Vanderbilt University Hospitals and Clinics

Community Health Needs Assessment

April 2013

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INTRODUCTION

Vanderbilt University Hospitals
Community Health Needs Assessment

Vanderbilt University Medical Center Hospitals

- Vanderbilt University Hospital (Adult)
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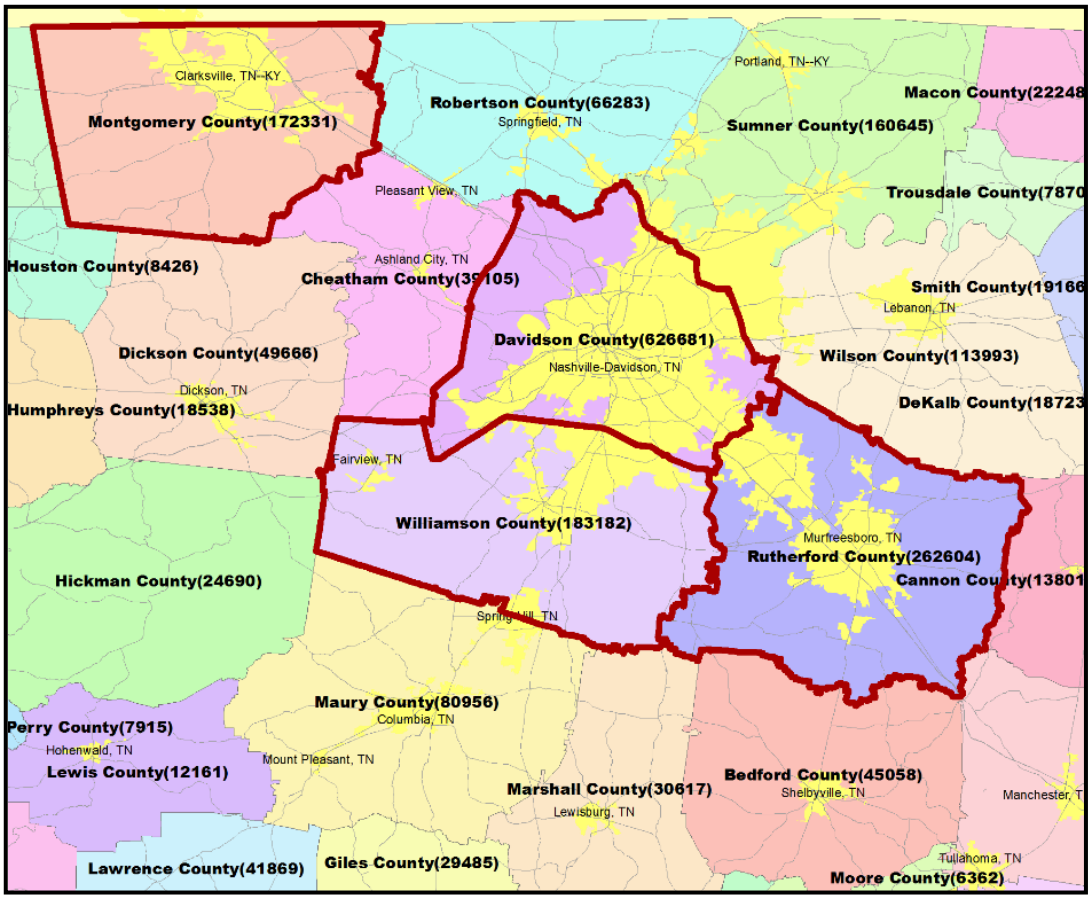
The Vanderbilt University Medical Center (VUMC), located in Nashville, Tennessee serves Tennessee, northern Alabama and southern Kentucky. Three hospitals comprise the Vanderbilt Hospital system: The Vanderbilt University Hospital (adult care), the Monroe Carell Jr. Children's Hospital at Vanderbilt and the Vanderbilt Psychiatric Hospital. Annually, the Vanderbilt University Hospitals have approximately 57,000 discharges. VUMC also provides 1.7 million outpatient visits, including 110,000 to the emergency departments of the three hospitals. Vanderbilt University Hospitals provide critical and often unique health care resources to the community and provide broad access to care. In 2012, Vanderbilt University Medical Center provided $477.4 million in uncompensated care through its hospitals and clinics.

Table 1. Hospital Patient Discharge by County

	Davidson	Montgomery	Rutherford	Williamson
Adult Hospital	28.45%	4.50%	5.05%	4.67%
Children's Hospital	36.93%	5.71%	6.63%	5.53%
Psychiatric Hospital	41.05%	4.88%	6.02%	7.45%

The majority of Vanderbilt's patients live in four counties in Tennessee: Davidson, Williamson, Rutherford and Montgomery, and these four counties are the focus of this assessment. Collectively, these four counties are home to 1,269,575 Tennesseans, who live in communities that are racially, ethnically, socioeconomically and geographically diverse. The area includes the cities of Nashville (Davidson County), Clarksville (Montgomery County), Murfreesboro and Smyrna (Rutherford County) and Brentwood, Franklin, Fairview and Spring Hill (Williamson County). (Figure 1)

Figure 1. Davidson, Montgomery, Rutherford, and Williamson Counties



Community Health Care Resources

The Vanderbilt University Hospitals' service area overall has a large number of healthcare facilities and providers, although resources are concentrated in Davidson County. The primary care provider rate at 99.9 providers per 100,000 populations for the region is higher than the national rate of 84.7, but the outlying counties have a much lower rate at 42.36 in Montgomery County and 44.93 in Rutherford County.

Davidson County is home to 16 hospitals with a total of 2,826 acute care beds. It is also the site of a regional VA medical center. Community based primary and specialty care includes 92 medical group practices, 24 freestanding ambulatory centers and 16 diagnostic and testing centers. Low-income and uninsured patients are served by 15 community health centers and 2 public health clinics. Non hospital based surgery resources includes 34 freestanding outpatient surgery centers and 17 physician office based surgery practices. Services for the elderly, homebound and disabled include 21 home health agencies and 25 nursing homes.

Montgomery County's health services are concentrated in Clarksville, the county's only city. The county has one hospital which has 261 acute care beds. There are 3 medical group practices, one community health center and one public health clinic. Montgomery County has a total of 7 community based outpatient surgery centers, 6 home health agencies and 4 nursing homes.

Rutherford County, which includes the cities of Murfreesboro and Smyrna, has 2 not-for-profit hospitals with a total of 345 acute care beds, and one VA hospital facility. Community based care includes 2 medical group practices, 5 freestanding ambulatory centers, 7 diagnostic and testing centers, and 9 outpatient surgery centers. Indigent care is available from 2 community health centers and 2 public health clinics. The county is served by 10 home health agencies and 9 nursing homes.

A detailed list of the health care facilities in Davidson, Montgomery, Rutherford and Williamson County is provided in Appendix D.

In Williamson County, which includes the cities of Brentwood, Franklin, Spring Hill and Fairview, there is one hospital with 185 acute care beds. The county has 17 medical group practices, 4 ambulatory centers. There are 4 diagnostic and testing centers and 12 outpatient surgery centers. Indigent care is available from 2 community health centers and 2 public health clinics. The county has 5 nursing homes and 5 home health agencies.

VUMC's mission is to advance health and wellness through patient care, education and research. The hospitals actively engage the communities they serve through outreach, education, intervention and prevention programs. These community engagement activities are broad in scope; they include running a free clinic that serves more than 1,300 uninsured patients annually, conducting bone density screenings for senior citizens in community settings, and creating a parent-to-parent intervention that targets economically disadvantaged and geographically and/or socially isolated families with children from birth to age 3.

As part of the 2010 Patient Protection and Affordable Care Act, non-profit hospitals such as ours are required to complete a community needs assessment every three years. In alignment with that commitment, the Vanderbilt Institute for Medicine and Public Health conducted a Community Health Needs Assessment that included the analysis of a wealth of publicly available data on health and health outcomes, a survey of more than 2000 individuals in the Vanderbilt service area, and a series of focus groups with community leaders and citizens regarding perceived health and healthcare needs in our community. Williamson County has the cities of Brentwood and Franklin, Rutherford County has the cities of Smyrna and Murfreesboro, and Montgomery County has the city of Clarksville.

METHODOLOGY

Secondary Data Analysis

To describe the socio-economic and health status of our service area population, we drew from authoritative secondary data sources, including the US Census Bureau, Centers for Disease Control and Prevention, KIDS COUNT, and others (for a complete list, see Appendix A). Some of the data were compiled by the Healthy Communities Institute for this needs assessment; others were accessed directly. When possible, secondary data are compared by county to state and national averages and to Healthy People 2020 goals. Healthy People 2020 goals are 10-year, science-based goals intended as benchmarks for improving the health of all Americans. These goals were drafted by multiple Federal Agencies, made available for public comment and are reviewed by a Federal Interagency Workgroup.

Survey Methodology

Using a combination of online and paper surveys as well as focus groups in all four counties, we actively sought the views of health care consumers (insured and uninsured, English and Spanish speakers) and community leaders to identify gaps in services and health priorities in their communities. The survey was completed by 2,303 people. Detailed methodology for the survey is described in Appendix B.

The survey consisted of the following sections:

1. Consent to participate
2. Tell us who you are
3. Insurance, health care, and wellness
4. Your children's health
5. Community resources
6. Open ended questions on health

Focus Group Methodology

Fourteen focus groups were conducted across the four counties (Davidson, Montgomery, Rutherford and Williamson) in Middle Tennessee. In each county there was a focus group with community leaders from various sectors (including education, government, healthcare, faith-based organizations, and business). In Davidson, Montgomery and Rutherford Counties, focus groups were also held with insured and uninsured community members separately as these groups face different issues when accessing health care services. To obtain a better picture of the barriers faced by residents of the rural areas of Middle Tennessee, a focus group was separately convened for the urban setting (Franklin) and another for those residing in the rural area (Fairview) of Williamson County. Finally, a Spanish-speaking focus group was conducted in each of Davidson and Montgomery counties.

RESULTS

Secondary Data

Socio-demographic Description of the Population

The Vanderbilt University Medical Center and its three hospitals serve a large geographic area that includes Middle Tennessee, southern Kentucky and northern Alabama. However, four counties – Davidson, Montgomery, Rutherford and Williamson – represent over 50% of Vanderbilt Hospitals' discharges, and therefore serve as the basis for this Community Health Needs Assessment. There are an estimated 1,269,575 people in this four-county area, and about half live in Nashville/Davidson County. Overall, the four counties comprise 17% of the state's population. The geographic area we serve is an urban-rural mix, with Davidson County representing the most urban at 96% and Williamson the least at 70%. Public transportation is limited throughout the region.

There are significant disparities in the quality of life and economic opportunities for residents in the Vanderbilt University Hospitals service area, depending on demographic, social and socioeconomic characteristics. While Nashville and Middle Tennessee are generally ranked highly as a good place to live, the number of people whose health is negatively affected by low levels of income and education has been increasing during the past three years.

The counties served by Vanderbilt have a younger age profile than Tennessee and the U.S. overall. The proportion of people over the age of 65 is 13.10% in the U.S., and 13.5% in Tennessee, but all four of our targeted counties have substantially lower proportions of aging individuals, with only Davidson County having more than 10% in that age group. Conversely, all four of the counties have a higher proportion of young children under the age of 5, relative to both the rest of Tennessee and the United States. Three of the four counties (Montgomery, Rutherford and Williamson) have higher proportions of individuals under the age of 20 than either the rest of Tennessee or the United States. This relatively younger population is associated with a health profile that is characterized by lower rates of health insurance coverage, lower rates of educational attainment, and decreased access to health care and preventive health services.

The population served by the Vanderbilt University Hospitals has somewhat more racial/ethnic diversity than the state overall. Davidson County is the most diverse of the four counties, with Blacks making up nearly 28% of the population, and Hispanic residents representing nearly 10%.

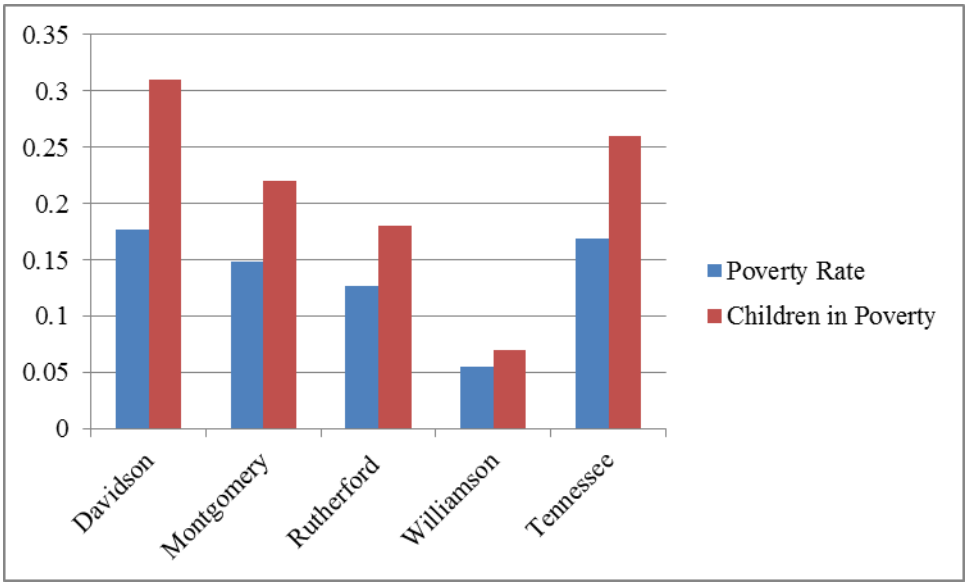
There is a large and growing immigrant community in our service area. Relative to Tennessee as whole, which reports foreign-born at 4.5%, Davidson County includes almost 12% foreign born, close to the national average. The most frequent countries of origin for foreign-born residents of Davidson County are Mexico and Central America, followed by Asia (Vietnam, Laos, and Cambodia) and Africa (Nigeria, Egypt, Ethiopia and Somalia). Notably, Davidson County is also home to the largest Kurdish population in the United States. The other counties have a smaller percentage of foreign-born residents (Montgomery 5.1%, Williamson 6.1% and Rutherford

6.6%), the majority being Spanish-speaking. A study conducted by the Nashville Latino Health Coalition in 2008 in Davidson County found that 80% of Hispanics surveyed did not have any health insurance, and paid for health care out of pocket [1].

Owing to the proximity of Ft. Campbell Army Base, Montgomery County is home to a sizeable number of veterans (13.6% of the county's total population) as well as families of active duty service men and women. The influx of recently discharged veterans from the Iraq and Afghanistan wars has corresponded to an increased burden on mental health and social service providers, particularly in Clarksville, the county seat and largest city in Montgomery County.

The rate of persons living in poverty (Figure 2) varies from a high of 17.7% in Davidson County, to a low of 5.5% in Williamson County, but has increased in all four counties in the past four years. This increase is reflected in the growing demand for assistance with basic needs, particularly housing, utilities and food (as tracked by calls to United Way 2-1-1). The proportion of children living in poverty in Davidson County, at 31%, exceeds the state average of 26% and the national average of 22%.

