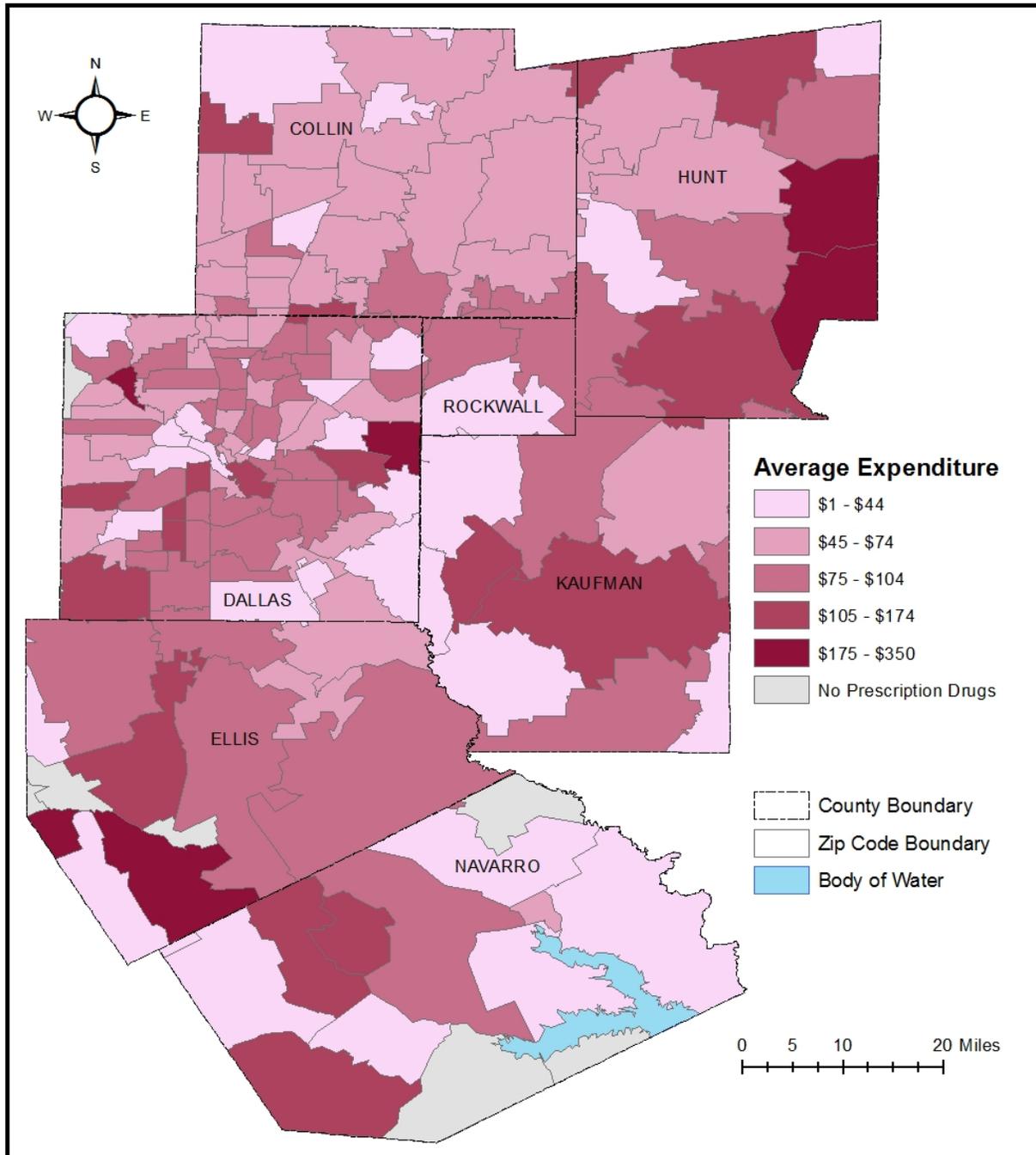
All NorthSTAR Counties in All Study Years



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on encounter data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.

Map 14

Average Prescription Drug Expenditure by Billing Zip Code All NorthSTAR Counties in All Study Years



Map created April 22, 2010 by the Mental Sciences Institute at UNTHSC. Map based on prescription medication data from the Texas Department of State Health Services, using 2007 ESRI shapefiles provided by the Collin County GIS Department.



House bars earmarks to for-profits

By MATT KELLEY and FREDREKA SCHOUTEN | Last Updated: March 11, 2010

Hit by recent ethics scandals, House Democratic leaders Wednesday barred the long-standing practice that allows members to direct federal spending to specific private companies.

The move marks a dramatic shift in policy. The practice has been denounced by watchdogs groups, such as Taxpayers for Common Sense, as ripe for corruption. The new rule comes after a damaging ethics report linking campaign donations to the special projects, known as earmarks.

Lawmakers directed about 1,000 earmarks worth \$1.7 billion to companies this budget year, said Ellis Brachman, a spokesman for House Appropriations Committee Chairman Dave Obey, D-Wis. That's about 10 percent of the \$16 billion in all earmarks, most of which went to non-profits and government agencies.

How much the new rule will reduce such spending is unclear. The Senate so far has refused to go along. Sen. Daniel Inouye, D-Hawaii, who chairs the Senate Appropriations Committee, said in a statement: "It does not make sense to discriminate against for-profit organizations."

House Speaker Nancy Pelosi, who pledged to tighten ethics rules when her party took control in 2007, said the new rule shows Democrats are "continuing to uphold our pledge to bring honesty back to government."

