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Population Health Strategic Plan
University of Texas Medical Branch

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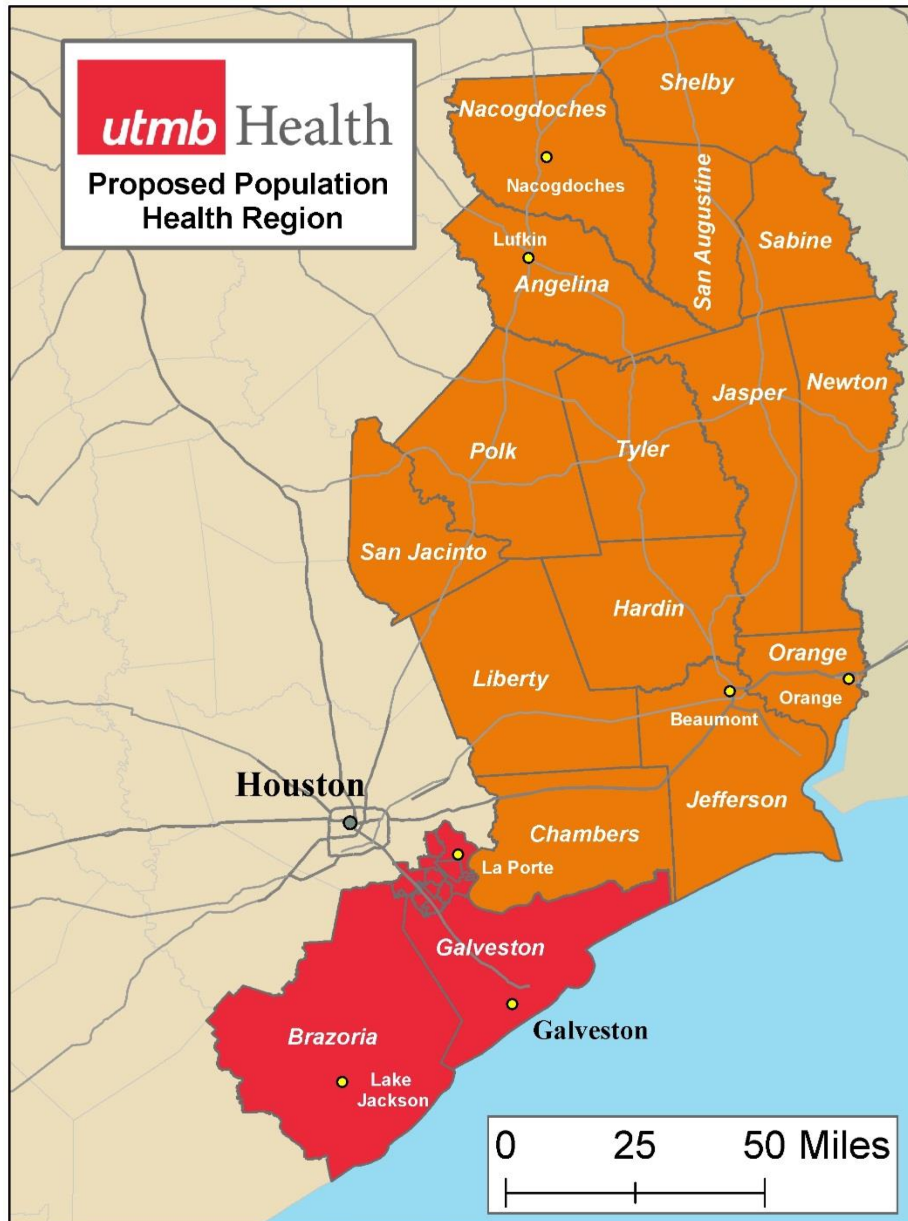
1 Catchment Area

The identified catchment area for the UTMB Population Strategic Plan includes 17 counties in southeast Texas plus the southern part of Harris County. This catchment area includes the 16 counties in the Medicaid 1115 Waiver Region 2 plus additional territory that is part of UTMB's primary service delivery region. The counties and zip codes included are shown on the map below.



Summary sociodemographic data for the region is included in Table 1.1. The table displays data for the region in comparison to state and national data. The region, as a whole, has a slightly higher percentage of African American residents and a lower percentage of Hispanics than does the state. Socioeconomic factors generally are more favorable in the region than in the state.

The table also illustrates significant socioeconomic and demographic diversity within the selected region. Slightly more than half of the population in the selected region resides in Galveston County, Brazoria County, or southern Harris County. Those three counties are the most populated in our catchment area and we will distinguish between these larger counties and the smaller counties in our region. The larger counties sub-region, within the Houston metropolitan area, displays higher education and economic wellbeing compared to the other counties as a group. The larger counties also had a higher percentage of Hispanics (28.4% to 14.4%) and a lower percentage of African Americans (11.0% to 18.1%) than the smaller counties.

The smaller counties had 41.9% of households below 200% of the poverty level, compared to 27.3% in the larger counties region. Similarly, the smaller counties had higher rates of uninsured adults 18-64 (30.8%) compared to the larger counties area (24.0%). The smaller counties were also experiencing greater population aging with 14.4% of their population over the age 65 compared to 10.6% in the larger counties area.

Socioeconomic and demographic data by county is reported in *Appendix A.* These data tables exclude zip codes in southern Harris County because most data were not available at that level of geographic detail. *Appendix A* data shows that the catchment area of southeast Texas has a relatively high unemployment rate (ranging from 5.7% to 12.8%), compared to both Texas (5.1%) and the U.S. (5.5%). Most of the counties in the region have high percentages of school children eligible for free school lunch, ranging from 30% to 85%. The region also has relatively high rates of incarceration (ranging from 1.05% to 3.54% with a median of 2.54%) compared to Texas (2.16%) and the U.S. (0.70%).

To select this catchment area, our Population Health Strategic Plan Advisory Committee reviewed maps for UTMB's primary and secondary service delivery areas by zip code, the DSRIP Medicaid 1115 Waiver Region 2, the East Texas AHEC regions, the Texas HHSC regions, the Texas RAC regions, and others. Members of the Population Health Strategic Plan Advisory Committee include representatives from the UTMB Health System, the Region 2 Waiver Office, the Department of Preventive Medicine and Community Health, East Texas AHEC, the UTMB Institute for Translational Science (CTSA), and the Office of Health Policy and Legislative Affairs.

Table 1.1. Sociodemographic Characteristics for the Southeast Texas Region, Texas, and the U.S., 5-Year Estimates 2009-2014

	SE Texas Region	*Texas*	*U.S.*	*Larger Counties**	*Smaller Counties*
Total Population	1,790,008	26,092,033	309,082,258	977,395 (54.6%)	812,613 (45.4%)
% Under 18 years old	26.2%	26.8%	23.8%	26.5%	25.2%
% Over 65 years old	12.4%	10.9%	13.5%	10.6%	14.4%
% Female	50.8%	50.4%	51.2%	50.6%	51.1%
Race/Ethnicity					
% White, non-Hispanic	58.6%	44.3%	62.9%	53.8%	64.4%
% Black/African American	14.2%	11.6%	12.4%	11.0%	18.1%
% Hispanic	22.0%	38.2%	16.9%	28.4%	14.4%
% Asian	3.7%	4.0%	5.1%	5.3%	1.7%
% Other	1.5%	1.9%	2.7%	1.6%	1.4%
Socioeconomic Factors					
% Less than HS degree	9.5%	17.9%	13.4%	11.1%	14.8%
% Less than 200% FPL	33.9%	38.7%	34.6%	27.3%	41.9%
% Household income <$25K	17.1%	23.4%	17.7%	12.5%	22.5%
% Uninsured	19.7%	21.9%	14.2%	18.1%	21.7%
% Uninsured under 18 years	11.1%	12.6%	7.1%	10.6%	11.8%
% Uninsured ages 18-64	27.0%	29.5%	19.8%	24.0%	30.8%

Region includes 1115 Waiver RHP 2 Counties plus Chambers County and the following zip codes in Harris County: 77034, 77058, 77062, 77089, 77505, 77507, 77536, 77546, 77571, 77581, 77586, and 77598. The 1115 Waiver RHP 2 Counties include: Angelina, Brazoria, Galveston, Hardin, Jasper, Jefferson, Liberty, Nacogdoches, Newton, Orange, Polk, Sabine, San Augustine, San Jacinto, Shelby, and Tyler.