Figure 2. Poverty Rates in Vanderbilt's Service Area



Source: 2007-2011 American Community Survey, U.S. Census Bureau

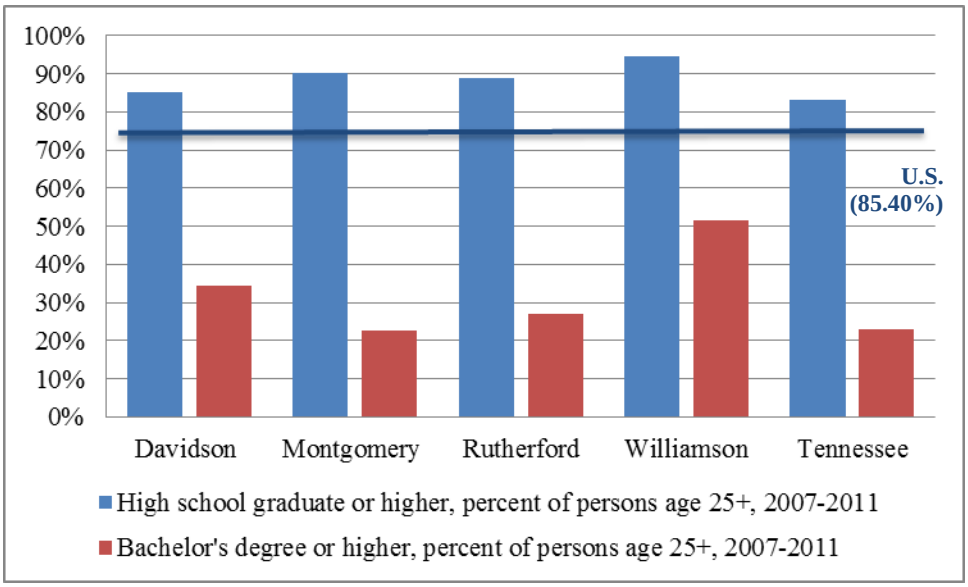
A telling indicator of economic distress is the number of children in public schools who are eligible for free and reduced cost meals. In Davidson County, 73% of all public school children meet this requirement, compared with 39.8% in Montgomery County, 38.2% in Rutherford County, 11.9% in Williamson County and 47% for the state of Tennessee overall.

In Davidson County, poverty is concentrated in the urban core, though inner-city gentrification over the past decade has resulted in an increase in the number of low-income, mainly black

families, moving to suburban ring communities where health and social services are more difficult to access.

Our adult population is relatively well-educated, with each county approximating or exceeding the national average for individuals over age 25 with a high school diploma or bachelor's degree. Our youngest residents, however, are struggling, especially in Davidson County, from which Vanderbilt University Medical Center derives nearly half of its patient population. In Davidson County, the 2012 high school graduation rate was only 78.4%, and fewer than half of third through eighth graders in public schools are proficient in either reading or math [2].

Figure 3. Education in Vanderbilt's Service Area



Source: 2007-2011 American Community Survey, U.S. Census Bureau

The rate of unemployment in our service area ranges from 4.45% in Williamson county to 7.10% in Montgomery County and the proportion of people living below the poverty level ranges from a low of 5.5% in Williamson County to a high of 17.7% in Davidson County. A significant proportion of our population (13.95%) lives in areas considered to be food deserts (as designated by the USDA), with the highest proportion (20.01%) in Davidson County, and the lowest (0%) in Williamson County. The national proportion is 9.10%.

Health Care Access

Of the four counties from which our patients are primarily drawn, only Davidson County has not met the Healthy People 2020 target of 83.9% reporting that they have a usual source of care. The proportion of adults in Davidson County with a usual source of care is 78.2, relative to 84.4 in the Mid-Cumberland region that includes the other three counties. The primary care provider rate for the region is 99.9 providers per 100,000 population, which is high when compared to the

national rate of 84.70. However, both Montgomery and Rutherford counties report much lower rates at 42.36 and 44.93, respectively.

Adults in the Vanderbilt University Medical Center service area are often underinsured, with only Williamson Country meeting Healthy People 2020 targets for having health insurance. Davidson County has the lowest proportion of insured residents, with 77.3% currently insured. In Davidson County, 84.5%of White, non-Hispanic adults report having insurance compared to 77.6% of Blacks and 31.5% of Hispanic adults.

The Healthy People 2020 target for insured children is 100%. Currently, the proportions of insured children in our service area are approximately 93.1% in Davidson County, 93.8% in Rutherford County, 95.7% in Montgomery County and 96.1% in Williamson County. In Davidson County, 77.5% of Hispanic children are insured, relative to 96.2% of White, non-Hispanic children.

Younger people make up a higher proportion of TennCare (Medicaid) enrollees in our service area, with all four counties higher than the national rate, though lower than the Tennessee rate. In our area, 51.63% of Medicaid enrollees are children, 38.41% are adults and 9.97% are elderly. This is compared to national rates in which 49.99% of Medicaid enrollees are children, 37.94% are adults and 12.07% are elderly. The elderly population in our target counties makes up a smaller proportion of Medicaid enrollees than it does at the state or national levels.

The proportion of children in Tennessee who receive their health insurance through TennCare is 42.5% overall, with substantial disparity by county. In Davidson County, the proportion is 42.3%, compared to 24.2% in Montgomery County, 26.3% in Rutherford County and 9.5% in Williamson County.

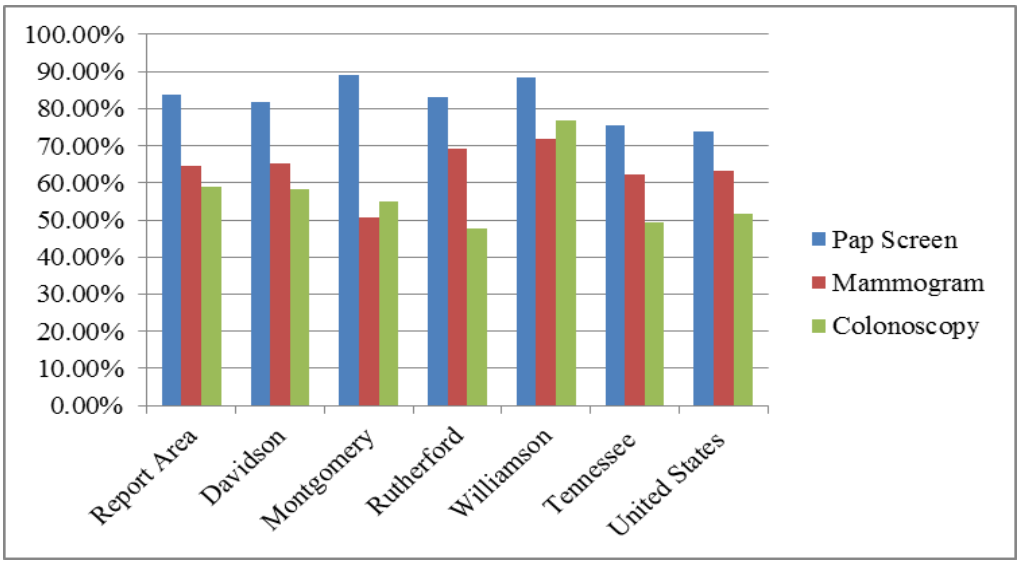
Overall, 17.88% of the adults in our service are lack a consistent source of primary care, relative to 19.32% in the United States overall and 16.5% in Tennessee.

Preventive Care

Less than half of the adult population reported receiving a flu vaccination in the past year. Davidson County reported a 42.7% flu vaccination rate, and the Mid-Cumberland region as a whole reported 40.9%. Among adults ages 65 and older, 66.1% of Tennesseans reported having received a “pneumonia shot or pneumococcal vaccine.” The rates in Davidson County and in the Mid-Cumberland region are higher than that state average at 67.4%and 69.7%, respectively.

Figure 4 shows the preventive screening rates for cervical, breast and colon cancer by county and compared to Tennessee and the United States. The proportion of female Medicare enrollees age 55 or older who have had a mammogram in the past two years is 64.5%, relative to a national rate of 63.3%. The rate for colonoscopy among male enrollees aged 50 or older is 58.9% relative to a national rate of 51.79%. Our service area reports higher rates of pap testing for cervical cancer than the national rate as well.

Figure 4. Preventive Screening Rates

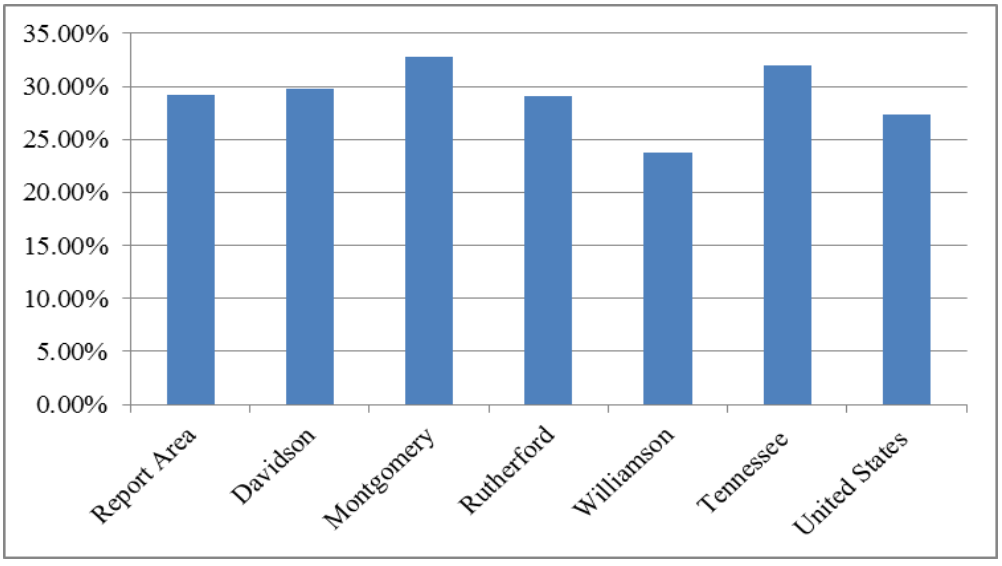


Source: Mammogram: Dartmouth Atlas of Healthcare, Selected Measures of Primary Care Access and Quality, 2003-2007; Pap Screen and Colonoscopy: The Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2004-2010.

Obesity

Tennessee as a state has high rates of obesity, with all four of our service counties reflecting higher rates than the national average. Over a third of adults in Tennessee are obese, and that number is reflected in our service area as well, with a rate of 29.21%. Montgomery County has the highest rate of obesity in our area, with a rate of 32.8%.

Figure 5. Obesity Rates



Source: Centers for Disease Control and Prevention, National Diabetes Surveillance System, 2009.

Cancer

Table 2 shows the number of cases of the most common types of cancer that occur per 100,000 individuals by county, compared to how often they occur across the United States.

Table 2. Cancer Rates

	Davidson	Montgomery	Rutherford	Williamson	U.S.
All Cancer	477.7	444.2	445.9	463.8	NR
Breast	126.3	111.1	109.9	133.6	122.0
Cervical	7.4	9.0	7.2	5.2	8.0
Colorectal	46.5	46.0	42.2	41.6	40.2
Lung/ Bronchus	79.3	80.7	74	61.6	67.2
Prostate	156.5	125.1	146.9	157.1	151.4

Source: The Centers for Disease Control and Prevention and the National Cancer Institute: State Cancer Profiles, 2005-2009.

The Healthy People 2020 goal for all cancer deaths is 160.6 per 100,000 in the population. Cancer deaths are high in our region - none of our service counties has achieved that target, although as a relative measure, both Williamson and Rutherford counties have rates lower than half of the counties across the country.

Table 3. Cancer Death Rates

	Overall*		Breast		Prostate		Lung	
	Deaths	**Target**	**Deaths**	**Target**	**Deaths**	**Target**	**Deaths**	**Target**
Davidson	193.5	160.6	24.4	20.6	26.9	21.2	62.6	45.5
Montgomery	205.4		20.0		26.7		70.3	
Rutherford	179.6		22.3		17.8		59.4	
Williamson	163.8		19.7		22.5		45.5	

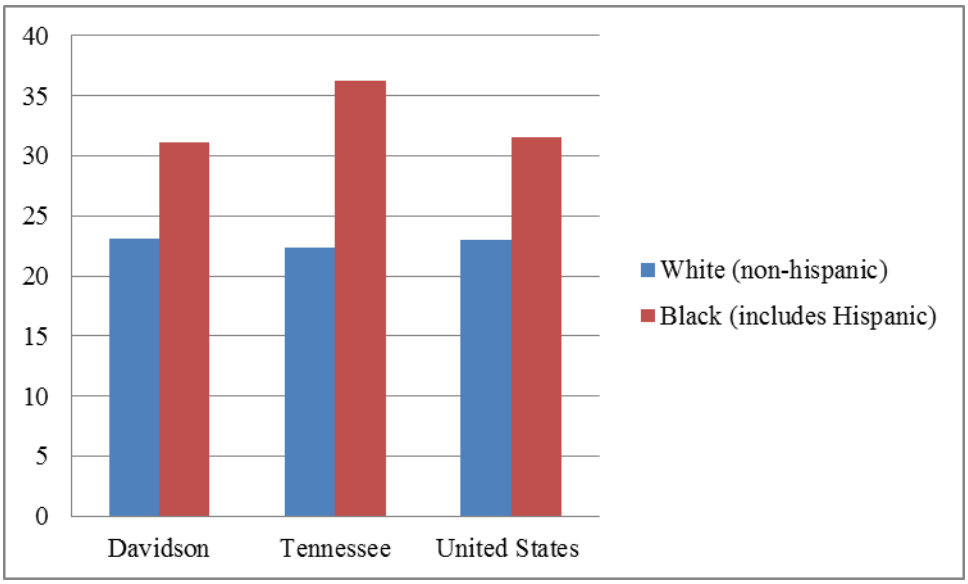
*per 100,000 of the target population (e.g. females for breast cancer)
Source: The Centers for Disease Control and Prevention and the National Cancer Institute: State Cancer Profiles, 2005-2009.

Breast Cancer

Breast cancer incidence in our service area matches that of the United States at 122 per 100,000 population.

The Healthy People 2020 target for age-adjusted breast cancer deaths is 20.6 per 100,000 females. Although all four of our service counties are in the lower 50th percentile (have better rates) relative to other US counties for this goal, both Davidson County and Rutherford County have death rates exceeding the goal at 24.4 and 22.3, respectively. As is the case nationally, the rates in Tennessee reflect substantial racial disparity. For example, the rate for black women in Davidson County is 31.1 per 100,000 relative to 22.5 per 100,000 for white women.

Figure 6. Age-Adjusted Death Rate Due to Breast Cancer

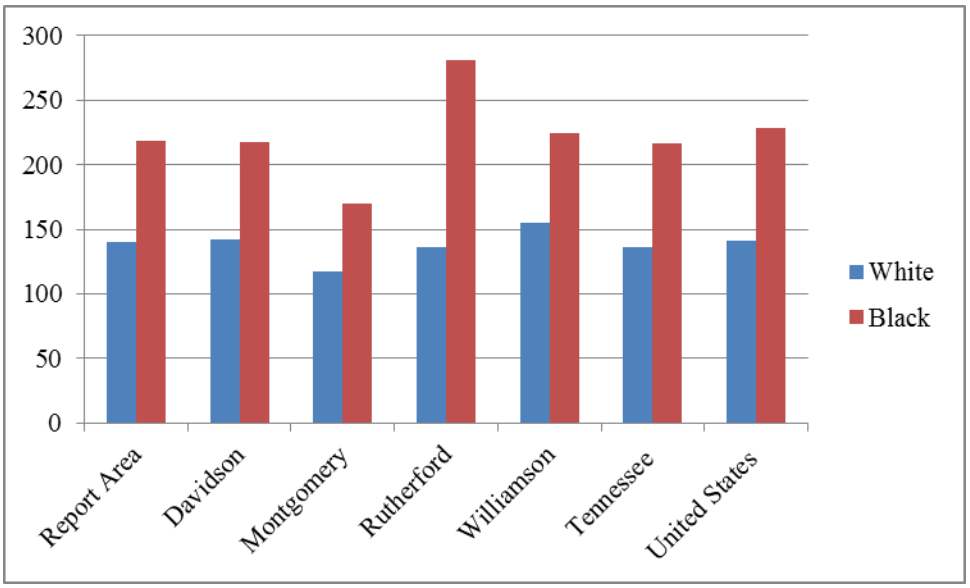


Source: The Centers for Disease Control and Prevention, and the National Cancer Institute: State Cancer Profiles, 2005-2009.