Ethics problems have bombarded House Democrats recently, including a report on an investigation into earmarks sought by clients of a now-defunct lobbying firm. Independent investigators found "probable cause" that Rep. Pete Visclosky, D-Ind., sought donations "in a manner which gave the appearance the contributions were linked to an official act." The ethics committee cleared Visclosky and six others after determining there was no link between donations and earmarks.

Brachman and Pelosi's spokesman, Brendan Daly, declined to say whether House Democrats would refuse to support earmarks added by senators. "We hope the Senate will join us," Brachman said.

Steve Ellis of Taxpayers for Common Sense said: "If the Senate doesn't play ball, there are still going to be a lot of for-profit earmarks."

House Republican Leader John Boehner of Ohio said he will ask GOP members today to adopt a moratorium on all earmarks. "If we do, I think the Democrats would have to follow," said earmark opponent Rep. Jeff Flake, R-Ariz.

Sen. Jim DeMint, R-S.C., is pressing for a Senate ban on earmarks to show "we're serious about changing Washington."

Matt Kelley and Fredreka Schouten report for USA Today.

Core Study Team

University of North Texas Health Science Center

des Anges Crusier, PhD, MPA, Associate Professor, Social and Behavioral Health and Medical Education School of Public Health and Texas College of Osteopathic Medicine (TCOM)

Executive Director, Mental Sciences Institute

Dr. Crusier's doctorate is in family studies and organizational behavior from Oklahoma State University and her master's is in public health care administration from the University of Arkansas. She has served as a commissioned officer in the United States Navy and served in the following capacities since 1975: Deputy Commissioner for the Department of Mental Health and Substance Abuse Services in Arkansas; Deputy Commissioner for the Department of Mental Health and Substance Abuse Services in Oklahoma; Superintendent/CEO of Griffin Memorial Hospital, Norman, Oklahoma; Assistant Deputy Director for Adult Services, Forensic Services, Harris County Mental Health and Mental Retardation Authority, Houston, Texas; Director for Mental Health Services Managed Correctional Health Care, Texas Tech University Health Science Center, Lubbock, Texas. She currently conducts behavioral science research and teaches in Fort Worth.

Sarah K. Brown, DrPH, Assistant Professor, Clinical Research and Behavioral Health

Department of Psychiatry & Behavioral Health, TCOM

Director of Clinical Research and Biostatistics, Mental Sciences Institute

Dr. Brown received her masters and doctorate in public health from the UNTHSC School of Public Health. Recent projects include data management, analysis, and manuscript preparation for studies related to Tarrant County emergency psychiatric services utilization, correlates of perinatal depression, and a research education project to improve research competencies of medical students. She currently serves as the biostatistician and teaches in the Mental Sciences Institute and Department of Psychiatry and Behavioral Health at UNTHSC.

Alan L. Podawiltz, DO, MS, FAPA, Chair and Assistant Professor

Department of Psychiatry & Behavioral Health, TCOM

Dr. Podawiltz received his doctorate degree in osteopathic medicine at Oklahoma State University College of Osteopathic Medicine, and his masters in adult education from the University of Oregon. He has served in the United States Army in the European theater, and has served in the following capacities since 1975: Graduate Advisor and Director of scholarly training at the University of Oregon; Director of Training and Continuing Medical Education at the Oklahoma Department of Mental Health and Substance Abuse Services; Psychiatry Residency Training Director for Texas Tech University Health Science Center Department of Psychiatry; Psychiatry Residency Training Director for John Peter Smith Hospital Department of Psychiatry; Acting Dean of the College of Osteopathic Medicine at UNTHSC. He currently directs the clinical services in psychiatry at both UNTHSC and JPS Health Network, and chairs the statewide Joint Admissions Medical Program (JAMP).

Jessica R. Ingram, MPH, Research Instructor, Behavioral Health, Department of Psychiatry & Behavioral Health, TCOM

Assistant Director for Education, Mental Sciences Institute

Ms. Ingram received her masters in public health from the UNTHSC School of Public Health. Recent projects include data management, analysis, and report writing for the evaluation of the Crisis Stabilization Unit at Tarrant County's JPS Health Network, a performance evaluation tool for health professionals, and a research education project to improve research competencies of medical students. She currently manages web-based surveys, produces maps to geographically display data, and coordinates the research education activities of the Mental Sciences Institute.

Angie Treviño, MS, Research Instructor, Behavioral Health, Department of Psychiatry & Behavioral Health, TCOM

Research Projects Manager, Mental Sciences Institute

Ms. Treviño received her masters in biology from the University of Virginia and her bachelors in human biology from Texas Woman's University. She is a certified IRB professional and serves as the research compliance liaison and provides oversight and management of all research activities. She currently conducts behavioral science research and teaches in Fort Worth.

University of Texas Health Science Center

Pamela M. Diamond, PhD, Assistant Professor, Behavioral Sciences and Biostatistics

Center for Health Promotion and Prevention Research, School of Public Health

Dr. Diamond received her doctorate in Educational Psychology (Quantitative Methods) from the University of Texas at Austin and her master's degree in Psychology from Texas Women's University. She has served in the following capacities since 1987: Research Associate in the Department of Educational Psychology at the LBJ School of Public Affairs at the University of Texas; Evaluation Research Fellow and Social Science Research Associate for the Hogg Foundation for Mental Health at the University of Texas; Adjunct Faculty in the LBJ School of Public Affairs at the University of Texas; Assistant Professor in the Department of Neuropsychiatry and Behavioral Science and Director of Program Evaluation and Outcome Studies for the Correctional Mental Health Services Division at Texas Tech University Health Science Center; Assistant Professor in the College of Criminal Justice at Sam Houston State University. She is currently an Assistant Professor in Behavioral Sciences at The University of Texas – Houston School of Public Health.

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