* - Includes Galveston and Brazoria Counties, as well as selected Harris county zip codes

Source: Data are from Table S2701 from the 2014 American Community Survey 5-year estimates.

2 Data on Health of the Population

The University of Texas Medical Branch Department of Preventive Medicine and Community Health faculty and staff gathered publicly available secondary data from a variety of existing data sources (see *Appendix B*). County-level data were collected for each of the 17 counties, as well as state and national data, for comparison. This section provides an overview of select healthcare, health outcome, and environmental indicators, all of which have an impact on health status. For each indicator, the range and median for this 17-county region are provided, in addition to county, state, and national data, where available. *Appendix B* includes the data source, indicator description, and year(s) used for each indicator. *Appendix C* provides the county health profiles for each of the 17 counties. *Appendix D* provides narrative summaries for each of the 17 counties. And *Appendix E* provides additional data tables.

Health Care Access and Resources

Health Insurance and Health-Related Costs:

Uninsured rates are much higher in the region and Texas as a whole when compared with the United States. In the U.S., 6% of the population from 0 to 18 years old is uninsured, compared to 12.7% in Texas. The range of uninsured in this age group in the region is 10.5% to 17.8%. In the U.S., 11.9% of the population from 0 to 64 years old is uninsured, compared to 24.8% in Texas. The range of uninsured in this age group in the region is 18.7% to 47.3%.

The percentage of the population enrolled in Medicaid is also very different between the United States and Texas, as Texas is one of 19 states that elected not to expand Medicaid. The percentage of the population enrolled in Medicaid in the U.S. is 26.9%, compared to 14.52% in Texas. The range in the region is 8.7% to 19%. The percentage of people who reported not being able to see a doctor due to cost ranged from 15.5% to 30% in the region. The averages for Texas and the U.S. were 19.1% and 14.3%, respectively. The median for the region was 20.1%, which is slightly higher than the Texas average and much higher than the U.S. average.

Table 2.1. Health Insurance and Health-Related Costs

County	Uninsured 0-18 yrs (%)	Uninsured 0-64 yrs (%)	Medicaid Enrollee (%)	Couldn't see a doctor due to cost (%)
Angelina County	14.4	25.1	16.6	25.0
Brazoria County	10.8	20.2	9.0	18.3
Chambers County	12.3	19.6	8.7	DSU
Galveston County	10.8	19.9	10.4	19.0
Hardin County	10.9	18.7	11.1	17.0
Jasper County	14.0	27.0	16.5	22.8
Jefferson County	11.0	23.8	16.2	20.3
Liberty County	14.0	26.1	15.4	19.8
Nacogdoches County	13.5	27.2	15.6	18.9
Newton County	13.2	39.4	15.6	DSU

Orange County	10.5	32.4	14.1	15.5
Polk County	16.0	47.3	15.8	28.1
Sabine County	14.7	42.3	14.3	DSU
San Augustine County	11.5	21.4	18.5	DSU
San Jacinto County	13.6	22.3	15.7	DSU
Shelby County	17.8	27.5	19.0	29.1
Tyler County	11.9	20.0	13.0	30.0
Regional Range and Median	10.5 – 17.8 13.2	18.7 – 47.3 25.1	8.7 – 19.0 15.6	15.5 – 30.0 20.1
Texas	12.7	24.8	14.5	19.1
United States	6.0	11.9	26.9	14.3

DSU=Data Statistically Unreliable (total number are too small to report and/or calculate a rate.)

Health Care Access and Infrastructure:

Twelve of the 17 counties are primary care health professional shortage areas (HPSAs), 11 are mental care HPSAs, and 9 are dental care HPSAs. All 17 counties are whole or partial medically underserved areas (MUAs). See *Appendix B* for a description of HPSAs and MUAs.

The rate of primary care physicians per 100,000 population in region ranges from 13.6/100,000 to 87.4/100,000. Only three counties in the region have a greater rate of primary care physicians by population than the state at 73.9/100,000 population. Mental health providers in the region range from 7.1/100,000 to 117.4/100,000 population. Only two counties in the region have a greater mental health providers rate than the state at 101.0/100,000 population.

Table 2.2. Health Care Access and Infrastructure

County	Primary Care HPSA Yes/No (Type)	Mental Care HPSA Yes/No	Dental Care HPSA Yes/No (Type)	MUA
Angelina County	Yes (Low Income)	Yes	Yes	Partial
Brazoria County	No	No	No	Yes
Chambers County	Yes	Yes	Yes	Yes
Galveston County	No	No	No	Yes
Hardin County	No	No	No	Yes
Jasper County	No	Yes	Yes	Yes
Jefferson County	No	No	Yes	Partial
Liberty County	Yes	No	No	Yes
Nacogdoches County	Yes (Low Income)	Yes	Yes (Low Income)	Yes
Newton County	Yes	Yes	Yes (Low Income)	Yes
Orange County	Yes	No	Yes	Yes
Polk County	Yes	Yes	No	Yes

Sabine County	Yes	Yes	No	Yes
San Augustine County	Yes	Yes	No	Yes
San Jacinto County	Yes	Yes	Yes	Yes
Shelby County	Yes	Yes	Yes	Yes
Tyler County	Yes	Yes	No	Yes
Total # of “Yes” counties	12	11	9	17

The rate of dentists per 100,000 population in the region ranges from 0 to 56.8/100,000. Only one county in the region has a greater proportion of dentists by population than the state at 53.3/100,000 population. Five of the seventeen counties have no specialty care providers. The rate of mid-level providers in the region ranges from 6.8/100,000 to 116.3/100,000. The range of active pharmacists spans 21.5/100,000 to 82.1/100,000 population.

Table 2.3. Health Services & Resources (rate per 100,000)

County	Primary Care Physicians	Specialty Care Providers	Mid-Level Providers	Dentists	Pharmacists	Mental Health Providers	Community Clinics (#)
Angelina County	82.8	103.8	86.1	41.0	81.6	117.4	0
Brazoria County	49.6	40.4	51.6	46.1	61.2	58.6	3
Chambers County	22.0	12.2	41.5	2.6	35.4	18.4	3
Galveston County	56.3	72.2	116.3	39.5	77.9	111.4	3
Hardin County	22.2	5.1	42.7	21.6	66.2	28.8	1
Jasper County	49.3	27.4	71.2	31.0	64.9	30.9	1
Jefferson County	75.2	136.9	113.7	56.8	82.1	97.5	2
Liberty County	34.9	15.7	33.7	25.6	49.4	17.9	0
Nacogdoches County	87.5	106.4	91.9	50.5	72.3	91.9	1
Newton County	27.7	0.0	13.9	0.0	21.5	7.1	0
Orange County	24.7	14.1	32.9	27.6	59.3	24.0	1
Polk County	63.7	26.7	49.3	34.7	51.1	45.6	0
Sabine County	17.4	0.0	43.5	38.6	67.6	9.7	0
San Augustine County	32.8	10.9	43.7	46.5	56.4	11.6	0
San Jacinto County	13.6	0.0	6.8	3.7	30.3	7.4	0
Shelby County	18.5	0.0	36.9	31.4	62.9	58.8	0
Tyler County	19.2	0.0	25.6	9.3	21.8	28.0	0
Regional Range and Median	13.6 – 87.5 32.8	0.0 – 136.9 14.1	6.8 – 116.3 43.5	0.0 – 56.8 31.4	21.5 – 82.1 61.2	7.1 – 117.4 28.8	0 – 3 0
Texas	73.9	n/a	n/a	53.3	n/a	101.0	--
United States	n/a	n/a	n/a	n/a	n/a	n/a	--

n/a=not available

<u>Behavioral and Environmental Influences on Health</u>

Health Behaviors:

There are several health challenges in this 17-county region. In addition to socioeconomics, education, and health care access influencing health outcomes, we know that health behaviors, the physical environment, and social environment also play a large role in health. Physical inactivity is higher in all 17 counties compared with Texas (24%). However, seven counties have lower physical inactivity rates than the U.S. (28%). The proportion of the population that reports physical inactivity in the region ranges from 25.2% to 32.7%, with a median of 29.5%. The percentage of the population that reports smoking in the region ranges from 13.8% to 18.8%, with a median of 16.8%. Only two counties in the region have lower rates than the state. The average in Texas and the U.S., as a whole, is 15% and 18% respectively. Excessive drinking in the region ranges from 13.2% to 19.7% of the population, with a median of 16.8%. The state and national averages are both 17%. Alcohol is involved in 33% and 31% of driving deaths in Texas and the U.S., respectively. The range for the region is 7% to 51%, with a median of 29%.