Prostate Cancer

In comparison to the national estimates of prostate cancer incidence overall (151.40 per 100,000 population), rates are higher in Davidson and Williamson counties (156.50 and 157.10 respectively) but lower in Montgomery and Rutherford counties (125.10 and 146.90, respectively). Prostate cancer incidence and mortality in our population reflects racial disparities that are seen nationally. Prostate cancer deaths exceed the Healthy People 2020 goals in three of our four counties

Figure 7. Prostate Cancer Incidence Rate



Source: The Centers for Disease Control and Prevention, and the National Cancer Institute: State Cancer Profiles, 2005-2009.

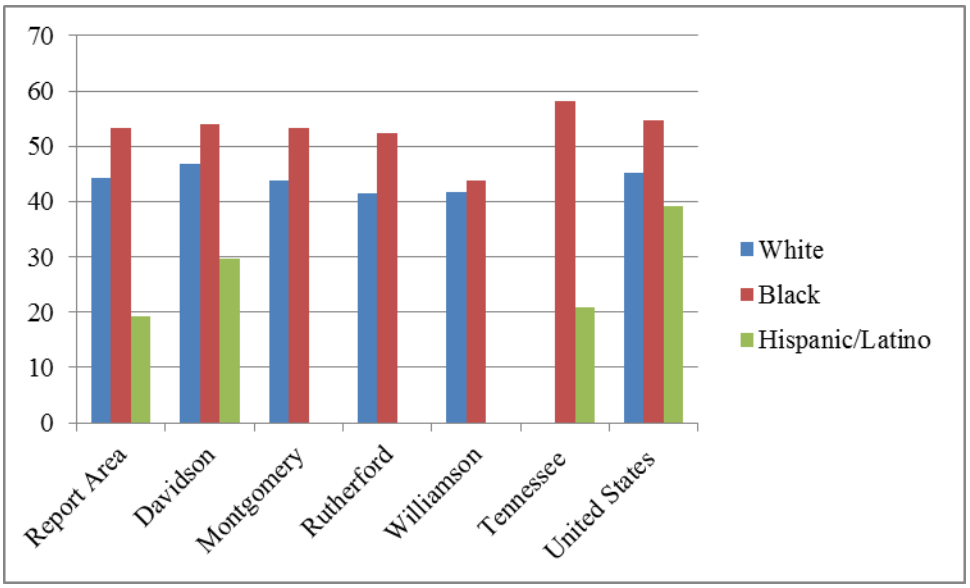
Cervical Cancer

The Healthy People 2020 target for cervical cancer incidence is 7.1 per 100,000 population. Tennessee as a state has a rate of 8.7, and our service area overall has a rate of 7.2, ranging from 5.2 in Williamson County to 9.0 in Montgomery County. Racially specific data are available only for Davidson County, which reports a rate for white women of 6.8, relative to a rate of 9.3 among black women.

Colorectal Cancer

The Healthy People 2020 target for colorectal cancer incidence is 38.6 per 100,000 population and the current rate in the United States is 40.2. All four of the counties in our service area have rates exceeding the national average and the target.

Figure 8. Colorectal Incidence Rate



Source: The Centers for Disease Control and Prevention, and the National Cancer Institute: State Cancer Profiles, 2005-2009.

Chronic Disease

The population in Vanderbilt's service area is at substantial risk for chronic diseases, due in part to lifestyle and environmental factors that result in physical inactivity, poor dietary practices, and high rates of overweight and obesity. The rate of physical inactivity in this population is 26% compared to a national rate of 24.66%. More than 70% of the population reports low fruit and vegetable consumption and almost 20% are smokers. The highest rate of smoking is reported in Montgomery County, where almost one-third of adults report being current smokers. This is likely linked to the presence of Fort Campbell Army base in the county and the high rate of smoking among active duty and recently discharged service men and women. In contrast, heavy alcohol consumption is less prevalent in our population (11.5% of the adult population) compared to the United States (16.61%).

Heart Disease and Stroke

Overall, 15.96% of hypertensive adults 18 and older report that they are not taking their high blood pressure medication, relative to a national proportion of 21.74% and a statewide proportion of 17.08%. Despite higher adherence rates to medical management than is seen nationally, Healthy People 2020 goals for deaths due to stroke and heart disease are unmet.

Table 4. Heart Disease and Stroke

	Davidson	Montgomery	Rutherford	Williamson	HP 2020
Deaths Due to Stroke*	46.3	62.6	49.9	51.8	33.8
Deaths Due to Heart Disease*	169.46	158.72	164.14	119.59	100.8
High Blood Pressure**	29.6%	34.2%			26.9%
High Cholesterol**	30.1%	33.2%			13.5%

Source: *2009 Tennessee Department of Health; **2010 Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System

Diabetes

Approximately 10% of adults in our service area (85,265 individuals) have diabetes, although the age adjusted death rate due to diabetes varies by county. Nationally, 8.77% of adults have diabetes.

Table 5. Diabetes Prevalence

	Adults with DM (%)		Death Rate Due to DM*	
County	**Percent**	**Tennessee**	**Rate**	**Tennessee**
Davidson	9.5	10.52	28.9	26.35
Montgomery	12.4		28.3	
Rutherford	10.6		22.3	
Williamson	8.2		14.3	

*Death Rate is deaths per 100,000 population
Source: Adults with DM: The Centers for Disease Control and Prevention: National Diabetes Surveillance System, 2009. Death Rate Due to DM: 2009 Tennessee Department of Health

According to the American Diabetes Association, diabetes patients should have a hemoglobin A1c test at least twice a year to ensure that their blood sugar is being controlled [3]. A higher proportion of diabetic Medicare patients in our service area have had a hemoglobin A1c (hA1c) test in the past year than is seen nationally. Nonetheless, testing rates are lower in Davidson and Montgomery Counties than the state average.

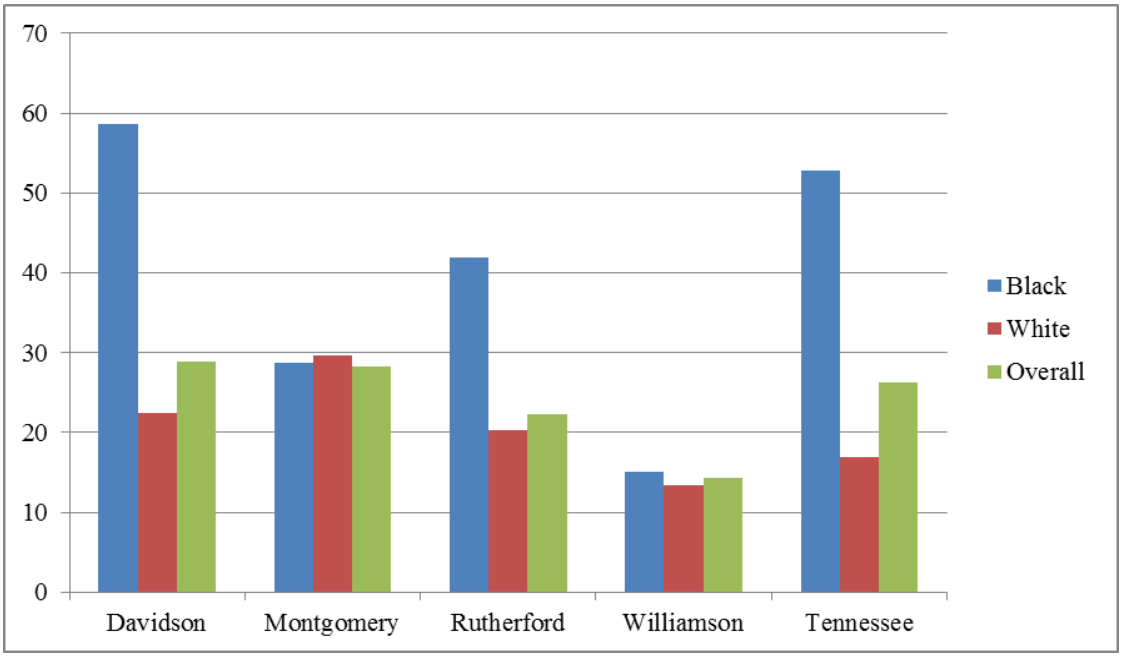
Table 6. Hemoglobin A1C Test

Report Area	Total Medicare Enrollees (Age 65-75) with Diabetes	Number Patients Tested	Percent Patients Tested
Report Area	7,726	6,414	83.02%
Davidson	4,069	3,372	82.87%
Montgomery	1,200	919	76.58%
Rutherford	1,536	1,327	86.39%
Williamson	921	796	86.43%
Tennessee	67,430	55,905	82.91%
United States	5,408,188	4,343,573	80.31%

Source: Dartmouth Atlas of Healthcare, Selected Measures of Primary Care Access and Quality, 2003-2007.

Diabetes has a particularly significant impact on the Black community in Tennessee, with death rates among blacks much higher than among whites.

Figure 9. Age-adjusted Diabetes Death Rate by Race



*"Other" racial categories too small for stable estimates
Source: 2009 Tennessee Department of Health

Children's Health

As noted, the service population of Vanderbilt trends toward a younger population than the rest of Tennessee or the United States and a substantial proportion live in poverty. In Davidson County, nearly a third of children (28%) live under 100% of the Federal Poverty Level (FPL).

Table 7. Poverty Prevalence in Children

	Total Population (For Whom Poverty Status is Determined)	Children in Poverty	Percent Children in Poverty
Report Area	292,427	59,740	20.43%
Davidson	132,174	37,003	28%
Montgomery	45,006	9,065	20.14%
Rutherford	64,547	10,479	16.23%
Williamson	50,700	3,193	6.30%
Tennessee	1,461,089	342,513	23.44%
United States	72,850,296	13,980,497	19.19%

Source: U.S. Census Bureau, 2006-2010 American Community Survey 5-Year Estimates.

Obesity

Relative to the United States as a whole, which has a childhood obesity rate of 14.9%, rates are higher in Davidson County (16.6%) and Montgomery County (17.1%), but lower in Rutherford County (14.5%) and Williamson County (14.9%).

Pregnancy Outcomes

In 2011, 79,462 babies were born in Tennessee, with 18,303 in our service area. Of those, 4,300 births took place at Vanderbilt University Hospitals. Approximately 38% of births at Vanderbilt were covered by Medicaid (TennCare).

Table 8. Pregnancy Outcomes

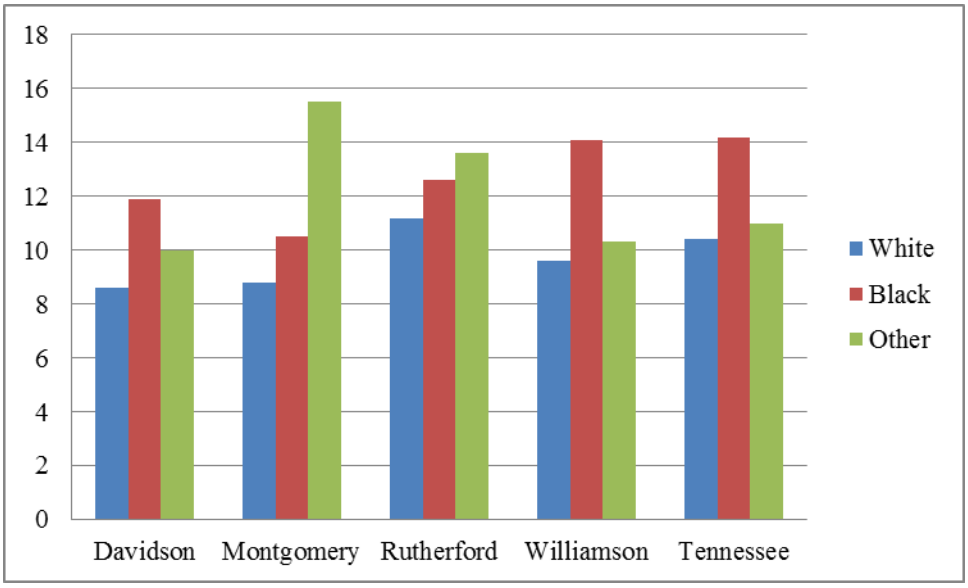
	Davidson	Montgomery	Rutherford	Williamson	HP Target	State	U.S.
Total Births, 2011*	9,601	3,042	3,648	2,012	NA	79,462	3,953,593
Low Birth Weight (%), 2011*	8.7%	8.3%	7.8%	5.7%	7.8%	9.0%	8.10%
Very Low Birth Weight (%), 2011*	1.6%	1.4%	1.2%	.7%	1.4%	1.5%	1.44 %
Preterm Births (%), 2009**	9.7	9.5	11.5	9.9	11.4	11.2	12.18

**Source: (County and State) 2011 Tennessee Department of Health & (US) 2011 National Vital Statistics Report- Births: Preliminary Data for 2011 **Source: (County and State) 2009: Tennessee Department of Health & (US) 2009 National Vital Statistics Reports- Births: Final Data for 2009*

Preterm Birth

The Healthy People 2020 goal for preterm birth is 11.4% of live births, and although three of our service counties have achieved this goal overall, there are substantial racial disparities. County data show a consistently higher rate of preterm birth among black infants relative to white infants, and no county meets the Healthy People 2020 goals in the black population. Rates are reported to be high among women reporting "other" as their race, but the numbers are not high enough to calculate statistics for those groups.

Figure 10. Preterm Births by Race/Ethnicity



Source: 2009 Tennessee Department of Health

Infant Mortality

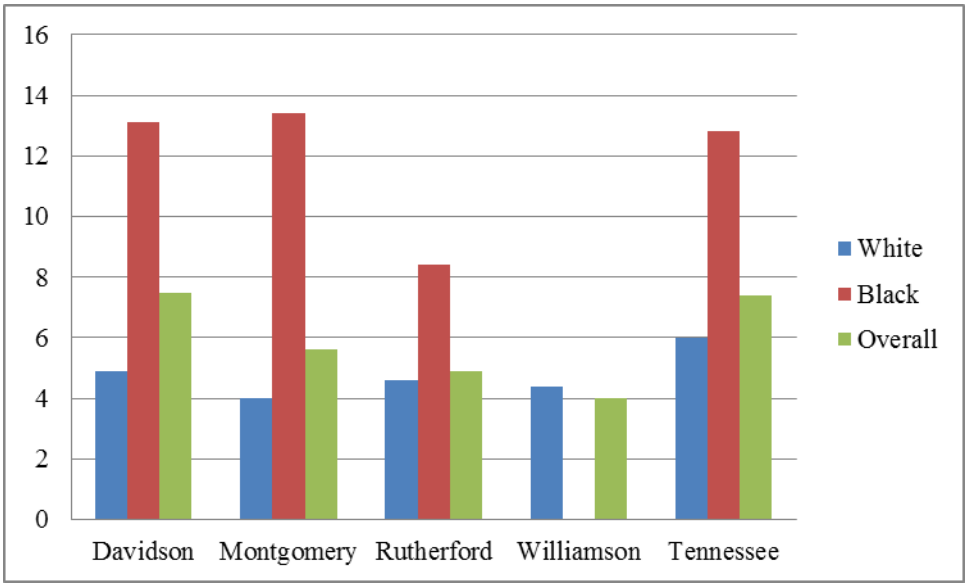
The infant mortality rate in Tennessee has been dropping steadily due to a concerted effort at state and local levels, although substantial racial disparities persist.