Table 2.4. Health Behaviors

County	Physical Inactivity (%)	Excessive Drinking (%)	Smokers (%)	Alcohol-Impaired Driving Deaths (%)
Angelina County	27.2	14.9	18.5	30
Brazoria County	25.2	17.5	13.8	34
Chambers County	27.3	19.7	14.5	21
Galveston County	27.2	17.1	14.6	35
Hardin County	32.7	18.8	15.1	28
Jasper County	31.2	16.0	17.3	38
Jefferson County	30.0	16.8	18.1	29
Liberty County	27.6	17.5	17.2	22
Nacogdoches County	25.5	16.1	17.8	20
Newton County	31.1	16.8	16.8	7
Orange County	29.4	18.3	15.8	26
Polk County	29.7	15.9	17.4	29
Sabine County	30.3	14.1	16.1	33
San Augustine County	29.5	13.2	17.6	37
San Jacinto County	30.6	16.3	15.7	51
Shelby County	27.8	15.2	18.8	28
Tyler County	30.8	17.6	15.9	12
Regional Range and Median	25.2 - 32.7 29.5	13.2 - 19.7 16.8	13.8 - 18.8 16.8	7 - 51 29
Texas Average (State Min/Max)	24.0 (16.0/35.0)	17.0 (12.0/23.0)	15.0 (12.0/21.0)	33 (0/75)
# counties worse than Texas	17	7	14	6

United States	28.0	17.0	18.0	31

Physical & Social Environment:

Food security and access to healthy foods are public health issues.

Table 2.5. Physical & Social Environment

County	Limited Access to Healthy Foods (%)	Access to Exercise Opportunities (%)	Food Environment Index [0 (bad)-10 (good)]	Violent Crime Rate (per 100,000)
Angelina County	13.23	70.29	5.3	348
Brazoria County	6.64	76.97	6.9	170
Chambers County	3.94	66.35	7.3	238
Galveston County	8.98	88.23	6.2	297
Hardin County	8.01	71.99	6.0	151
Jasper County	8.71	57.30	5.3	306
Jefferson County	10.59	70.11	4.6	652
Liberty County	6.20	46.63	6.2	422
Nacogdoches County	14.63	66.36	4.6	411
Newton County	9.98	10.09	4.8	43
Orange County	8.20	69.14	5.6	389
Polk County	13.14	68.60	5.3	211
Sabine County	12.57	78.39	4.4	212
San Augustine County	15.13	82.41	4.0	312
San Jacinto County	0.76	69.91	6.7	329
Shelby County	5.77	38.71	5.9	309
Tyler County	23.24	39.71	4.0	359
Regional Range and Median	0.76 – 23.24 8.98	10.09 – 88.23 69.14	4.0 – 7.3 5.3	43 – 652 309
Texas (State min/max)	9.00 (0.00/72.00)	84.00 (0.00/98.00)	6.4 (0.7/9.7)	422 (0/902)
# counties worse than Texas	8	16	14	1
United States	8.40	62.00	n/a	n/a

n/a=not available

In the Southeast Texas region, about half of the counties have limited access to healthy foods when compared with the state (9%), and more than half when compared with the U.S. (8.4%). Limited access to healthy foods ranges from 0.76% in San Jacinto County to 23.24% in Tyler County. Sixteen of the 17 counties have less access to opportunities to exercise compared to the state. In Texas as a whole, the percentage of people reporting access to opportunities to exercise was 84%. The regional range is 10.1% to 88.2%, with a median of 69.1%. All counties, except for two, have lower Food Environment Index

scores compared with Texas, with a regional range of 4.0 to 6.9. The median is 5.3. The Texas Food Environment Index score is 6.4. The violent crime rate ranged from 43/100,000 to 652/100,000 population. However, only Jefferson County had a higher violent crime rate than the state average (422/100,000 population).

Health Outcomes

Chronic Disease:

Obesity rates in the region range from 24.9% of the population to 36.9%, with a median of 32.6%. Only one county in the region has a lower percentage of the population that is obese when compared with Texas (28%). The percentage of the population with diabetes ranges from 9.1% to 15.8%, with a median of 11.8%. No counties in the region have rates lower than the national rate (9.3%), but five counties have rates lower than Texas (10.6%).

Table 2.6. Obesity and Diabetes

County	Obesity (%)	Diabetes (%)
Angelina County	33.6	12.4
Brazoria County	31.6	9.8
Chambers County	31.4	9.1
Galveston County	24.9	10.1
Hardin County	34.4	9.6
Jasper County	33	12.3
Jefferson County	36.9	12.5
Liberty County	28.7	10.8
Nacogdoches County	32.6	10.6
Newton County	30.5	11.8
Orange County	31.0	10.0
Polk County	33.5	12.5
Sabine County	28.8	14.3
San Augustine County	33.4	15.8
San Jacinto County	30.6	12.5
Shelby County	34.4	13.0
Tyler County	32.6	11.1
Regional Range and Median	24.9 – 36.9 32.6	9.1 – 15.8 11.8
Texas (State Min/Max)	28 (20.0/37.0)	10.6
# counties worse than Texas	16	11
United States	31.0	9.3

Self-reported Health:

In the region, the percentage of the population that self-reports being in poor or fair health ranges from 13.6% to 21.2%, compared to 20% and 19.5% in Texas and the U.S., respectively. The median for the region is 16.8%. The average number of physically unhealthy days reported per 30 days ranged from 3.0 to 4.1 per 30 days. The average days per 30 days in Texas was 3.5 and 3.9 in the U.S. The average number of mentally unhealthy days reported per 30 days ranged from 2.8 to 3.7 per 30 days. The average days per 30 days in Texas was 3.0 and 3.7 in the U.S.

Table 2.7. Self-Reported Health

County	Poor/Fair Health (%)	Physically Unhealthy Days (# days/30)	Mentally Unhealthy Days (# days/30)
Angelina County	20.3	3.9	3.4
Brazoria County	15.1	3.0	2.8
Chambers County	14.2	3.1	2.9
Galveston County	15.6	3.1	2.9
Hardin County	13.6	3.2	3.1
Jasper County	16.8	3.5	3.3
Jefferson County	19.5	3.7	3.3
Liberty County	18.4	3.7	3.3
Nacogdoches County	20.9	3.9	3.5
Newton County	16.1	3.5	3.2
Orange County	14.6	3.2	3.1
Polk County	18.7	3.7	3.3
Sabine County	17.1	3.7	3.4
San Augustine County	21.2	4.1	3.7
San Jacinto County	16.5	3.5	3.2
Shelby County	20.9	4.0	3.5
Tyler County	15.2	3.4	3.1
Regional Range and Median	13.6 – 21.2 16.8	3.0 – 4.1 3.5	2.8 – 3.7 3.3
Texas (State min/max)	20.0 (10.5/41.7)	3.5 (2.6/5.6)	3.0 (2.5/4.0)
# counties worse than Texas	4	8	14
United States	19.5	3.9	3.7

Communicable Disease:

Only three of the 17 counties in the region had AIDS rates higher than Texas. Rates ranged from 0 to 16.9/100,000. Rates in Texas and U.S. are 9.2/100,000 and 7.8/100,000 respectively. Numbers were too small to calculate a rate in 7 counties. Only one county had tuberculosis rates higher than the state or U.S. rate and only one county had varicella rates higher than the state or U.S. rate. All rates for pertussis were lower than state and national rates.

While most rates of sexually transmitted infections were below the state and national rates, some were higher. Three counties had higher Chlamydia rates; four counties had higher gonorrhea rates; and only one county had a higher syphilis rate.

Table 2.8. Communicable Disease (per 100,000 population)

County	AIDS	Pertussis	TB	Varicella	Chlamydia	Gonorrhea	Syphilis
Angelina County	DSU	8.9	DSU	DSU	515.4	152.5	DSU
Brazoria County	5.4	5.8	2.1	5.1	347.8	80.8	1.5
Chambers County	0	0	0	0	119.6	DSU	0.0
Galveston County	8.5	4.2	2.9	6.5	393.2	95.8	2.9
Hardin County	0	DSU	0	0	187.7	35.1	DSU
Jasper County	16.9	0.0	DSU	DSU	349.9	81.8	0.0
Jefferson County	16.2	DSU	3.2	DSU	477.7	195.8	7.1
Liberty County	10.1	0.0	DSU	DSU	317.8	43	0.0
Nacogdoches County	DSU	DSU	13.8	0	613.4	172.2	0.0
Newton County	DSU	0.0	0	DSU	151.5	68.8	0.0
Orange County	DSU	0	DSU	DSU	297.1	68.8	0.0
Polk County	DSU	DSU	0	12.7	231.4	44.6	0.0
Sabine County	DSU	DSU	0	DSU	325.9	45.3	0.0
San Augustine County	0.0	0	0	0	258.3	134.7	0.0
San Jacinto County	DSU	DSU	DSU	DSU	156.1	43.6	0.0
Shelby County	0.0	0	DSU	0	288.6	69.3	0.0
Tyler County	0.0	DSU	0	0	157.2	62.9	DSU
Regional Range and Median	0.0 – 16.9 2.7	0 – 8.9 0	0 – 13.8 0	0 – 12.7 0	119.6 – 613.4 297.1	35.1 – 195.8 69.1	0.0 – 7.1 0.0
Texas	9.2	15.1	4.6	7.1	473.1	125.2	5.6
# counties worse than Texas	3	0	1	1	3	4	1
United States	7.8	9.1	1.24	6.1	446.6	106.1	5.5

DSU=Data Statistically Unreliable (total number are too small to report and/or calculate a rate.)

Mortality and Cancer Incidence:

All-cause mortality rates were all higher than the state average except in one county (Jasper County). The state rate was 749.2/100,000 population. The regional rate ranged from 652.4/100,000 to 1,071.7/100,000. The national all-cause mortality rate was 821.5/100,000. The median all-cause mortality rate for the 17 counties was 874.1. Mortality rates due to diseases of the heart were high throughout most of the region. Rates ranged from 120.9/100,000 to 307.5/100,000. The state and national rates were 170.7/100,000 and 168.8/100,000, respectively. Mortality rates due to unintentional injuries (accidents) were also high in several counties. The state and national rates were 37.0/100,000 and 39.4/100,000. Regional rates ranged from 39.1 to 61.3/100,000. While a low cause of death overall, several counties had high mortality rates from drug overdose deaths. The regional rates ranged from 8/100,000 to 18.9/100,000 population. Texas and national rates for drug overdoses were 9/100,000 and 13.5/100,000, respectively. See *Appendices C and E* for more information on mortality rates.

Overall cancer incidence was higher in 12 of the 17 counties compared with Texas. The regional rate ranged from 338.8/100,000 to 511.9/100,000 population. The Texas rate was 410.2. See *Appendices C and E* for more information on cancer rates.

Table 2.9. Mortality: All-Cause (per 100,000 population)

County	All causes
Angelina County	853.9
Brazoria County	774.7
Chambers County	874.1
Galveston County	782.0
Hardin County	909.8
Jasper County	652.4
Jefferson County	867.4
Liberty County	1027.1
Nacogdoches County	853.5
Newton County	982.6
Orange County	988.8
Polk County	930.2
Sabine County	1071.7
San Augustine County	844.8
San Jacinto County	800.3
Shelby County	1008
Tyler County	913.4
Regional Range and Median	652.4 – 1071.7 874.1
Texas	749.2
# counties worse than Texas	16
United States	821.5

Table 2.10 Cancer Incidence: All Cancer (per 100,000)

County	All Cancer
Angelina County	475.7
Brazoria County	418.8
Chambers County	424.3
Galveston County	428.1
Hardin County	445.2
Jasper County	442.1
Jefferson County	433.4
Liberty County	409.2
Nacogdoches County	423.2
Newton County	338.8
Orange County	473.6
Polk County	511.9
Sabine County	430.7
San Augustine County	351.9
San Jacinto County	428.2
Shelby County	400.2
Tyler County	381.2
Regional Range and Median	338.8 – 511.9 428.1
Texas	410.2
# counties worse than Texas	12
United States	448.4

Birth Outcomes:

The percentage of births to teen mothers (<18 years old) range from 2.1% to 7.1% in the region. Percentage of births to teen mothers are higher than the state rate (3.2%) in five counties (about half of the counties do not have available data). Only two counties have rates lower than the national rate (2.4%). The percentage of pregnant women receiving prenatal care in the first trimester ranges from 51.6% to 70.9% in the region. Eleven of the 17 counties have a lower percentage of pregnant women receiving prenatal care in the first trimester than the state (62.5%). Only one county has a higher rate of women receiving prenatal care in the first trimester than that national average (69.4%). The counties in the region also have a greater percentage of pregnant women having pre-term births. Over half of the counties have a higher percentage than the state (10.3%) and all but two counties have rates higher than the U.S. (9.6%). These rates range from 9.2% to 11.8%, with a median of 10.9%. Approximately half of the counties have a higher percentage of low birth weight babies, compared to Texas (8.3%). The

percentage of low birth weight babies in the region counties ranges from 6.1% to 10.8%.

Table 2.11. Birth Outcomes

County	Births to Teen Mothers <18 (%)	Prenatal Care in First Trimester (%)	Low Birth Weight (%)	Pre-term Births (%)	Infant Mortality Rate
Angelina County	2.9	60.2	9	10.3	DSU
Brazoria County	2.1	63.6	8.8	11.2	DSU
Chambers County	3.8	68.0	10.8	11.8	DSU
Galveston County	2.2	62.1	8.4	11.8	5.9
Hardin County	DSU	70.9	8	10.6	DSU
Jasper County	DSU	65.2	9.3	11.6	DSU
Jefferson County	2.8	65.5	10.2	11.5	7.9
Liberty County	3.8	53.6	8.2	9.2	DSU
Nacogdoches County	4.9	55.1	6.2	9.9	DSU
Newton County	DSU	60.9	DSU	DSU	DSU
Orange County	3.7	65.8	10.7	10.6	DSU
Polk County	DSU	53.2	6.1	11.8	DSU
Sabine County	DSU	51.6	DSU	DSU	DSU
San Augustine County	7.1	56	9.1	DSU	DSU
San Jacinto County	DSU	55.8	7.7	9.9	DSU
Shelby County	DSU	54.7	6.1	11.3	DSU
Tyler County	DSU	61.4	DSU	9.3	DSU
Regional Range and Median	2.1 – 7.1 3.7	51.6 – 70.9 60.9	6.1 – 10.8 8.6	9.2 – 11.8 10.9	5.9 – 7.9 6.9
Texas	3.2	62.50%	8.3	10.3	5.8
# counties worse than Texas	5	11	8	9	2
United States	2.4	69.4	8.0	9.6	6.0

DSU=Data Statistically Unreliable (total number are too small to report and/or calculate a rate.)