Table 9. Infant Mortality

Report Area	Total Births	Total Infant Deaths	Infant Mortality Rate (per 1000 births)
Report Area	125,940	865	6.87
Davidson	67,175	524	7.80
Montgomery	19,105	152	7.96
Rutherford	25,307	148	5.85
Williamson	14,353	41	2.86
Tennessee	570,116	4,946	8.54
United States	58,600,996	393,074	6.71
HP 2020 Target	NA	NA	<=6.0

Source: The Centers for Disease Control and Prevention, National Vital Statistics System, 2003-2009

Figure 11. Racial Disparities in Infant Mortality Rate (deaths/1,000 live births)



**The number of black women in Williamson County are too small to calculate
Source: 2011 Tennessee Department of Health

Infectious Disease

The prevalence rate of HIV per 100,000 population is high in our service area, and particularly in Davidson County.

Table 10. HIV Prevalence

	Total Population*	Estimated Population with HIV**	HIV Prevalence Rate**
Report Area	1,180,663	5,016	424.8
Davidson	621,465	4,303	692.5
Montgomery	153,491	239	155.8
Rutherford	240,181	339	141.3
Williamson	165,526	135	82.1
Tennessee	6,158,953	17,429	283
United States	297,679,913	994,491	334

*Data Source: * 2005-2009 American Community Survey, U.S. Census Bureau; **The Centers for Disease Control and Prevention and the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, 2008.*

The current Healthy People 2020 target for deaths associated with HIV is 3.3 per 100,000 population. The Davidson County rate is more than twice that, at 7.1 per100,000, although the

other three counties are below the target. Other reportable infectious diseases also have high rates in the Vanderbilt service area.

Table 11. Incidence of Infectious Diseases per 100,000 Population

	Davidson	Montgomery	Rutherford	Williamson	US*
Chlamydia	638.7	756.4	426.9	109.8	457.6
Gonorrhea	195.6	133.1	72.1	14.8	104.2
Tuberculosis	6.0	2.3	1.1	0.0	3.4

*Source: 2011 Tennessee Department of Health, *2011 The Centers for Disease Control and Prevention accessed through the NCHHSTP Atlas*

Mental Health

According to the National Institute of Mental Health, mental health disorders are the leading cause of disability in the US, accounting for 25% of all years of life lost to disability and premature mortality. In the 2012 Grassroots Community Survey conducted by Metro Social Services in Davidson County, mental health and substance abuse treatment was identified as the fourth greatest need in the health category. The Kaiser State Health Facts data reports that 23.9% of adults in Tennessee are in "poor mental health," and more than one-fifth of adults have a mental illness. Of those, 5% have a mental illness considered to be serious. Rates for adults with any serious mental illness are presented below in Tables 12 and 13.

Table 12. Population over the Age of 18 with Any Mental Illness in the Past Year

Location	Number	Percent
Davidson	109,040	22.24%
Montgomery	27,790	22.39%
Rutherford	43,412	22.39%
Williamson	29,007	22.39%
Tennessee	1,074,326	22.15%
United States		19.7%

Source: 2012 Tennessee Department of Mental and Substance Abuse Services

Table 13. Population over the Age of 18 with Serious Mental Illness in the Past Year

Location	Number	Percent
Davidson	22,259	4.54%
Montgomery	6,429	5.18%
Rutherford	10,044	5.18%
Williamson	6,711	5.18%
Tennessee	250,831	5.18%
United States		4.6%

Source: 2012 Tennessee Department of Mental Health and Substance Abuse Services

In terms of more specific diagnoses, the Tennessee Mental Health Association reports that close to one-fifth (18.1%) the population suffers from some sort of anxiety disorder, including PTSD, OCD and panic disorder. Major depression affects 9.8% of Tennesseans and is the highest in the nation. Personality disorders affect 9.1%, bipolar 2.6% and schizophrenia 1.1%. Assuming an even distribution of cases and based on these estimates, we can estimate the numbers of individuals in each county likely to need care for these mental illnesses.

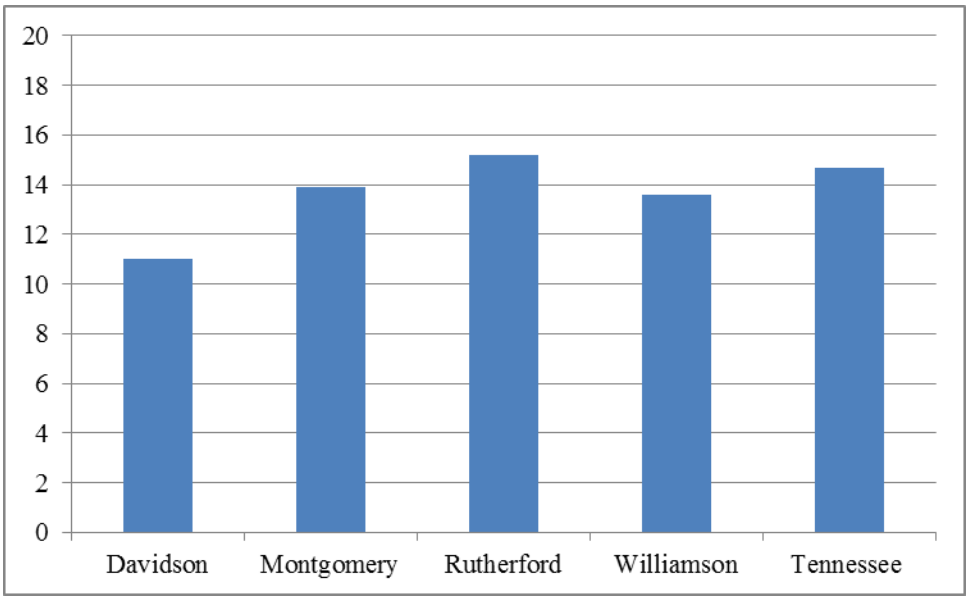
Table 14. Estimated numbers of individuals with mental illness

County	Anxiety Disorders	Major Depression	Personality Disorders	Bipolar	Schizophrenia
Davidson	115,064	62,300	57,850	16,528	6,993
Montgomery	29,137	15,776	14,649	4,185	1,771
Rutherford	46,526	25,191	23,391	6,683	2,828
Williamson	32,008	17,330	16,092	4,598	1,945

Source: Tennessee Mental Health Association

Suicide rates are highest in Rutherford County and lowest in Davidson County; all counties other than Rutherford report lower suicide rates than the State as a whole.

Figure 12. Rate of Deaths by Suicide, All Ages



Source: 2012 Tennessee Department of Mental Health and Substance Abuse Services

Our region has been particularly hard hit by prescription drug abuse among adults as well as adolescents. According to the Tennessee Department of Mental Health, Tennessee ranks among the 10 states with the highest number of opioid admissions, with the highest number of pregnant women listing prescription opioids as a primary substance of abuse. Among women treated for addiction, more than one-third cite opioids as a primary substance of abuse (Treatment Episode Data Set).

Nationally, 14 adult psychiatrists and 9.8 child psychiatrists are available per 100,000 population; in Tennessee the rates are 10 and 5.9, respectively.

The proportion of children with one or more emotional, behavioral or developmental conditions is about the same as the national rate (16% v 15%). (Kids Count 2007) The numbers of students per 1000 student population receiving special education ranges from 1.5 in Williamson County to 6.44 in Davidson County. The suicide rate for children ages 10 – 19 is 6.9 per 100,000 in Davidson County, 10.1 per 100,000 in the surrounding counties (Tennessee Department of Mental Health Region 5), and 4.4 in Tennessee as a whole.

Primary Data-Survey

A total of 2,303 people responded to the Vanderbilt Community Health Needs Assessment Survey. The survey was conducted in three waves. The first wave (n=913) used a company to email surveys to a sample that reflected the age, racial, and educational diversity of the four counties. The second wave (n=1165) used various Vanderbilt web sites and community listservs to reach additional residents of the service area. Because the first two waves resulted in a sample

that was more affluent than the region's average, a third wave (n=182) was conducted using paper surveys distributed at sites that serve low-income residents.

See Appendix C for the survey questions.

Demographic Description of the Sample

More females than males completed the survey. The use of the three sampling groups allowed us to obtain an even age distribution, with more respondents in the middle age groups than in the young or very old age categories. Overall, more respondents lived in Davidson County than the other three counties. Montgomery County has the smallest sample size, and in the Vanderbilt online sample there were a substantial number who lived in other counties besides Davidson, Montgomery, Rutherford, and Williamson. Almost 60% of the sample reported working in Davidson County followed by Williamson County at about 10%.

Blacks (19%) and whites (74%) were well represented in the sample, with a small number of Asians and American Indians, and a modest number of people who self-identified as Hispanic (3%). Higher numbers of blacks and Hispanics participated in the paper survey. The educational profile of our sample was high, with over 90% having some college, a bachelor's degree, or a post graduate degree. The incomes were relatively high also, with the majority of the sample reporting being employed full time. The largest percentage of the respondents reported working in the health care sector.

Insurance

Most survey respondents indicated that they had insurance coverage, with 93% having health insurance, 74% dental insurance, and 56% vision insurance. Employer-provided insurance was most common, followed by Medicare, and insurance directly purchased as an individual. The survey showed few disparities in insurance with the exception of the small sample of Hispanic respondents of whom 25% were uninsured.

Summary of Health Indicators

The survey identified a number of unmet health needs. These needs include going two or more years without a routine medical visit and missing routine preventive health procedures and screenings. Younger people, those with low incomes, and people without health insurance have reported more unmet health needs. Blacks were more likely than white respondents to report poorer perceived health, less recent access to health care, and fewer preventive procedures in the past year. Overall, the health of this sample was reasonably good, consistent with the high educational level of those who completed the survey.

Types of Health Services Utilized

Most health visits occur at doctors' offices. There was no difference between men and women, but 91% of whites use doctors' offices compared to 85% of Blacks, 70% of other/mixed race, and 67% of Hispanics. Women (3.0%) were slightly more likely than males (1.2%) to report using the emergency department for health services. Emergency department use by race/ethnicity

was 1.7% for whites, 4.4% for other/mixed, 5.5% for Blacks, and 6.5% for Hispanics. A small number of people reported using urgent care clinics (7.8%) with no differences by gender, race, or ethnicity.

Community clinics were used more often by women (4.8%) than men (2.6%). While there were no differences in seeing a dentist by sex, the rate was considerably higher for whites (54.5%), than blacks (38.4%), other/mixed (39.8%), and Hispanics (38.7%).

Barriers to Access

Very few survey respondents said they are never able to see a physician when they need to (1.7%), although this was more often a problem for other/mixed race and Hispanics. The most common barriers to access cited were not being able to afford care (43.2% occasionally or often) and not having time (48.3% occasionally or often). Just over one-third of respondents reported lack of transportation or being unable to get an appointment occasionally or often.

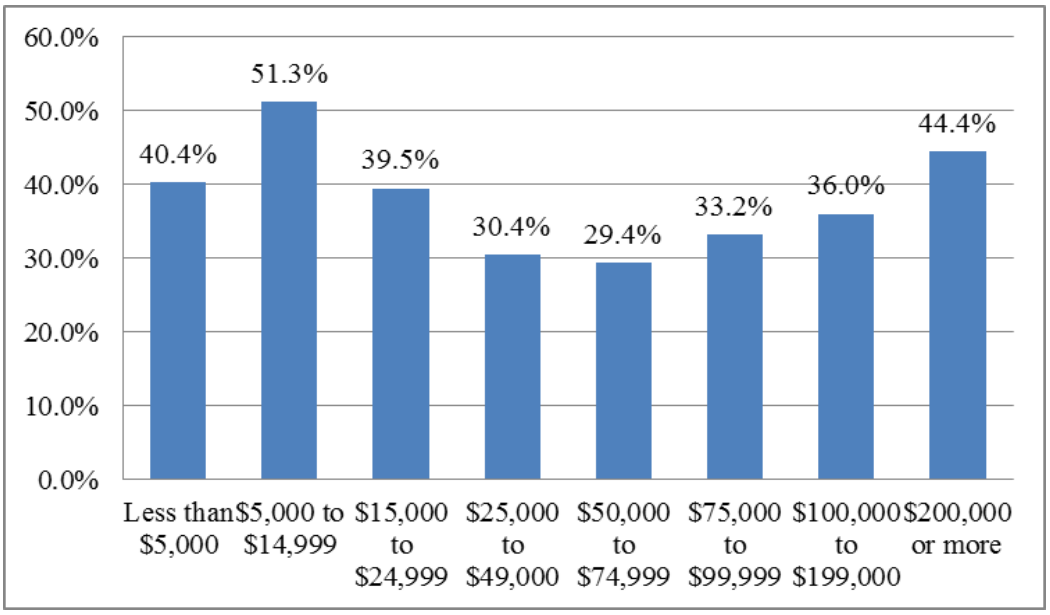
Healthy and Unhealthy Behaviors

Smoking rates in the survey were low, but there was very high interest in healthy lifestyle with 93% saying it is important or very important. Over half reported avoiding red meat at least weekly and consuming 5 or more servings of fruits and vegetables on at least a weekly basis. Moderate alcohol use was common (70% weekly or more) while 60% reported exercising once a week or more. Most (70%) reported handling stress well, and 60% reported engaging in weight management activities weekly or more often. Half reported getting less than 7-8 hours of sleep per night. About 60% reported taking prescription medication on a daily basis. Meditation and prayer were common behaviors seen as contributing to better health.

Children's Health

Those with children at home were most often in the 36-45, 26-35, and 46-55 age groups, respectively. Younger and older respondents were less likely to have children at home. Those with the lowest and the highest incomes were more likely to have children at home than those with middle incomes.

Figure 13. Percent with Children at Home by Income



Children's Insurance

Only a small number (n=12) of participants did not have health insurance for their children. Overall, 98% of children had health insurance, 82% dental insurance, and 64% vision insurance. Most had employer provided insurance (70%) with 19% having TennCare, 4% directly purchasing insurance, with the remainder unknown. Black and Hispanic parents were less likely to have vision insurance for their children than white parents. Black and Hispanic parents were less likely to have employer provided insurance for their children than white parents, and Black parents were more likely to have TennCare than white parents.

Child Health Care

Most parents reported that their children were in very good or excellent health. Access to care was good with 95% reporting a yearly routine doctor visit, and 91% reporting their children could see a doctor when needed. The barriers were lack of insurance, cost, inability to get an appointment, lack of transportation, and the doctor being too far away. However, none of the barriers was selected by more than 3% of parents. There were no major differences by gender, race, or ethnicity.

Health Behaviors and Children

Table 14 shows parental reports of their children's healthy behaviors. There were no notable differences by gender, race, or ethnicity and the data show need for improvement in children's health behaviors.

Table 14. Parental Reports of Children's Healthy Behaviors

		White	Black	Other	Hispanic	Total
Behavior	How often	%	%	%	%	%
5 servings fruits and vegetables	No	47.5%	30.6%	40.7%	45.5%	41.7%
	Yes	52.5%	69.4%	59.3%	54.5%	58.3%
7-8 hrs sleep	Never	0.6%	1.1%	1.2%	0.0%	0.8%
	Monthly	1.8%	2.6%	1.2%	0.0%	1.9%
	Weekly	11.8%	11.6%	7.1%	3.4%	11.3%
	Daily	85.8%	84.7%	90.5%	96.6%	86.0%
Exercise 20 min or more	Never	3.3%	4.3%	6.3%	3.4%	3.8%
	Monthly	6.4%	5.3%	3.8%	0.0%	5.8%
	Weekly	27.3%	26.7%	30.4%	34.5%	27.5%
	Daily	63.1%	63.6%	59.5%	62.1%	62.9%

Community Resources for Children

Most of the parents who responded to survey agreed or strongly agreed that key community health services were available to their children, including immunizations (89.1%), emergency care (89.4%), primary care (75.8%), specialized care (64%), adequate hospital care (74.1%), dental care (81.8%), and that primary care physicians could see children in a timely manner (79.7%). Fewer parents (51.5%) felt that mental health services were available in the community and over one-third of parents said they did not know if their community offered mental health services for children (Table 15).

Table 15. Access to Community Resources: Health Care

Resource	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
It is easy to get immunizations and vaccinations for children in my community.	1.7	2.5	6.8	31.3	57.8
Emergency care is available for children in my community.	2.8	3.1	4.7	33.9	55.5
There are enough primary care physicians who are willing to see children in my community.	3.8	6.2	14.2	30.3	45.5
There are enough specialized care physicians available for children in my community.	5.7	10.9	19.4	27.6	36.4
Hospitals adequately meet the needs of children.	4.0	7.9	14.0	36.3	37.8
Primary care physicians can see children in a timely manner.	3.6	8.7	8.0	42.2	37.5
Dental care is available for children in my community.	3.1	4.8	10.4	38.7	43.1
Mental health services are available for children in my community.	4.9	8.0	35.5	25.8	25.7

Parents were less confident about their community's resources to keep their children safe from risky behavior: Only half (50.7%) agreed or strongly agreed that their children were safe from neglect and abuse; 49.4% felt that the community protects children from bullying; 47.6% believe a good effort is being made to prevent drug and alcohol abuse; 59.4% said car seats are easily obtained; and only 33.7% agreed that the community was making a good effort to prevent risky sexual activity.

Table 16. Access to Community Resources: Safety and Risky Behavior

Resource	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
Children are safe from child neglect and abuse in my community.	5.2	15.0	29.1	29.6	21.1
The schools in my community protect children from bullying.	6.9	16.0	27.7	33.1	16.3
It is easy to get a car seat for a child in my community.	3.6	6.6	30.3	30.4	29.0
My community makes a good effort to prevent drug and alcohol use by children.	5.2	14.0	33.2	30.6	17.0
My community makes a good effort to help adolescents and teens avoid risky sexual activity.	8.0	16.4	41.9	21.9	11.8

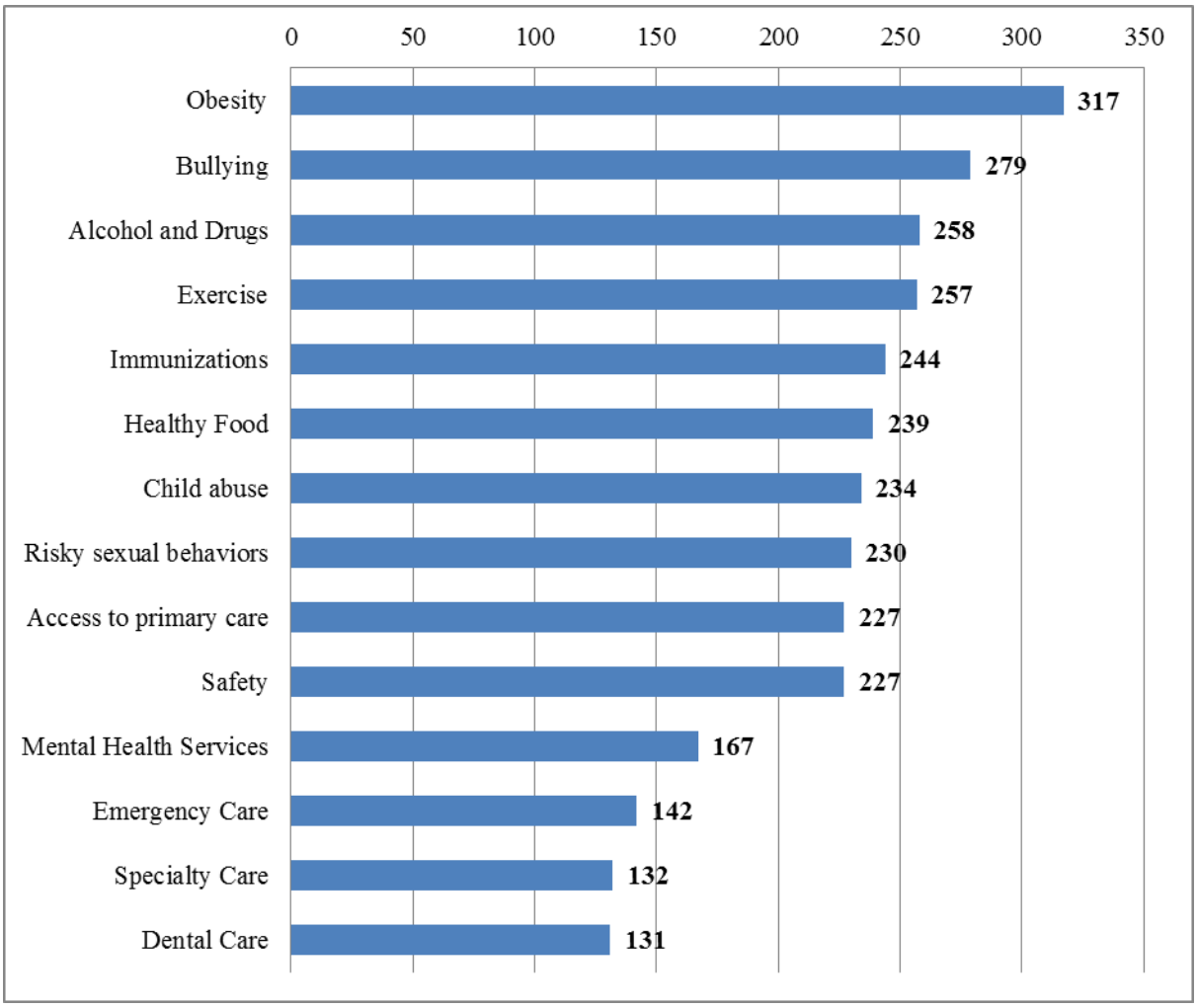
Parents were also less confident about the availability of community resources to prevent the development of chronic disease in their children. Only 43.8% said they agreed or strongly agreed their community did a good job to prevent childhood obesity and 55.4% felt there were enough fitness opportunities for children. Two thirds of parents (66.2%) felt that the children in their community had access to healthy foods.

Table 17. Access to Community Resources: Chronic Disease Prevention

Resource	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
My community makes a good effort to prevent childhood obesity.	7.5	19.9	28.9	30.6	13.2
There are enough fitness opportunities for children in my community.	6.9	19.9	17.9	35.1	20.3
The children in my community have access to healthy foods.	4.3	12.5	17.1	41.0	25.2

Parents with children at home (n=780) were asked to choose the three most important needs in the community and Figure 14 displays the number of times each need was chosen. Parents ranked child safety and child behavior as a greater concern than access to medical care or quality of medical care. Obesity in children was the number one concern, followed by bullying, alcohol and drugs, and exercise.

Figure 14. Community Priorities for Improving Child Health Reported by Respondents with Children Living at Home



Open Ended Questions

Four open-ended questions allowed survey respondents to name the biggest health needs in their community, suggest ways to reduce emergency department use, and tell how local hospitals can improve community health and individual health goals.

Health Needs in the Community

The health conditions listed most often as concerns were obesity and related issues, including difficulty accessing healthy food, the need for guidance on healthy behaviors and life-style related diseases such as diabetes and hypertension.

Many respondents noted immunizations as an important health issue.

Barriers to accessing health care were described in financial, geographical and logistical terms, including lack of insurance and money to pay for care, transportation, difficulty getting an

appointment and long wait times. Respondents outside of Davidson County were concerned about local access, particularly pediatric primary and specialty care.

Mental health concerns were raised many times in relation to both children and adults, and for both diagnostic and therapeutic services. Concerns included a desire for partial hospitalization programs, increased access to affordable care for children with developmental disabilities, and a need for substance use and abuse services for adolescents.

Reducing Emergency Room Use for Non-emergencies

The most common recommendation for decreasing inappropriate use of emergency departments was to have more urgent and primary care available.

Health of the Community

Survey respondents suggested that they would like to see community hospitals engaged in more community outreach and education, with a focus on healthy living, primary prevention, and appropriate use of the emergency department. Suggestions included health fairs and reduced cost health screening, improvements in continuity of care, access to more affordable services and increased collaboration with local organizations.

Personal or Family Health Goals

The health goals of survey respondents focused on lifestyle issues including healthy eating (e.g. access to healthy foods, cost, time to cook healthy meals, getting enough fruits and vegetables) and exercise (time, resources, and safe places). Respondents also wanted better access to dental care, and improvement in their mental health, especially with regard to stress and depression.

Primary Data- Focus Groups

Characteristics of the Sample

A total of 149 people participated in 14 focus groups. Most of the focus group participants were female and there was a fairly even distribution of age, with 86.5% of participants between 26 and 65 years of age. While the largest percentage of participants was married, 44% said they were either single or divorced. Four of the focus groups (one in each county) included local leaders from public health, government, schools, community service providers, and the faith community.

Blacks, whites and Hispanics were well represented in the focus groups, with a very small number of Asians. Two focus groups were conducted in Spanish, one each in Davidson and Montgomery counties. The Spanish speaking focus group participants were mainly from Mexico and Puerto Rico, with a handful of other Latin American countries represented.

Nearly 67 % of participants had some college, a college degree, or a post graduate/ professional degree. Slightly over 50% were employed full time, and over 26% were employed part time, unemployed or disabled/unable to work.

Summary of the Focus Groups

Participants were largely positive about the quality of care – particularly specialty care – available at Vanderbilt. Parents who participated in the groups saw the Children's Hospital and Vanderbilt Pediatric Clinics as important resources for their children.

Participants in the focus groups represented two distinct populations: those with health insurance, and those without.

Uninsured participants included homeless individuals, unemployed professionals, and single parents working multiple jobs. For these individuals, access to quality health care emerged as the dominant theme. They described many barriers to quality care including lack of reliable and affordable transportation (particularly for those living outside of Davidson County), not enough money to pay for care, being unable to take time off work, limited clinic hours, and overcrowding at clinics that serve the poor and uninsured.

The uninsured focus group participants acknowledged that the emergency department was not the appropriate place to go for basic medical care or to treat chronic health problems, but said they sometimes used the emergency department because their options for care were so limited. Some raised concerns about long wait times for care and the high costs that had significant impact on their personal finances. Several uninsured participants described the negative impact of having used emergency rooms on their credit history. When asked about alternatives, several suggested ambulatory care clinics with extended hours near emergency rooms that would offer acute care for non-emergencies. Accessing health care after hours or on the weekends was seen as a significant problem. For uninsured participants all four counties, preventive health care was very often delayed or skipped altogether.

Some participants said they could not afford the out of pocket expenses needed to see a specialist, therefore specialty diagnostic and treatments services (e.g., endocrinology, oncology, rheumatology) were out of their reach. For example, seeing a specialist may involve making substantial up-front payments and filling a prescription may turn out to be unaffordable. The participants felt that all these barriers result in delayed care, poor adherence to chronic disease management, and more serious medical problems when care is finally sought.

Individuals currently not accessing care because they lack insurance are well aware that health care reform is likely to increase their options and recognize their own need for both primary and specialty care.

The affordability of prescription medications was mentioned by consumers and community leaders as problematic for those with and without insurance. This is especially serious for those with multiple chronic health problems such as hypertension, heart disease, and diabetes. These individuals are often prescribed multiple medications that add up to hundreds of dollars a month.

Community leaders voiced concerns that services for the uninsured and underinsured are limited, especially outside of Davidson County. Transportation is a significant problem in rural areas,

especially for the elderly. They believed that improved collaboration and communication between local health departments, hospitals, safety net clinics, and advocacy groups was needed. They felt there is a lack of information, coordination and referral services for those who cannot afford inpatient and outpatient care.

Community leaders were also nearly unanimous is advocating the expansion of health insurance that is slated to occur under the Affordable Care Act. Several expressed concerns that the current health care systems, especially further from downtown Nashville, do not have the capacity to provide care to large numbers of new patients.

The more affluent focus group participants expressed a desire for increased focus by Vanderbilt on lifestyle issues, with substantial concern about obesity and diabetes. Those who can afford health care see unhealthy eating, lack of physical activity, unsafe neighborhoods, poor access to health food, the ubiquity of fast food, aggressive marketing of unhealthy foods, and long-standing cultural food patterns as contributing to an epidemic of obesity, diabetes, and cardiovascular disease. The view expressed by a number of participants was that the causes of these problems are strongly impacted by unhealthy environments and cannot be solely blamed on a lack of individual responsibility. Many recommended that Vanderbilt lead the way in addressing both the chronic disease outcomes, and the underlying causes that contribute to the obesity epidemic. There were calls for Vanderbilt to be more engaged in the surrounding communities and to become more proactive in its outreach, education, and prevention programs.

In the rural areas, focus group participants felt that pregnant woman and the elderly were particularly affected by lack of transportation, social isolation, and inability to navigate the medical system. They expressed concern about frequent unnecessary hospitalizations in the elderly and lack of prenatal care for pregnant teens.

The availability of mental health services outside the urban area of Nashville is inadequate according to both consumers and community leaders. Major mental health concerns include depression, stress, caregiver burnout, alcoholism, drug abuse, and serious mental illness such a bipolar disease and schizophrenia. Mental health services are either private and require adequate insurance, or open to the public and overloaded and unable to meet demand.

Key Focus Group Themes

Support for Healthy Behaviors/Lifestyle

Participants at all levels of income and education expressed a desire for Vanderbilt to become more active in supporting healthy lifestyle behaviors in the community and the workplace. Their suggestions included basic information available in a low-literacy format, routine and affordable diabetes education and support for lifestyle change that can be delivered at a relatively low cost. Focus group participants urged Vanderbilt to take a leadership role in addressing community health and in supporting behavior change.

Continuity of Care

Participants expressed a need for collaboration between local/community caregivers and hospitals and Vanderbilt, including more expeditious record sharing and data exchange, and improvements in referrals to local services and care. Community members need help in navigating between health systems and agencies, and in identifying care providers that meet their needs. Several mentioned the need for more case managers and community health outreach workers who can coordinate care and help in navigating the health system.

Mental Health

Depression and chronic stress are health concerns across the age and income spectra. Adults in the focus groups expressed significant concern about accessing diagnostic services for Autism Spectrum Disorder and ADHD for their young children, as well as substance abuse care for adolescents and young adults. Adults were particularly concerned about difficulty accessing treatment for severe and chronic mental illness, including bipolar and schizophrenia. Affordable outpatient care is especially lacking and needed in outlying communities.

Elder Care

Care coordination and a holistic approach to services are very important to elderly patients and their families/caregivers. Focus group participants noted the effects of social isolation and dementia on overall health and described a lack of care coordination, particularly in discharge planning. They also expressed some desire for attention to the caregiver needs, including support and education. These problems are magnified by low social support, fixed incomes, living in rural communities, and loss of the ability to drive.

Cross-Cultural/Bilingual Issues

Participants representing the Hispanic population expressed a desire for educational tools to navigate the health system. In addition to the obvious language issues, they were concerned about whether and how they needed to document their immigrant status to obtain care.

Access to Care in Outlying Areas

Participants outside of Davidson County described their difficulty obtaining primary care, including prenatal care. One example was the difficulty that adolescents encounter in attempting to access prenatal care. There was also a strong perceived need for better access to specialty care and for ways to overcome transportation barriers to accessing care. These concerns about access extended to preventive services such as pregnancy prevention, screening, and health promotion.

Dental Health

Dental health was identified by the community as a priority due to lack of insurance coverage, the high cost of dental care even with insurance coverage, and the lack of affordable providers in outlying counties.