3 Community Needs and Priorities Assessment

Southeast Texas Stakeholders

We conducted an **online survey of stakeholders within the catchment area, the region of Southeast Texas**. The stakeholder survey was emailed to 392 persons representing Community Mental Health Centers, health and hospital districts, public hospitals, private hospitals, Federally Qualified Health Clinics (FQHCs), county government officials, local health authorities, AgriLife Extension Services, and community non-profits within the 17 counties and southern Harris County. Email recipients were invited to take the survey to identify critical needs in their communities and were asked to forward the email with survey link to friends and colleagues who may also have been interested in completing the survey.

For our regional stakeholder online survey, 60 responses were received. These respondents represented individuals and organizations that served every county in the region. Further, respondents were from a diverse range of organizations. The following two figures present the distribution of responses based on geographic and sector representation across the region. Note that respondents could choose multiple responses to each question.

Figure 3.1. Counties Represented in Southeast Texas Regional Stakeholder Survey

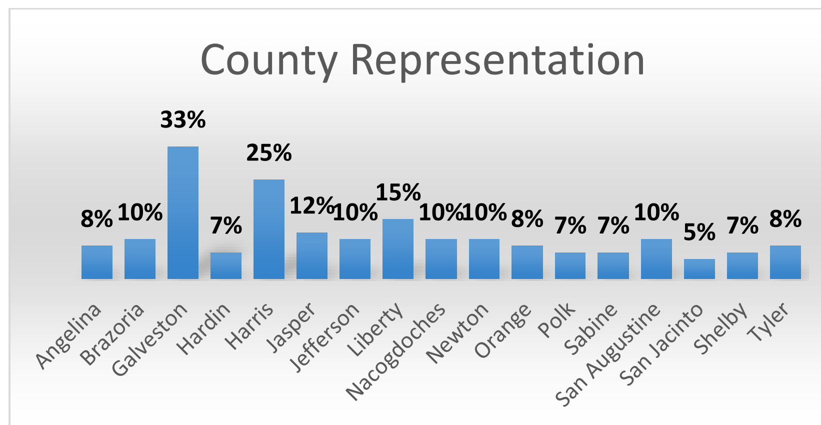
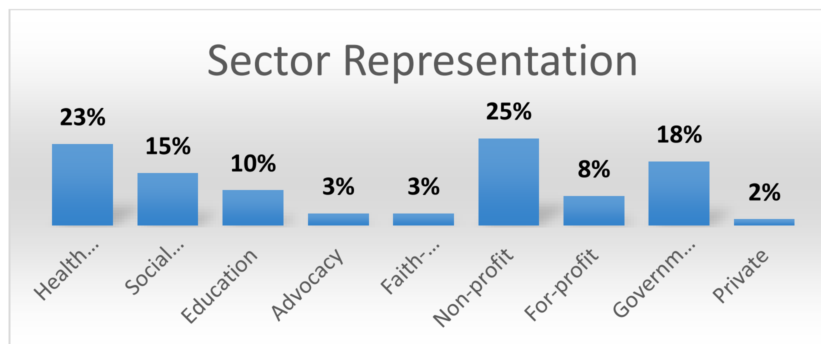


Figure 3.2. Sectors Represented in Southeast Texas Regional Stakeholders Survey



Types of organizations included: health services, social services, education, advocacy, faith-based, non-profit, for profit, governmental, and private.

Respondents were asked to rank a series of 40 common population health issues in communities in terms of how serious a problem it is in the communities they serve on a four-point scale from "Not a problem" to "Serious Problem." Table 3.1 presents the percentage of respondents indicating that a given issue is either a serious problem or somewhat of a problem. The concerns expressed by the respondents tend to parallel the secondary data sources as to key issues of concern—obesity, mental health, tobacco and substance abuse, access to services (including transportation) and socioeconomic issues.

Table 3.1. Percentage Reporting Specific Issues as Serious or Somewhat of a Problem, Southeast Texas Region Stakeholder Survey, 2016

Issue	Percentage Reporting Issue as a Serious Problem	Percentage Reporting Issue as a Serious or Somewhat of a Problem
Obesity	63%	98%
Access to mental health services	55%	90%
Poor or inconvenient transportation	55%	85%
Poverty	48%	93%
Lack of insurance / underinsured	48%	90%
Tobacco use	45%	87%
Illegal drug use	40%	90%
Prescription drug abuse	37%	90%
Access to services for older adults	33%	72%
Unemployment	32%	73%
Access to medical care	30%	68%
Alcohol abuse	28%	85%
Threat of natural disaster	27%	72%
Fumes, smells, smoke from industry	27%	53%
Domestic violence	25%	78%
Access to youth programs	25%	75%
Property crime	25%	72%
Access to dental care	23%	68%
Access to child care	22%	65%
Teen pregnancy	20%	73%
Access to after school programs	20%	67%
Growing number of older adults	20%	63%
Climate change	20%	42%
Hunger	18%	73%
Racism	18%	58%
Threat of man-made disaster	18%	52%

Issue	Percentage Reporting Issue as a Serious Problem	Percentage Reporting Issue as a Serious or Somewhat of a Problem
Access to prenatal care	17%	52%
Violent crime (other than domestic violence)	17%	52%
Dumping waste in empty lots or ditches	17%	48%
Access to affordable, healthy food	15%	68%
Stray cats or dogs	15%	38%
Fumes, smells and smoke from traffic	13%	32%
Population growth	12%	43%
Drinking water (odd look, odor, taste)	12%	28%
Access to safe places to exercise	8%	48%
Poor quality public schools	7%	47%
Population decline	5%	35%
Water pollution	3%	38%
Water quality	2%	13%
Graffiti	2%	13%

Sub-Regional Disparities in Southeast Texas

We compared responses from stakeholders who worked in or represented Galveston, Harris, and Brazoria counties (our larger counties area) (n=34) against stakeholders who did not work or represent these counties at all (our smaller counties area) (n=26). The figure and Table 3.2 below show the differences in the sub-regional responses. Strikingly, the most common serious issues in the larger counties did not necessarily appear in the smaller county responses. Further, the number of respondents reporting issues as being serious was often higher among those representing the smaller counties of the region compared to the larger counties.

Access to services of most types, including transportation to services, were identified as a serious problem more frequently in the smaller counties compared to the larger counties area. The exceptions were access to mental health services and access to child care, both of which were similar in the two sub-regions. Health behaviors and conditions, such as obesity, tobacco and substance abuse, were viewed as more serious problems in the smaller counties. Poverty and unemployment were also more likely to be labeled serious problems by stakeholders who serve the smaller counties. In contrast, respondents representing the larger counties were more likely to note environmental health issues as serious problems.