Inequities in the Current Health Care System

The consequences of not being able to afford health care included lack of preventive care and screening, delayed diagnosis of severe conditions, inability to manage chronic disease adequately leading to unnecessary complications and premature morbidity and mortality. Even if Tennessee expands Medicaid, as proposed through the Affordable Care Act Medicaid expansion program, low income individuals and families will continue to face other barriers such as lack of paid sick leave, limited affordable transportation options, the need to work more than one job, and having to choose between purchasing health care and covering the necessities of life.

SUMMARY

The needs of the community were identified using a combination of secondary and primary data, and fell into four overarching and overlapping categories: access to care; morbidity and mortality; disease prevention and healthcare delivery; and health behavior and education.

Overall, the needs identified through our research were framed by the fact that the population served by Vanderbilt tends to be younger than the population of the state and the United States as a whole. Davidson County, in particular, has a high rate of poverty. The area from which our patient population arises includes both urban and rural communities, and represents a large geographic area.

Adult Health

Access to Care

Both the primary and secondary data pointed to challenges in accessing care for the community, particularly community members living in outlying areas, where logistical challenges exist for accessing both primary care and specialty physicians. Particularly for individuals in Montgomery and Rutherford counties, arranging time away from work to obtain clinical care was sometimes a significant enough barrier to preclude obtaining care. Lack of transportation was also noted in the primary data as a barrier to receiving care, and participants in outlying areas were clearly concerned about a need for more local services. Focus group participants reported that while they do sometimes use the emergency department for non-emergency healthcare, they recognize that this is suboptimal and would much prefer to use regular primary care or urgent care if it were available in their locations and during their available hours. Rates of preventable hospitalizations are high in our area at 81.75 per 1000 Medicare enrollees. The U.S. rate is 76.14. Only Davidson County meets the Healthy People 2020 goal for individuals indicating that they have a usual source of care. In the survey, more than 40% of individuals indicated that they were unable to afford care occasionally or often.

Other access issues that emerged in the focus groups included the need for a coordinated and holistic approach to elder care, particularly the challenge of discharge planning and support for caregivers. The need for bilingual materials for non-English speakers was also noted, not only in terms of clinical education and care, but also to help them navigate the health care system.

Morbidity and Mortality

Health outcome indicators point to a number of health challenges in our area relative to the nation, including a higher incidence of and/or death rates associated with cancer, cardiovascular disease, hypertension, diabetes and the prevalence of obesity. These indicators suggest opportunities for health improvement. Many indicators are characterized by significant racial disparities. Healthy People 2020 goals for stroke deaths, heart disease deaths, high blood pressure and high cholesterol are all currently unmet. Obesity and hypertension were a point of particular concern in the surveys and the focus groups. Indeed, nearly one third of adults are obese in our service area. Outside of Williamson County, the unintentional injury rate is high in our population, exceeding the Healthy People 2020 goal of 36 per 100,000 population, with substantially higher rates among men than women.

Disease Prevention and Health Care Delivery

Rates of screening for breast, cervical and prostate cancers are similar to those seen nationally, an indicator of the availability of preventive services, despite the noted high rates of disease. The proportion of older adults who report having had a pneumonia vaccine is higher in our combined service area (68.37%) than in Tennessee overall (41.45%) or the United States (55.68%). A higher proportion of patients with diabetes in our area have had a hemoglobin A1c test than is seen nationally, although at a rate of 83%, there remains opportunity for improvement.
In the surveys and focus groups, coordination of care was seen as a particular challenge in health care delivery, and focus group participants expressed a need for improved communication between local/community caregivers and Vanderbilt, including more expeditious record sharing and data exchange. Community members noted a need for help in navigating between and among health systems.

Health Behavior and Health Education

More than 15% of individuals with hypertension in our service area report not taking their medication. Fewer than 30% of adults in our service area report consuming adequate amounts of fruits and vegetables, compared to a national average of 24%. The percentage of adults reporting they engaged in leisure time fitness ranged by county from 18.4% to 27.4% compared to a national average of 24.7%. Survey and focus group respondents at all levels of income and education expressed a desire for Vanderbilt to engage with them and the community in supporting healthy lifestyle behaviors.

Children's Health

Access to Care

Survey respondents and focus group participants reported good access to pediatric care, but noted that it can be difficult to access in outlying areas, especially around a work schedule. Affordability of health care is a challenge for many in our patient population; as noted above, Davidson County in particular has high rates of poverty and across our service area, more than 20% of children are poor (ranging from a low of 6.3% in Williamson County to a high of 28% in Davidson County). More than 50% of Medicaid enrollees in our service area are children and in Davidson County, more than 40% of children overall are on Medicaid. Survey and focus group respondents noted the access to primary care, specialty care, emergency care and mental health services were priority areas for improving children's health.

Morbidity and Mortality

Childhood obesity is a problem in our area, as it is nationally, with county level prevalence among children ranging from 11.2% to 17.1%, compared to a national prevalence of 14.9% and survey and focus group respondents ranked obesity as the top priority for improving child health. The overall percentage of births with children at low birth weight or very low birth weight and infant mortality within each county either better than or slightly worse than the Healthy People 2020 targets. However, racial disparities in birth outcomes continue to be substantial.

Disease Prevention and Health Care Delivery

Rates of up-to-date vaccinations, using the CDC-recommended schedule for childhood immunizations, range by health department region (not county) from 64 to 84.6, across the state. The rate is 84.6 in the mid-Cumberland region and 74.8 in Nashville-Davidson, with a state average of 75.3. The Healthy People 2020 goal for this vaccination schedule is 80%. There are no significant racial disparities seen in childhood vaccination rates in our state. 91.4% of children receive their complete DTaP series (4 doses) on time in the Mid-Cumberland region and 81.1 in Davidson County, compared to a state average of 84.0. We have substantial challenges associated with influenza vaccine across the state – our 2012 childhood rate over the state was 44.2% compared with the Healthy People 2020 goal 80%.

Health Behavior and Health Education

The proportion of children of survey respondents who eat five servings of fruit and vegetables daily was low (58% overall). Nonetheless, in the survey, challenges identified by more than half of parents were teen sex behavior, prevention of childhood obesity, alcohol and drug prevention and bullying. Parents also perceived needs for services to prevent child abuse, additional mental health services, fitness opportunities and access to healthy foods.

Mental Health

Access to Care

Access to mental health care was a theme in both the survey responses and the focus groups, and included a need for stress management, depression treatment, partial hospitalization for adolescents and substance abuse services for adolescents. Focus group respondents noted a need for easier access to diagnostic services for ASD and ADHD. Adult focus group respondents noted difficulty in obtaining continuous treatment for severe and chronic mental illness, including bipolar disease and schizophrenia. Tennessee has notably fewer psychiatrists per 100,000 population than is typical nationally (10 versus 14 overall; 5.9 versus 9.8 for child psychiatrists).

Morbidity and Mortality

About 16% of children in Tennessee have one or more emotional, behavioral or developmental condition, relative to 15% nationally. All of our counties have suicide rates (11.77 to 13.82 per 100,000 population per year) that exceed the goal for Healthy People 2020 (<10.2); rates among males are four times higher than among females. The proportion of youth with a dependence on illicit drugs or alcohol is in line with national numbers at about 5.75%; for adults in our service area counties, the rates are between 8.0 and 9.0%. More than a fifth of Tennesseans over the age of 18 suffer from a mental illness; about 5% have a serious mental illness.

Disease Prevention and Health Care Delivery

Survey and focus group respondents ranked increasing mental health services as 11th among community priorities for improving child health.

Health Behavior and Health Education

More than 80 percent of Tennesseans report having adequate social or emotional support; that proportion is even higher in our service area. Tobacco use ranges from 13.9% in Williamson County to 29.2% in Montgomery County. The county percentage of adults who report heavy alcohol use ranges from 7.7% to 14.6%; all below the national average of 16.6%.

Works Cited

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[2] "State Wide Report Card for 2012: Attendance, Promotion, Dropout, and Graduation," 2012. Available at: http://www.tn.gov/education/reportcard/.

[3] American Diabetes Association, "Clinical Practice Recommendations," *Diabetes Care,* Vol. 36, No. 1, January 2013.

APPENDIX A. SECONDARY DATA SOURCES

Appendix A. Secondary Data Sources

Annie E. Casey Foundation*:* 2012 KIDS COUNT Data Book

The Annie E. Casey Foundation's 2012 KIDS COUNT Data Book shows both promising progress and discouraging setbacks for the nation's children: While their academic achievement and health improved in most states, their economic well-being continued to decline. This year's Data Book uses an updated index of 16 indicators of child well-being, organized into four categories. The new methodology reflects the tremendous advances in child development research since the first KIDS COUNT Data Book in 1990.

Center for Disease Control and Prevention

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based computer-assisted telephone interviewing effort conducted in cooperation with the Centers for Disease Control and Prevention. Questions are constructed to determine the behaviors of individuals that will affect their risk of developing chronic diseases that may lead to premature mortality and morbidity. The data collected helps to identify high risk populations that can be targeted for intervention programs. The data can also be used to track changes over time of prevalence of risk factor behaviors and related diseases, and can assess the impact of health promotion and prevention intervention programs. Currently, every state in the country, the District of Columbia, and three U.S. territories are members of this surveillance system. The Tennessee Department of Health has been participating in this system on a continuing basis since 1984, surveying adults from randomly selected households throughout the state every month.

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) Atlas

The NCHHSTP Atlas was created to provide an interactive platform for accessing data collected by CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP). This interactive tool provides CDC an effective way to disseminate data, while allowing users to observe trends and patterns by creating detailed reports, maps, and other graphics. Currently, the Atlas provides interactive maps, graphs, tables, and figures showing geographic patterns and time trends of HIV, AIDS, viral hepatitis, tuberculosis, chlamydia, gonorrhea, and primary and secondary syphilis surveillance data.

National Diabetes Data and Trends

Diabetes Data and Trends, which includes the National Diabetes Fact Sheet and the National Diabetes Surveillance System, provides resources documenting the public health burden of diabetes and its complications in the United States. The surveillance system also includes county-level estimates of diagnosed diabetes and selected risk factors for all U.S. counties to help target and optimize the resources for diabetes control and prevention

National Vital Statistics System- Natality

Supplied by the Centers for Disease Control and Prevention, National Center for Health Statistics (CDC, NCHS), vital statistics natality data are a fundamental source of demographic, geographic, and medical and health information on all births occurring in the United States. This is one of the few sources of comparable health-related data for small geographic areas over an extended period of time. The data are used to present the characteristics of babies and their mothers, track trends such as birth rates for teenagers, and compare natality trends with those in other countries.

National Vital Statistics System- Mortality

Vital statistics mortality data are a fundamental source of demographic, geographic, and cause-of-death information. This is one of the few sources of comparable health-related data for small geographic areas over an extended time period. The data are used to present characteristics of those dying in the United States, to determine life expectancy, and to compare mortality trends with those in other countries.

Dartmouth Atlas of Health Care

The Dartmouth Atlas Project (DAP) began in 1993 as a study of health care markets in the United States, measuring variations in health care resources and their utilization by geographic areas: local hospital market areas, regional referral regions, and states. More recently, the research agenda has expanded to reporting on the resources and utilization among patients at specific hospitals. DAP research uses very large claims databases from the Medicare program and other sources to define where Americans seek care, what kind of care they receive, and to correlate increasing expenditures and the supply of health providers and services with health outcomes.

Kaiser State Health Facts

Statehealthfacts.org is a project of the Henry J. Kaiser Family Foundation and is designed to provide free, up-to-date, and easy-to-use health data for all 50 states. Statehealthfacts.org provides data on more than 700 health topics and is linked to both the Kaiser Family Foundation website and Kaiser Health News. The Kaiser Family Foundation is a non-profit, private operating foundation focusing on the major health care issues facing the U.S., as well as the U.S. role in global health policy. The Foundation serves as a non-partisan source of facts, information, and analysis for policymakers, the media, the health care community, and the public. The Foundation is not associated with Kaiser Permanente or Kaiser Industries.

National Cancer Institute: State Cancer Profiles

The objective of the State Cancer Profiles Web site is to provide a system to characterize the cancer burden in a standardized manner in order to motivate action, integrate surveillance into cancer control planning, characterize areas and demographic groups, and expose health disparities. The focus is on cancer sites for which there are evidence based control interventions.

Interactive graphics and maps provide visual support for deciding where to focus cancer control efforts.

Substance Abuse and Mental Health Services Administration

Treatment Episode Data Set (TEDS), State Admissions to Substance Abuse Treatment Services

TEDS is an administrative data system providing descriptive information about the national flow of admissions to specialty providers of substance abuse treatment. It is a compilation of data on the demographic and substance abuse characteristics of admissions to (and more recently, on discharges from) substance abuse treatment. The data are routinely collected by State administrative systems and then submitted to SAMHSA in a standard format.

Tennessee County Health Rankings

More than 3,000 counties and the District of Columbia can compare how healthy their residents are and how long they live with the 2012 County Health Rankings, released today. The Rankings are an annual check-up that highlights the healthiest and least healthy counties in every state, as well as those factors that influence health, outside of the doctor's office. The Rankings highlight the importance of critical factors such as education rates, income levels, and access to healthy foods, as well as access to medical care, in influencing how long and how well people live.

Tennessee Department of Health

Health Statistics

Health Statistics is responsible for compiling, analyzing, and distributing information on health facilities, health care professionals, and on the health status of Tennesseans. Health Statistics staff have the skills and knowledge to answer your questions on Tennessee health statistics. Our staff of statisticians, statistical analysts, and researchers have over a century of experience coupled with advanced degrees in statistics, economics, psychology, and health fields.

Tennessee Data Query

HIT (Health Information Tennessee) not only provides a variety of previously calculated health and population statistics and prepared tables and reports, but incorporates an innovative data access tool for customizing on-line queries of case-level death, birth, survey, and facilities data. It produces data listings, pie or bar charts, or plots (maps to be added in the near future) at county, regional and statewide levels.

Tennessee Department of Mental Health and Substance Abuse Services

Tennessee Behavioral Health County Databook 2012

The Tennessee Department of Mental Health and Substance Abuse Services (TDMHSAS) Behavioral Health County Databook 2012 includes 59 total indicators covering three domains: children and youth; adults; and demographics.

Dashboard of Behavioral Health Indicators

The Tennessee Department of Mental Health Dashboard displays current information on key indicators comparing Tennessee data with United States data. Presented are 125 total indicators covering three domains: children and youth, adults, and all ages. The indicators are related to either mental health or substance abuse.

U.S. Census Bureau

American Community Survey

ACS is an annual nationwide survey designed to supplement the decennial census. The survey, based on the decennial census long form, produces population and housing information every year instead of every 10 years. Annual estimates of demographic, social, economic, and housing characteristics are available for geographic areas with a population of 65,000 or more. This includes the nation, all states, the District of Columbia, all congressional districts, approximately 800 counties, and 500 metropolitan and micropolitan statistical areas. Multi-year estimates are available for smaller geographic areas. During the demonstration stage (2000 to 2004), the Census Bureau carried out large-scale, nationwide surveys and produced reports for the nation, the states, and large geographic areas. The full implementation stage began in January 2005, with an annual HU sample of approximately 3 million addresses throughout the United States and 36,000 addresses in Puerto Rico. And in 2006, approximately 20,000 group quarters were added to the ACS so that the data fully describe the characteristics of the population residing in geographic areas.

Quick Facts

This tool is a quick and easy was to access facts about people, business, and geography. Quick Facts includes statistics for all states and counties, and for cities and towns with more than 5,000 people. Quick Facts tables are summary profiles showing frequently requested data items from various Census Bureau programs. Profiles are available for the nation, states, counties, and places.