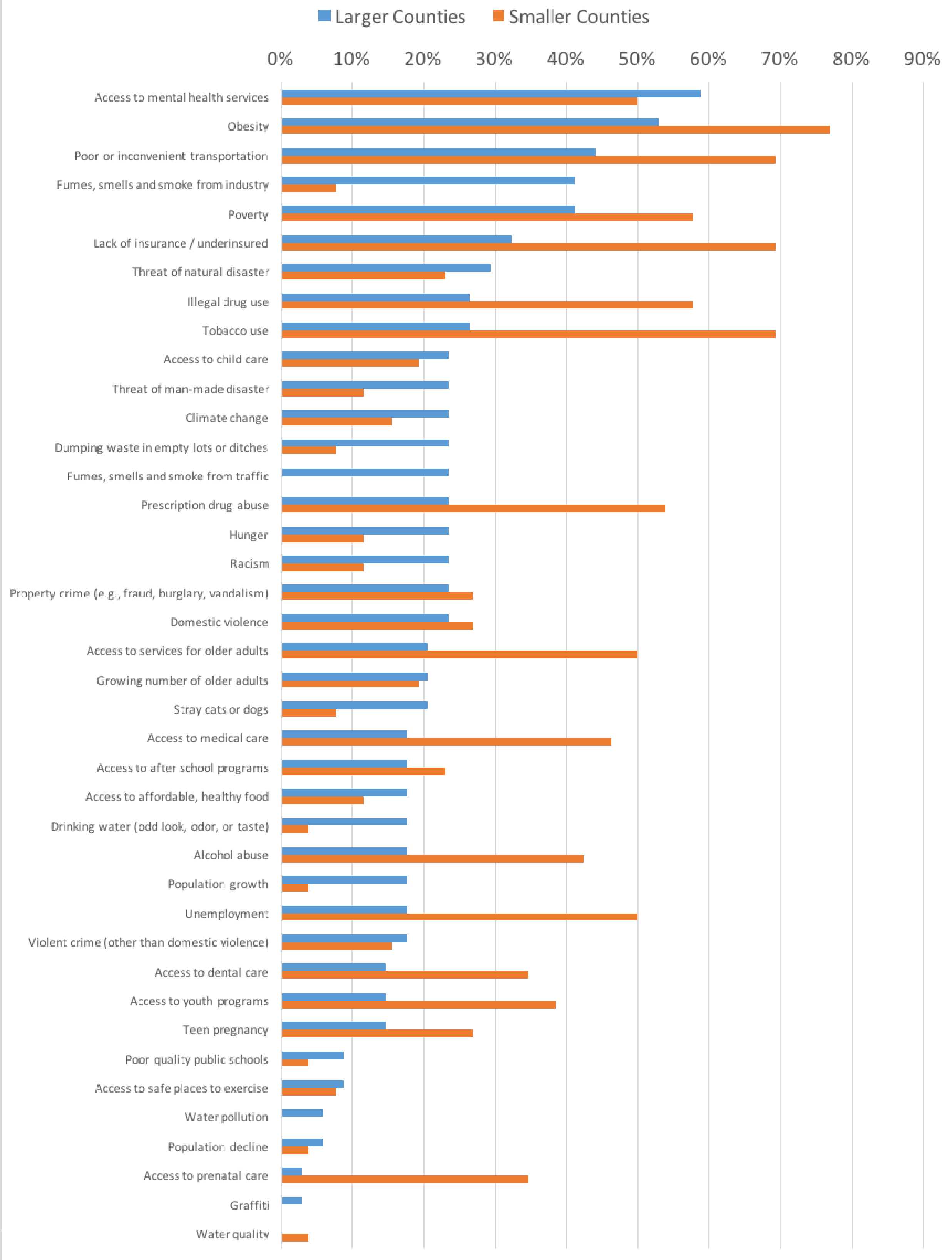

Percentage of Stakeholders Reporting Issue as a Serious Problem (by sub-region)
Larger Counties
Smaller Counties
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
Access to mental health services
Obesity
Poor or inconvenient transportation
Fumes, smells and smoke from industry
Poverty
Lack of insurance / underinsured
Threat of natural disaster
Illegal drug use
Tobacco use
Access to child care
Threat of man-made disaster
Climate change
Dumping waste in empty lots or ditches
Fumes, smells and smoke from traffic
Prescription drug abuse
Hunger
Racism
Property crime (e.g., fraud, burglary, vandalism)
Domestic violence
Access to services for older adults
Growing number of older adults
Stray cats or dogs
Access to medical care
Access to after school programs
Access to affordable, healthy food
Drinking water (odd look, odor, or taste)
Alcohol abuse
Population growth
Unemployment
Violent crime (other than domestic violence)
Access to dental care
Access to youth programs
Teen pregnancy
Poor quality public schools
Access to safe places to exercise
Water pollution
Population decline
Access to prenatal care
Graffiti
Water quality

Table 3.2 Rank Order of Most Serious Problems* by Larger Counties versus Smaller Counties

Larger Counties			Smaller Counties	
Issue	**% Serious**		**Issue**	**% Serious**
Access to mental health services	59%		Obesity	77%
Obesity	53%		Poor or inconvenient transportation	69%
Poor or inconvenient transportation	44%		Lack of insurance or underinsured	69%
Fumes, smells, smoke from industry	41%		Tobacco use	69%
Poverty	41%		Poverty	58%
Lack of insurance or underinsured	32%		Illegal drug use	58%
			Prescription drug abuse	54%
			Access to mental health services	50%
			Access to services for older adults	50%
			Unemployment	50%
			Access to medical care	46%
			Alcohol abuse	42%
			Access to youth programs	38%
			Access to dental care	35%
			Access to prenatal care	35%

*= Problems with at least 30% of respondents identifying it as a serious problem

Stakeholder Interviews

Select community stakeholders (n=38) participated in individual telephone interviews. Stakeholders were representative of various sectors, including local elected officials, AgriLife Extension, United Way organizations, public health, health care, and social services. These key stakeholders were asked to rank the top three health or health-related issues in the communities or counties they serve. They were then asked to describe the issue, indicate how they think the problem could be improved or addressed, identify resources available to address the issue, and list barriers to addressing the issue.

Stakeholder-Type	Frequency
Elected Officials (County Judges/ County Commissioners)	14
Health Care/Public Health	11
AgriLife Extension	10
Social Services	1
United Way	2
Total	38

All 17 counties were represented by the stakeholders. Eight interviewees represented the larger counties, 29 represented the 15 smaller counties, and one represented both larger and smaller counties. The top ranked community issues were:

1. Access to affordable health care services and insurance
2. Obesity
3. Diabetes
4. Mental health issues and services
5. Access to healthy food
6. Access to (public) transportation
7. Drug Use/Substance Abuse
8. Poverty
9. Other chronic disease (heart disease, cancer)
10. Affordable housing

Galveston County Residents

UTMB, though the Institute for Translational Science (Clinical and Translational Science Award (CTSA)), recently completed an **assessment of health needs for the Galveston County population**. This process consisted, in part, of a randomized household survey of residents, which included measures of a variety of health-related issues. While the sample size was limited, the results of the survey nonetheless support findings from other assessment efforts across the region. Key priority issues gleaned from this survey include needs related to mental health, obesity and determinants of obesity, tobacco use and substance abuse, as well as other social and environmental determinants of health.

Mental health was a repeated theme throughout this needs assessment. Over one quarter of respondents (25.7% reported that their mental health was not good for 5 or more of the previous 30 days. 16% reported rarely or never getting the social and emotional support they need. Even more striking were our findings related to adverse childhood experiences (ACEs), which are gaining increasing interest in public health research. Using standard measures and metrics developed at the Centers for Disease Control and Prevention, our survey estimated that 22.6% of our adult population may have experienced 4 or more ACEs during their childhood, compared to the national average of 14.3%.

Two-thirds of our sample was either obese or overweight. When examining related environmental determinants of obesity, addressing food insecurity, promoting leisure-time physical activity, and access to transportation emerged as potential opportunities for action. 21% of respondents indicated that all or most of their meals over the previous week were from fast-food or take-out restaurants. 10% reported eating 7 or fewer meals during the previous week. 16% reported skipping or reducing the size of a meal because of a lack of food or money for food. Among these 16%, half reported having to do this 5 or more days during the past month. Less than half (48%) reported engaging in vigorous or moderate physical activity more than once per week, which is still below current recommended levels. Finally, 38% reported that access to public transportation was a serious or somewhat serious of a problem in their community.

Table 3.3 below summarizes a list of priority concerns of our respondents, which parallel findings from our stakeholder survey and interviews.

Table 3.3 Percentage of Respondents Reporting Specific Issues as Serious or Somewhat of a Problem, Galveston County, 2016

Problem	Percentage of Respondents Indicating Serious or Somewhat of a Problem
Natural Disaster	42.5%
Public Transportation	37.9%
Illegal Drug Use	27.5%
Affordable Housing	27.0%
Unemployment	26.2%
Poverty	25.4%
Aging of the Population	25.4%
Access to Mental Health Care	22.6%
Alcohol Abuse	22.1%
Property Crime	21.5%
Climate Change	21.1%
Water Pollution	21.0%
Teen Pregnancy	20.2%

Port Arthur Disadvantaged Neighborhood

One additional study that we incorporated into our regional assessment was a survey conducted among a **vulnerable population living along the fence line in Port Arthur, Texas**. This study aimed to determine the cumulative impacts of various determinants of health on the health status of these residents, as well as their perceptions of their environment. Among other findings from this study, nearly one-quarter (24%) screened positive on a clinical screening tool used to identify those potentially at risk for suffering from post-traumatic stress disorder. Also, 33.3% (nearly twice the national average) reported smoking cigarettes daily.