U.S. Department of Agriculture - Food Environment Atlas

Food environment factors--such as store/restaurant proximity, food prices, food and nutrition assistance programs, and community characteristics--interact to influence food choices and diet quality. Research is beginning to document the complexity of these interactions, but more is needed to identify causal relationships and effective policy interventions. The objectives of the Atlas are to assemble statistics on food environment indicators to stimulate research on the determinants of food choices and diet quality, and to provide a spatial overview of a community's ability to access healthy food and its success in doing so.

U.S. Department of Health and Human Services

Area Resource File (ARF)

The basic county-specific Area Resource File (ARF) is the nucleus of the overall ARF System. It is a database containing more than 6,000 variables for each of the nation's counties. ARF contains information on health facilities, health professions, measures of resource scarcity, health status, economic activity, health training programs, and socioeconomic and environmental characteristics. In addition, the basic file contains geographic codes and descriptors which enable it to be linked to many other files and to aggregate counties into various geographic groupings.

U.S. Department of Labor: Bureau of Labor Statistics

The Bureau of Labor Statistics (BLS) is a unit of the United States Department of Labor. It is the principal fact-finding agency for the U.S. government in the broad field of labor economics and statistics. The BLS is a governmental statistical agency that collects, processes, analyzes, and disseminates essential statistical data to the American public, the U.S. Congress, other Federal agencies, State and local governments, business, and labor representatives. The BLS also serves as a statistical resource to the Department of Labor.

APPENDIX B. PRIMARY DATA COLLECTION METHODOLOGY

Appendix B. Primary Data Collection and Methodology

The survey was written based on the available guidelines for conducting community health needs assessments and the objectives. It was reviewed by the members of the CHNA team, and was entered into the REDCap system. Vanderbilt University, with collaboration from a consortium of institutional partners, has developed a software toolset and workflow methodology for electronic collection and management of research and clinical trial data. REDCap (Research Electronic Data Capture) is a secure, web-based application that is flexible enough to be used for a variety of types of research. One application of REDCap is the development and deployment of online questionnaires.

The plan for collecting primary data was reviewed by the Vanderbilt Institutional Review Board (IRB) and was determined to not qualify as research involving human subjects (it was considered to be a quality improvement project). Despite this, the first part of the survey involved an informed consent section that the user had to agree to in order to complete the remaining survey items. The text of the informed consent was:

> *"This survey is being conducted by Vanderbilt University in order to better understand the communities we serve and the needs of those who live in the communities. Answering this survey is voluntary. We will keep your answers completely anonymous - your name and other identifiers will never be associated with your answers. Completing the survey should take 10-15 minutes. Please check 'yes' to show that you have read this statement and agree to participate."*

Online Survey Solutions (OSS) Data Collection

Online survey Solutions (OSS http://www.onlinesurveysolution.com/) is a company that administers and manages online surveys. We contracted with OSS to use their resources to distribute the survey to a stratified sample in each of the four counties. Using census data, we identified targets by race/ethnicity, gender, and income in each county, and OSS was hired to obtain at least 200 surveys from each county. A link to the REDCap survey was sent to potential participants along with an identification code that allows participants to earn reward points from OSS. We removed the code from the data and sent these to OSS for all who completed the survey. A total of 934 completed surveys were obtained from OSS (see Table 1 for details).

Vanderbilt University Online Survey

In order to increase the number of respondents, a link to the online survey was advertised on several Vanderbilt web sites. The advertisement described it as an online survey to "help make Middle Tennessee a healthier place to live" and informed people that everyone who completed the survey would be entered into a drawing of an I-Pad Mini. The advertisement included a link to the REDCap survey. After completing the survey, the participant was directed to another page

that asked for name and email address for the I-Pad drawing. There was no way to link survey responses to names and email addresses using this methodology. The online survey resulted in 1185 completed surveys.

Vanderbilt Paper Survey

Examination of the online surveys should a lack of income diversity. A paper survey was created from the REDCap survey and used to collect surveys. Personnel went to community settings including comprehensive community health centers, and neighborhood resource centers and asked adults to complete the survey. A separate sign-up sheet was used to collect names and email addresses (or phone numbers) for entry into the I-Pad drawing. Using these methods, 183 additional completed surveys were obtained. These surveys were entered into a separate REDCap data base.

Data Management

All data were exported from REDCap into SPSS version 21 (IBM, http://www-01.ibm.com/software/analytics/spss/). The last variable in the REDCap file is a flag indicating whether the survey was completed. We eliminated all surveys that were not complete. The survey was set up so that questions could be skipped or not answered. The final sample contained 2303 respondents. However, the total number of non-missing values is less for many variables because some items were skipped. All analyses were conducted using SPSS and tables and graphs were created by exporting the output to Microsoft Excel.

APPENDIX C. COMMUNITY SURVEY

VUMC Community Health Needs Assessment

Working to make Middle Tennessee a healthier place to live.

If you are at least 18 years of age, please complete the following survey. All responses will remain anonymous. After completing the survey you will be eligible to enter a drawing for an iPad-Mini. At the end of the survey, you will be directed to another page. To participate in the drawing, enter your name and email address on this page. Your name and email address will be kept separate from your survey responses.

Thank you!

Consent to Participate in this Study

This survey is being conducted by Vanderbilt University in order to better understand the communities we serve and the needs of those who live in the communities. Answering this survey is voluntary. We will keep your answers completely anonymous - your name and other identifiers will never be associated with your answers. Completing the survey should take 10-15 minutes. Please check "yes" to show that you have read this statement and agree to participate.

☐ Yes
☐ No

If you do not wish to participate in this study, you can exit out of the web page now.

Tell us who you are:

1. Name of the county where you live:
   - ☐ Davidson
   - ☐ Montgomery
   - ☐ Rutherford
   - ☐ Williamson
   - ☐ Other

2. Length of time you have lived in your current location:
   - ☐ Less than 1 year
   - ☐ 1 to 5 years
   - ☐ 6 to 10 years
   - ☐ More than 10 years

3. Zipcode: _____

4. Age:
   - ☐ 18-25
   - ☐ 26-35
   - ☐ 36-45
   - ☐ 46-55
   - ☐ 55-65
   - ☐ Over 65

   (Click on the drop-down arrow to view choices.)

5. Sex:
   - ☐ Male
   - ☐ Female

6. Race/Ethnicity (check all that apply):
   - ☐ White
   - ☐ Black/African American
   - ☐ Hispanic
   - ☐ American Indian/Alaskan Native
   - ☐ Asian/Pacific Islander
   - ☐ Other

6b. If you checked 'Other' for #6, please indicate the race/ethnicity in which you identify: _____

7. Highest level of education completed:
   - ☐ Less than High School
   - ☐ High School Graduate/GED
   - ☐ Some college
   - ☐ Bachelor's Degree
   - ☐ Post Graduate Degree

8. Employment Status:
   - ☐ Employed full-time
   - ☐ Employed part-time
   - ☐ Full-time student
   - ☐ Part-time Student
   - ☐ Full-time homemaker
   - ☐ Retired
   - ☐ Unemployed for less than one year
   - ☐ Unemployed for more than one year
   - ☐ Unemployed due to illness or disability

9. County where you work:
   - ☐ Davidson
   - ☐ Montgomery
   - ☐ Rutherford
   - ☐ Williamson
   - ☐ Other
   - ☐ Not applicable

9b. If you work in a county other than ones listed above, please type in the name of that county here: _____

10. Employment Sector:

- ☐ Private business
- ☐ Government
- ☐ Education
- ☐ Health care
- ☐ Not-for-profit
- ☐ Self-employed
- ☐ Other
- ☐ Not applicable

10b. If you chose 'Other' for #10, please indicate the sector in which you work: _____

11. Yearly household income:

- ☐ Less than $5,000
- ☐ $5,000 to $14,999
- ☐ $15,000 to $24,999
- ☐ $25,000 to $49,000
- ☐ $50,000 to $74,999
- ☐ $75,000 to $99,999
- ☐ $100,000 to $199,000
- ☐ $200,000 or more

Insurance, Health Care & Wellness

12. Types of insurance coverage you currently have (check all that apply):
- ☐ Don't have insurance
- ☐ Health
- ☐ Dental
- ☐ Vision
- ☐ Don't know

12b. Source of your insurance coverage:
- ☐ Insurance provided by my (or a relative's) employer
- ☐ Insurance I purchase directly
- ☐ Medicare
- ☐ TennCare
- ☐ Government (VA, CHAMPUS)
- ☐ Health Savings Account
- ☐ Other
- ☐ Do not know

12c. If you checked 'Other' for #12b, please indicate what other source of insurance you have:

_____

13. How would you rate the current state of your health?
- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very good
- ☐ Excellent

14. When was your last routine doctor's visit?
- ☐ Within the last 12 months
- ☐ Within the last 2 years
- ☐ Within the last 5 years
- ☐ Over 5 years ago
- ☐ Have never had a routine doctor's visit

15. Have you had any of the following preventive procedures in the past year (check all that apply)?
- ☐ Mammogram
- ☐ Pap smear
- ☐ Glaucoma test
- ☐ Flu shot
- ☐ Colonoscopy or occult blood test for colon cancer
- ☐ Blood pressure check
- ☐ Blood sugar check
- ☐ Skin cancer screening
- ☐ Prostate cancer screening (PSA test or digital exam)
- ☐ Cholesterol screen
- ☐ STD (sexually transmitted disease) screening
- ☐ Vision screening
- ☐ Hearing screening
- ☐ Cardiovascular/heart disease screening
- ☐ Bone density test
- ☐ Dental cleaning/x-rays

16. Do you currently smoke tobacco?
- ☐ Yes
- ☐ No

17. How important is a healthy lifestyle for you?
- ☐ Not important
- ☐ A little important
- ☐ Somewhat important
- ☐ Very important

In order to stay healthy, how often do you:

	Never	2-3 times a year	Monthly	2-3 times a month	Weekly	2-3 times week	Always (Daily)
Limit red meat	☐	☐	☐	☐	☐	☐	☐
Eat 5 or more servings of fruits and vegetables a day	☐	☐	☐	☐	☐	☐	☐
Take vitamins/nutritional supplements	☐	☐	☐	☐	☐	☐	☐
Avoid alcohol or use alcohol in moderation	☐	☐	☐	☐	☐	☐	☐
Get 7-8 hours of sleep a day	☐	☐	☐	☐	☐	☐	☐
Lose weight or keep from gaining weight	☐	☐	☐	☐	☐	☐	☐
Exercise 20 minutes or more a day	☐	☐	☐	☐	☐	☐	☐
Manage your stress	☐	☐	☐	☐	☐	☐	☐
Meditate or practice relaxation	☐	☐	☐	☐	☐	☐	☐
Pray	☐	☐	☐	☐	☐	☐	☐
Take prescribed medications	☐	☐	☐	☐	☐	☐	☐

19. Where do you go for routine health care? (check all that apply)

- ☐ Physician's office
- ☐ Hospital emergency room
- ☐ Health department clinic
- ☐ Urgent care center
- ☐ Chiropractor
- ☐ Community Clinic
- ☐ Dentist
- ☐ Eye doctor
- ☐ Other
- ☐ Do not seek routine health care

19b. If you checked 'Other' for # 19, please type in where you go for routine health care: _____

20. Are you able to visit a doctor when you need to?

- ☐ Always
- ☐ Sometimes
- ☐ Never

Below is a list of reasons that make it difficult for people to get health care. For each one, select how often a problem it is for you.

	never a problem	occasionally a problem	often a problem
Do not have insurance	☐	☐	☐
Too expensive/can't afford	☐	☐	☐
Lack of transportation	☐	☐	☐
Can't get appointment	☐	☐	☐
Doctor or clinic is too far away	☐	☐	☐
Can't get off of work	☐	☐	☐
Family responsibilities	☐	☐	☐
Being too busy	☐	☐	☐

21i. If there is another reason that makes it difficult for you to obtain medical care that wasn't listed above, please type it here. _____

22. Does your employer offer a health promotion/wellness program?
- ☐ Yes
- ☐ No
- ☐ Don't Know
- ☐ Not applicable (e.g., not employed or self-employed)

22b. If yes (to #22), do you participate?
- ☐ Yes
- ☐ No

22c. If you do not participate, why not? _____

22d. If no (to #22), but your employer offers a health promotion/wellness program in the future, would you participate?
- ☐ Yes
- ☐ No

22e. If you would not participate, why not? _____

Your Children's Health

23. Do you have any children under the age of 18 living in your home?
- ☐ Yes
- ☐ No

23b. What types of insurance coverage do you currently have for your child(ren)? (check all that apply)
- ☐ Don't have insurance
- ☐ Health
- ☐ Dental
- ☐ Vision
- ☐ Don't know

23c. Source of your child's insurance coverage:
- ☐ Insurance provided by my (or a relative's) employer
- ☐ Insurance I purchase directly
- ☐ Medicare
- ☐ TennCare
- ☐ Government (VA, CHAMPUS)
- ☐ Health Savings Account
- ☐ Other
- ☐ Do not know

23c.2 If you checked 'Other' (for #23c), please indicate what other source of insurance your children have: _____

23d. How would you rate the state of your children's health?
- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very good
- ☐ Excellent

23e. Do your children have a routine doctor's office visit each year?
- ☐ Yes
- ☐ No

23f. Do your children eat at least 5 servings of fresh fruit and vegetables every day?
- ☐ Yes
- ☐ No

In order for your child(ren) to stay healthy, how often do they:

	Never	Monthly	Weekly	Daily
Eat 5 servings of fruits and vegetables a day	☐	☐	☐	☐
Take vitamins/nutritional supplements	☐	☐	☐	☐
Get 7-8 hours of sleep a day	☐	☐	☐	☐
Exercise 20 minutes or more a day	☐	☐	☐	☐

Please click the "Next Page" button to continue.

23g. Are you able to take your children to the doctor when you need to?

- ☐ Always
- ☐ Sometimes
- ☐ Never

23h. If they are not always able to visit the doctor when needed, select why?