4 Resources in the Community

Stakeholder Interviews

The community stakeholders interviewed identified existing local resources, including organizations, programs and coalitions that could help address the issues noted. These included:

- Several AgriLife Extension programs to address obesity, diabetes, and other chronic diseases
- Existing health coalitions, such as Active Angelina, Impact Lufkin, and Campaign 300 for Livingston/Polk County;
- Federally Qualified Health Centers, such as Gulf Coast Health Center, Coastal Health and Wellness, and Stephen F. Austin Community Health Network;
- Mental Health and Substance Abuse organizations, such as Gulf Coast Center (MHMR), Spindletop MHMR, Family Service Center, NAMI Gulf Coast, Burke Center, and South East Texas Council on Alcohol and Drug Abuse
- Hospitals and health districts, charity care organizations
- Transit programs
- Law enforcement
- United Ways
- YMCAs
- Area churches
- Stephen F. Austin School of Social Work
- Texas Association of Counties
- UTMB Regional Maternal and Child Health

Community Engagement and Partnerships at UTMB

Key community engagement resources at UTMB are described in more detail below and include: the Texas Medicaid 1115 Waiver project, the Texas Area Health Education Centers East program, the REACH (Research, Education, and Community Health Coalition) initiative, the Institute for Translational Science Community Engagement Experts, and the Center in Environmental Toxicology Community Outreach and Engagement Core.

UTMB anchors **Region 2 of the Texas Medicaid 1115 Waiver** project. Region 2 targets a coordinated system of care that seeks to advance the health of the population, improve the patient experience and utilize resources in a more efficient, effective and equitable manner. To achieve this transformation, the regional stakeholders developed four priority goals to address over the initial waiver period:

1. Improve the health of the region by expanding and coordinating access to patient-centered primary care and behavioral health care services that include health promotion and disease prevention.
2. Improve the health of the region by expanding and coordinating access to specialty care services and chronic disease management.
3. Improve the quality of patient care through a learning collaborative that promotes best practices and the development of innovative solutions.
4. Grow the health system resources for the region by expanding and enhancing training of the healthcare workforce at all levels of our future healthcare system.

The region contains one academic health center, three safety net hospitals, five Federally Qualified Health Centers (FQHCs), eight hospital districts, seven public health districts, 20 rural health clinics, four community centers (MHMR's) and 16 county indigent care programs. A list of participating partners is included in *Appendix F.*

Many regional projects target expansion of access to primary care and prevention services. The focus of these projects centers on developing medical homes, incorporating additional levels of providers (such as advanced practice nurses or community health workers), and co-locating physical and mental/behavioral health services. Education and training of future members of the healthcare workforce is also included in the proposed new models of care delivery. Projects aimed at chronic disease management include the development of chronic disease management registries and care transition programs. Technology-assisted services to expand access to specialist services and improve communications among providers are included in these efforts.

The **Texas Area Health Education Centers East program (Texas AHEC East)** began September 30, 1991. The program's service area encompasses 111 counties and serves over 14 million people in East Texas. The Texas AHEC East mission "Making Our Communities Healthier!" is achieved through community-based clinical experiences for health professions students, practice entry and support services for health professionals, health career preparation and promotion activities, and community health and wellness initiatives. We seek to improve health, especially for the underserved, by creating partnerships among community and academic organizations that link health care resources. Texas AHEC East is comprised of a program office at The University of Texas Medical Branch in Galveston and nine regional centers. The program currently has a staff of 45. Most regional centers are hosted by a community partner: Capital's host is Austin Community College; DFW's host is UT Southwestern Medical Center; North Central's host is Texas Woman's University; Northeast's host is UT Health Center at Tyler; Piney Woods' host is Stephen F. Austin State University; Victoria's host is Victoria College; and Waco's host is McLennan County Medical Education and Research Foundation. Coastal and Greater Houston are independent non-profits.

Research, Education, And Community Health Coalition (REACH)*:* REACH was established in 2014 to facilitate collaborative research and service efforts between Galveston County-area community leaders, policy makers, and UTMB scientists. Their rationale is that by eliminating silos and sharing information regularly, all Centers, Institutes, and groups can better address the needs of our communities without gaps and/or cultivating unnecessary redundancies, thus better leveraging time, funding, and efforts. To date, 23 UTMB Centers and Institutes are engaged in REACH, as are 39 community organizations. Membership is open and dynamic and includes broad-based, high-impact community participation, including public and mental health agencies, clinicians, policy makers from local governmental and quasi-governmental bodies, family service centers, cultural and faith-based organizations, and local schools and colleges. The REACH membership is highly enthusiastic about this opportunity for multi-directional communication and to actively participate in and drive research. Two intervention working groups have been initiated: one focused on developing a comprehensive community health needs assessment, and a second on developing a series of educational trainings related to community-based research for scientists, IRB boards, and community leaders. A list of community and academic members of REACH is included as *Appendix G*.

UTMB Institute for Translational Sciences: The Community Engagement experts (CEEX in the Institute for Translational Sciences ensure that stakeholder engagement is integrated across the spectrum of translational science, i.e., in leadership and governance, communications, implementation, research, and dissemination. The defined community includes: basic scientists, clinical investigators, health care providers, patients and their families, community health and social service organizations, policymakers, and members of the public with an interest in translational research. The geographic areas of interest include the Houston-Galveston metroplex, and through other partners in the Texas Regional CTSA Consortium, the other major metropolitan areas of the state. They have assisted Multidisciplinary Translation Teams (MTTs) with grant proposals, study designs, and methods; educated investigators and trainees in community engagement strategies and approaches; acted as liaison with potential community partners; and disseminated ITS science.

UTMB Center in Environmental Toxicology Community Outreach and Engagement Core: The Community Outreach and Engagement Core (COEC) serves as the nexus between and among the Center in Environmental Toxicology's stakeholders and target audiences, including scientists, community members and organizations, health care practitioners, and those engaged in policy-making related to environmental health. The COEC's mission is to translate and disseminate environmental health science for the communities served and to guide Center research through multidirectional communications with Center stakeholders. The ultimate goal is to improve individual and public health locally through their efforts by establishing and more broadly sharing community engagement best practices with their targeted stakeholders. To fulfill its mission, the COEC has established the infrastructure to enable ongoing, meaningful, multidirectional communication between networks of community partners and CET scientists to facilitate translation of Center science, increase environmental health literacy, and build relationships that will lead to research responsive to the communities' needs.

Population Health Projects at UTMB

We conducted an **internal UTMB survey on involvement with population health research and outreach activities** to gauge the current level of community involvement at our institution. We received reports on 41 unique projects targeting a range of health behaviors and health conditions. Of the 41 projects reported, 12 focused on clinical populations, 15 focused on community populations, and 14 incorporated both types of outreach. Only 3 projects had a primary education emphasis, whereas 22 were primarily research projects and 16 were practice projects. As noted, a range of problems were targeted with the most common emphases being: improving quality of care, reducing health disparities, addressing diabetes and obesity, and enhancing mental health and mental health care. Other issues addressed by multiple projects included: smoking, substance abuse, maternal and child health, infectious diseases, aging, cancer, cardiovascular disease, and health care access. Nutrition and physical activity interventions were common across many of the target areas. Most of the projects focused on improving clinical outcomes or behavioral metrics, with relatively fewer projects emphasizing service utilization measures. Across the projects, all demographic subgroups were served—including across age groups, racial and ethnic groups, and by gender. Inpatient, outpatient, and community populations were all targets of different projects.

Nearly all of the projects focused their efforts on Galveston County or the Galveston-Harris-Brazoria County region. Of the 41 reported projects, only two included other counties in our selected catchment area and four were focused on the state level.