- ☐ No insurance
- ☐ Too expensive/can't afford
- ☐ Can't get appointment
- ☐ Lack of transportation
- ☐ Doctor is too far away
- ☐ Other

23i. If you selected 'Other' (for # 23h), please indicate the reason why your children are not always able to visit the doctor when needed:

_____

Community Resources

With regard to your community, please indicate how strongly you agree or disagree with each statement. Even if you do not have children, you can still respond to these statements.

	strongly disagree	disagree	don't know	agree	strongly agree
It is easy to get immunizations and vaccinations for children in my community.	☐	☐	☐	☐	☐
Emergency care is available for children in my community.	☐	☐	☐	☐	☐
There are enough primary care physicians who are willing to see children in my community.	☐	☐	☐	☐	☐
There are enough specialized care physicians available for children in my community.	☐	☐	☐	☐	☐
Hospitals adequately meet the needs of children.	☐	☐	☐	☐	☐
Primary care physicians can see children in a timely manner.	☐	☐	☐	☐	☐
Dental care is available for children in my community.	☐	☐	☐	☐	☐
Mental health services are available for children in my community.	☐	☐	☐	☐	☐
It is easy to get information about children's health services that are available in my community.	☐	☐	☐	☐	☐
Children are safe from child neglect and abuse in my community.	☐	☐	☐	☐	☐
The schools in my community protect children from bullying.	☐	☐	☐	☐	☐
My community makes a good effort to prevent childhood obesity.	☐	☐	☐	☐	☐
There are enough fitness opportunities for children in my community.	☐	☐	☐	☐	☐
The children in my community have access to healthy foods.	☐	☐	☐	☐	☐
It is easy to get a car seat for a child in my community.	☐	☐	☐	☐	☐
My community makes a good effort to prevent drug and alcohol use by children.	☐	☐	☐	☐	☐

My community makes a good effort to help adolescents and teens avoid risky sexual activity.	☐	☐	☐	☐	☐

41. What do you think are the important child health issues in your community (choose 3)?

- ☐ Immunizations/vaccinations
- ☐ Access to primary care
- ☐ Emergency care
- ☐ Specialty care
- ☐ Access to dental care
- ☐ Access to mental health services
- ☐ Child neglect and abuse
- ☐ Bullying
- ☐ Obesity
- ☐ Exercise
- ☐ Healthy food
- ☐ Safety
- ☐ Alcohol and drug abuse
- ☐ Risky sexual activity

Tell us What you Think:

42. Based on your experience, what are the three most significant health concerns in your community? _____

43. What problems have you or people you know faced in obtaining the health care services they need? _____

44. What do you think would reduce the use of the Emergency Room for non-emergencies? _____

45. Where can local hospitals, either on its own, or in collaboration, have the greatest impact on improving the health of the community? _____

46. Are there specific health topics you think area medical centers/Vanderbilt should be researching? _____

47. Do you have health goals for yourself or your family that you find difficult to attain? _____

APPENDIX D. COMMUNITY HEALTH RESOURCES

Appendix D. Community Health Resources

COMMUNITY HEALTH CENTERS	
Davidson	(18) Cayce Family Health Center, Downtown Clinic & Mobile Clinic, Faith Family Medical Clinic, Madison Family Clinic, Main Street Family Clinic, Matthew Walker Comprehensive Health, Mercury Court Clinic, Northeast Family Clinic, Parthenon Towers Clinic, ProHealth Medical Center, Saint Thomas Family Health Center South, Saint Thomas Family Health Center West, Siloam Family Health Center, Southside Family Clinic, University Community Health Services, Wallace Road Family Clinic, Waverly Family Clinic, Youth Opportunity Center Clinic
Montgomery	(2) Matthew Walker, Comprehensive Health Center
Rutherford	(3) Franklin Heights Housing, Authority Clinic, Primary Care & Hope Clinic
Williamson	(3) Graceworks Health Clinic, Mercy Community Healthcare, ProHealth Rural Health Services

DIAGNOSTIC AND TESTING CENTER	
Davidson	(16) BioImaging of Charlotte, BioImaging of Harding, Centennial Imaging Center, Diagnostic Health Corporation, Hillsboro Imaging, Imaging Alliance - Nashville PET LL, Next Generation Imaging, Premier Orthopaedic Imaging Center, Premier Radiology Associates, Southern Hills Outpatient and Women, Specialty MRI Center, Summit Medical Center Outpatient Impatient, Tennessee Oncology PET / CT Office, Touchstone Imaging of Hermitage, Vanderbilt Heart Institute-Imaging, Vanderbilt Saint Thomas Imaging Center
Montgomery	(1) Clarksville Imaging Center
Rutherford	(7) Diagnostic Outpatient Center, Imaging Center of Murfreesboro, Middle Tennessee Imaging, Middle Tennessee Medical Center Out, Mufreesboro Diagnostic Imaging. Radiology and Diagnostics, Tennessee Oncology- PET Imaging
Williamson	(4) BioImaging of Cool Springs, Cool Springs Imaging, Maury Regional Hospital Spring Hill, Williamson Medical Center Outpatient

FREESTANDING AMBULATORY CENTER	
Davidson	(24) Miller Medical Group – Baptist, Baptist-CentraCare – Hermitage, Children's Clinic Of Donelson, Urology Associates, Baptist Healthcare Group, Vanderbilt University, Internal Medicine Group, Madison Minor Emergency Center, Baptist Convenient Care Center, Baptist Convenient Care Center, Baptist Convenient Care Center, Baptist South / Plaza 1, Baptist South / Plaza 2, Concentra Medical Center, Doctors for Women, Edwards Eve Clinic Associates, Family Practice Associates Southern, Frist Clinic, Harding Medical Center, Tennessee Orthopaedic Alliance, Tennessee Orthopaedic Alliance, Terrace Pediatric Group, Urology Associates, Vanderbilt Asthma Sinus & Allergy
Montgomery	(4) Clarksville Endoscopy Center, Clarksville Surgery Center, GI Specialists of Clarksville, Surgery Center of Clarksville
Rutherford	(5) Columbia Care Center – Murfreesboro, Concentra Medical Center, Tennessee Pediatric, CentraCare of Tennessee – Smyrna, Smyrna Medical Center
Williamson	(4) Brentwood Family Care, Franklin Medical Clinic, Urology Associates, Vanderbilt Medical Group - Franklin

FREESTANDING OUTPATIENT SURGERY CENTER	
Davidson	(34) Aesthetic Surgery and Laser Center, American Endoscopy Center, Associated Endoscopy Ambulatory Surgery Center, Baptist Ambulatory Surgery Center, Baptist Plaza Surgicare, Centennial Surgery Center, Center for Oral and Facial Surgery, Delozier Surgery Center, Digestive Disease Endoscopy Center, Endoscopy Center of Centennial, Eye Surgery Center of Middle Tennessee, Eye Surgery Center of Nashville, Gurley Surgery Center, Loden Vision Centers Outpatient Surgery, Mid State Endoscopy Center, Nashville Endoscopy Center, Nashville Gastrointestinal Endoscopy, Nashville Surgery Center, Nashville Vision Correction, Northridge Surgery Center, Planned Parenthood Association of Nashville, Plastic Surgery Center of Nashville, Premier Orthopaedic Surgery Center, Saint Thomas Campus Surgicare, Saint Thomas Medical Group Endoscopy, Saint Thomas Outpatient Neurosurgic Center, Southern Endoscopy Center, Southern Hills Surgery Center, Specialty Surgery Center, Summit Ambulatory Surgery Center, Tennessee Pain Surgery Center, The Center for Reproductive Health, Urology Surgery Center, Wesley Opthalmic Surgery Center
Montgomery	
Rutherford	(4) Middle Tennessee Ambulatory Surgery, Physicians Pavillion Surgery Center, Surgicenter of Murfreesboro, SurgiCenter of Murfreesboro Medical
Williamson	(5) Cool Springs Ambulatory Surgery Center, Crossroads Surgery Center, Franklin Endoscopy Center, The Bone and Joint Surgery Center, Williamson Surgery Center

HOME HEALTH	
Davidson	(21) Amedisys Home Health, Amedisys Inc., Apria, Care South, CareAll, Continuous Care Services, Elk Valley Health Services, Friendship Home Health Agency LLC, Gentiva Health Services, Healthfield Home Health, Home Health Care of Middle TN, Homecare Solutions / Nashville, Intrepid, Matria Healthcare, Nashville Homecare, Premiere Home Health, ResCare HomeCare, Sumner Homecare, Sunbelt Home Health Services, US Bioservices, Willowbrook Home Health Care Agency
Montgomery	(6) Acertive Home Health, Amedisys Home Health, Assertive Home Health Care, Gateway Home Care and Hospice, Gateway Homecare, Home Care Solutions
Rutherford	(10) Alvin C York Veterans Affairs Medical Center, Amedisys Home Health Care, Amedisys Home Health Care, CareSouth, Donelson Home Health, Home Care Solutions, Home Health Care of Middle Tennessee, Intrepid N H C Homecare, Willowbrook Home Health Care Agency
Williamson	(5) Integrity Healthcare, Guardian Home Care of Nashville, NHC Homecare, Willowbrook Health & Home Services, Amedisys Home Health Care

HOSPITAL	
Davidson	(17) Summit Medical Center, Baptist Hospital, Monroe Carell Jr Childrens Hospital, Vanderbilt University Hospital, Skyline Madison Campus, Baptist North Tower Surgical Hospital, Centennial Medical Center, Kindred Hospital Nashville, Metropolitan Nashville General Hospital, Middle Tennessee Mental Health Institute, Nashville Rehabilitation Hospital, Saint Thomas Hospital, Select Specialty Hospital – Nashville, Skyline Medical Center, Southern Hills Medical Center, TN Valley Healthcare System-Nashville, Vanderbilt Stallworth Rehabilitation Hospital
Montgomery	Gateway Medical Center
Rutherford	(3) Alvin C York Veterans Affairs Medical Center, Middle Tennessee Medical Center, StoneCrest Medical Center
Williamson	Williamson Medical Center

MEDICAL GROUP PRACTICE	
Davidson	(94) Ace Research Specialists LLC, Associates in Gastroenterology, Baptist Womens Treatment Center-Nashville, Bryan R Kurtz MD, Cardiovascular Surgery Associates, CCA Metro, Centennial Pediatrics, 25th Ave., Centennial Pediatrics, Dickerson Pike, Centennial Pediatrics, Highway 70S, Centennial Pediatrics, Recovery Rd., Centennial Pediatrics, Ward Dr., Childrens Medical Group, Concentra Medical Center, Concentra Medical Center, Elm Hill Pike, Concentra Medical Center, Sidco Dr., D Phillips Altenbern MD Ob/Gyn, David L Harrom MD, Doctor Alper Wolf Allen and Sutton, Doctor Elam Harbison and Hanson, Endocrin Diabetes Association, Endocrin Resource Network, Eye Health Partners and Glaucoma Center, Family Medical Associates, Frist Cardiology, Green Hill Medical, Greenhill Pediatrics, Gynecologic Oncology Associates, Hanes Pathology, Harding Place Care Center, Heart Group, Heritage Medical Associates, Heritage Medical Associates PC, Internal Medical Group, James D Bomboy Jr MD, Lifesigns of Nashville, Marcia A Montgomery MD, Maternal and Infant Care Program, Metropolitan Primary Care Clinic, Michael J Magee MD, Michael Zanolli MD, Nashville ENT, Nashville Gastrointestinal Specialicist-2010 Church St., Nashville Gastrointestinal Specialist- 4230 Harding Road, Nashville Gastrointestinal Specialist-3443 Dickerson Road, Nashville Gastrointestinal Specialist- 397 Wallace Road, Nashville Oncology Associates PC, Nashville Orthopaedic Specialists, Nashville Skin and Cancer PLC, Nashville Surgical Associates, Nephrology Association- 28 White Bridge Road, Nephrology Association- 397 Wallace Road, Neurosurgical Associates, Old Harding Road Pediatric, Page - Campbell Cardiology Group, Pain Management Group, Pediatric Association -Davidson County, Premier Orthopaedics, Priest Lake Medical Clinic, Rivergate Pediatrics, Saint Thomas Heart-1195 Old Hickory Blvd., Saint Thomas Heart- 222 2nd Ave., Saint Thomas Heart-4230 Harding Road, Sharon M Piper MD, Skyline Care Center, South Madison Wellness Center, Southern Hills Pediatrics Dr Lee An, Southern Ob/Gyn, Southside Health Center, St Thomas Cardiology Consultants, St Thomas Family Health Center, St Thomas Medical Group-Bellevue, St Thomas Outpatient Cardiac Cath C, St Thomas Outpatient Neurological, Stephen L Hammerman MD, Stones River Medical Consultants, Summit Care Center, Summit Eye Associates, Summit Family Practice, Summit Medical Associates, Tennessee Breast Specialists, Tennessee Orthopaedic Alliance, Tennessee Orthopaedic Alliance – SK, The Allergy Asthma & Sinus Center, The Consultant Group-Rheumatology, The Heart and Vascular Clinic, Thomas J Friddell MD, Urology Associates, Urology Associates - Southern Hills, Vanderbilt General Internal Medicine, Vanderburg Joint Replacement, Waverly Belmont Medical Center, Womens Health Alliance, Womens Health Group
Montgomery	(3) Centennial Pediatrics, First Baptist Church Good Samaritan, Premier Medical Group

Rutherford	(22) Baptist Womens Treatment Center-Murfreesboro, Centennial Pediatrics, Community Med Practices, EC Tolbert MD, Family Health Association,.Muffreesboro Ob/Gyn, Murfreesboro Care Center, Peter A Dicorleto MD, Robert J Dray, Robert T Knight MD, SB Pinto MD, Smyrna Care Center, Smyrna Clinic, Stephen G Odom MD, StoneCrest Gateway Primary Care, Susan Andrews MD and Randall Rickar, The Eye Center, Thomas E, Sulkowski MD, Urology Associates, Warren O Langworthy MD, Womans Clinic of Murfreesboro, Womens Health Specialist
Williamson	(18) Brentwood Dermatology, Centennial Pediatric Brentwood, Deborah Byer MD, Doctor Staggs Presley Burch Jr, Medi-Weightloss Clinic - Cool Springs, Saint Thomas Heart, Tennessee Pediatrics, All Season Allergy Specialists, Biological Therapy Institute, Cool Springs Care Center, Dophin Medical, Family Practice & Diagnostic Center, Franklin Gastroenterologists, Graceworks Health Clinic, LasikPlus, The Bone and Joint Clinic, Williamson Baptist Medical Group, Tennessee Pediatrics

NURSING HOME	
Davidson	(25) Good Samaritan Health & Rehab Center, Vanco Manor Nursing Center, Mc Kendree Village, Ridgetop Haven, Imperial Manor Convalescent Center, Madison Healthcare and Rehab Center, Belcourt Terrace Nursing Home, Bethany Health Care Center, Bordeaux Long Term Care, Crestview Nursing Home, Cumberland Manor Nursing Center, Donelson Place Care & Rehabilitation, Greenhills Health and Rehab, Health Center at Richland Place, Jackson Park Christian Home, Lakeshore Heartland, Lakeshore Wedgewood, River Park Health Care Center, The Cornelia House, The Meadows, Trevecca Health Care Center, West End Health Care Center, West Meade Place, Woodcrest at Blakeford, Briley Nursing and Rehab
Montgomery	(4) Clarksville Manor Nursing Center, Montgomery County Nursing Home, Palmyra Health Care Center, Spring Meadows Health Care Center
Rutherford	(9) Adams Place, Boulevard Terrace Rehab & Nursing, Community Care of Rutherford County, Mayfield Rehabilitation & Special Center, NHC Healthcare – Murfreesboro, NHC Healthcare – Oakwood, Northside Health Care Center, Peachtree Center Nursing And Rehab, Tennessee Veterans Home
Williamson	(5) Somerfield At The Heritage, Claiborne & Hughes Health Center, Harpeth Terrace Convalescent Center, NHC Healthcare – Franklin, NHC Place at Cool Springs

PHYSICIAN OFFICE BASED SURGERY	
Davidson	(17) Nashville Healthcare Group, Rivergate Dermatology, Center for Urological Treatment, Cumberland Ob/Gyn, Green Hills Childrens Clinic, Madison Family Practice, Memorial Orthopedics Group, Nashville Medical Group, Nashville Ob/Gyn, Nashville Plastic Surgery, Nashville Surgical Associates, Neurosurgical Associates, Southern Hills, Southern Sports Medicine, Surgical Group Of Nashville, Tennessee Pediatric, Vanderbilt Medical Grp - Wmg Green
Montgomery	(3) Childrens Clinic, Clarksville Ob/Gyn Assoc , Premier Medical Specialty and Surgery
Rutherford	(5) Murfreesboro Family Care, Murfreesboro Medical Clinic, N Rao Chunduru MD, Steven J Payne MD, Tennessee Orthopaedic Alliance
Williamson	(7) Brentwood Children's Clinic, Brentwood Primary Care, Franklin Women's Center, Grassland Family Care Center, Mercy Children's Clinic, Pro Health Medical Center, Vanderbilt Health - Franklin

PUBLIC HEALTH CLINIC	
Davidson	(3) Lentz Public Health Center, East Public Health Center, Woodbine Public Health Center
Montgomery	(1) Clarksville Clinic
Rutherford	(2) Murfreesboro Clinic, Smyrna Clinic
Williamson	(2) Franklin Clinic, Fairview Clinic