5. Health Priorities

Across the various primary and secondary data sources, some key themes regarding health priorities emerged. This section summarizes data from Sections 2 and 3 to identify key health priorities. Throughout this section we compare our region and counties to the Texas average. We note that in identifying priorities it is the magnitude and the disparities that are compelling evidence for change. If the Texas average for a particular condition/problem is high then being better than the Texas average is not necessarily evidence that there is no problem in that county.

We use a **determinants of health framework** to categorize the health priorities identified. The four broad categories of determinants include: health behaviors, access to health and social services, physical and social environmental factors, and psychosocial stressors. We acknowledge that the four areas are interrelated. For example, psychosocial stressors or limited environmental resources can lead to poor health behaviors. Or, limited environmental resources can become a psychosocial stressor.

Health Behaviors

Obesity and, by extension, its determinants, including nutrition and physical activity, were among the highest priority problems in our review. Obesity rates ranged from 24.9 to 36.9 with median of 32.6% and 16 of the 17 counties had rates of obesity higher than the Texas rate of 28.0%. Rates of physical inactivity among population of the counties ranged from 25.2% to 32.7% with a median of 29.5%. All 17 counties were more sedentary than the Texas average of 24% of adults being physically inactive.

In our online stakeholder survey, 63% of respondents listed obesity as a serious problem and 98% considered obesity to be a serious or somewhat of a problem. The smaller counties expressed that obesity was a serious problem at a higher rate (77%) than did respondents from Galveston, Harris, and Brazoria counties (53%).

Concerns about obesity and access to healthy foods were common concerns in our targeted stakeholder interviews.

Tobacco and substance abuse, including alcohol, prescription, and illegal drug abuse were all identified as high prevalence, serious problems. Secondary data included information only on smoking and excessive drinking. The prevalence of smoking ranged from 13.8% to 18.8% in the region's counties with a median of 16.8%. The Texas average was 15.0%, below the national prevalence of 18.0%. In all, 14 of the counties had a higher prevalence of smoking than the state prevalence. The prevalence of excessive drinking ranged from 13.2% to 19.7% with a median of 16.8%, which was close to the Texas average of 17.0%.

In our online stakeholder survey, the percentage of respondents reporting the behavior as a serious problem was 45% for tobacco use, 40% for illegal drug use, 37% for prescription drug abuse, and 28% for alcohol abuse. Again, differences between the larger and smaller counties were dramatic. For all of these behaviors, respondents representing the smaller counties were twice as likely to report the behavior as a serious problem compared to respondents representing the larger counties. For example, the figures for tobacco use were 69% and 26% and the figures for prescription drug abuse were 54% and 24%.

In the targeted stakeholder interviews, drug use and substance abuse ranked among the most often cited problems.

Access to Services

Access to services, particularly mental health services, and including transportation to services was a recurrent theme in the primary and secondary data collection. The Southeast Texas region has high rates of being uninsured and many counties have relatively low levels of health care providers. The differences between Galveston and Brazoria counties (our larger counties) and the other counties as a group (our smaller counties) are marked.

The uninsured population under the age of 65 ranged from 18.7% to 47.3% in the region's counties. The median for the counties was 25.1%, near the Texas rate of 24.8% and much higher than the national rate of 11.9%.

Twelve of the 17 counties in the region have been designated primary care health professional shortage areas (HPSAs), 11 are mental care HPSAs, and 9 are dental care HPSAs. All 17 counties are wholly or partially designated as medically underserved areas (MUAs).

In our stakeholder survey, 55% of respondents listed access to mental health services as a serious problem, 30% listed access to medical care as a serious problem, and 23% identified access to dental care as a serious problem. The differences between Galveston, Harris, and Brazoria counties and the rest of the region were evident for access to medical and dental care. For the smaller counties, 46% reported medical care access as a serious problem and 35% reported dental care access as a serious problem. These percentages compare to 18% and 15% respectively for the larger counties. Similarly, 55% of respondents noted that poor or inconvenient transportation was a serious problem, with 69% in the smaller counties and 44% in the larger county area.

In our targeted stakeholder interviews, access to affordable health care services and access to mental health services were common concerns. Lack of transportation was also a frequently mentioned problem.

Psychosocial Stressors

Significant psychosocial stressors can result in poor mental health outcomes and are also associated with poor physical health outcomes. We note that secondary data on the prevalence of **mental health issues** and conditions was limited. Data on "unhealthy days," however, provides some information. The estimated number of physically unhealthy days per 30 days ranged from 3.0 to 4.1 across the counties. The median was 3.5, the same as the Texas average. In contrast, 14 counties in the region had higher rates of mentally unhealthy days than the Texas average of 3.0. The range of mentally unhealthy days across the region was 2.8 to 3.7 with a median of 3.3.

Poverty and unemployment are among the social determinants of health and these economic concerns were a repeated theme in our surveys and interviews. On an individual level, both poverty and unemployment represent significant psychosocial stressors. These concerns were validated by the secondary data collection efforts. Although significant portions of the populations of all counties are living in poverty or are unemployed, the economic concerns and needs were generally greater in the sub-region outside of the Houston metropolitan area (e.g., our smaller counties). The unemployment

rate for the Southeast Texas region ranged from 5.7% to 12.8% with a median value of 7.8%. At the same time, the unemployment rate for Texas was 5.1% and for the U.S. was 5.5%. The percentage of the population living below the poverty level ranged from 9.9% to 26.4% for the region compared to 17.2% for Texas and 14.8% for the U.S. The lowest levels of poverty were found in Brazoria, Chambers, Galveston, and Hardin counties.

In our stakeholder survey, 48% of respondents termed poverty a serious problem and 32% reported that unemployment was a serious problem. The respondents from the smaller counties were markedly more likely to identify economic concerns as serious problems—58% to 41% for poverty and 50% to 18% for unemployment.

Environmental Factors

In the online stakeholder survey, respondents in the larger counties were more likely to note **physical environmental factors**—such as fumes, smells, and smoke from industry—as problematic. They were also marginally more likely to term the threat of a natural disaster as a serious problem and markedly more likely to view the threat of a manmade disaster as a serious problem.

In the secondary data analysis, **limited access to healthy foods** ranged from 0.8% to 23.2% across the counties in the region, compared to Texas at 9.0%. Eight counties had more limited access to healthy foods than the Texas average. **Access to exercise opportunities** ranged from 10.1% to 88.2% with median of 69.1% compared to the Texas average of 84.0%. All counties in the region, except Galveston County, were worse than Texas average

Although obesity was a significant concern in our survey and interviews, the environmental determinants of obesity were less of a concern with only 15% considering access to affordable, healthy food a serious problem and 8% listing access to safe places to exercise as a serious problem. Sub-regional differences in access to affordable, healthy food and access to safe places to exercise were not marked. As noted above, however, access to affordable, healthy food was a commonly cited concern in our stakeholder interviews.

Top Priorities

Summarizing across this data, we identify four primary health related priorities:

- Obesity and its determinants
- Tobacco use
- Substance abuse
- Access to care*, especially mental health care

*Limited access to health care includes health care professional shortages, high rates of uninsured, and lack of transportation.

In the following sections, we distinguish between **population health management** (focused on clinical patients and covered lives as the population) and **population health improvement** (focused on a geographically defined population). In this report, the population health management efforts and plans focus primarily on UTMB patients and covered lives in the area of Galveston, Brazoria, and southern Harris counties where UTMB campuses are located. The population health improvement activities and plans refer to the entire identified catchment area. Population health management emphasizes chronic

disease management and health promotion for patients and potential patients. Population health improvement builds on that perspective by addressing the behavioral and environmental determinants of health outside of the clinical care system.

This distinction follows Washington, Coye, and Boulware (2016) in their description of the "three curves" of academic health care systems (AHCs). In the first curve, AHCs focus on "addressing the needs of individual patients for treatment of illness and disease." In the second curve, population health management, AHCs use "a global budget to manage the health of a specific population, generally those who seek care or may eventually seek care at a health system or institution." The third curve, population health improvement, aims "to enhance the health of all individuals in a population, often characterized by a specific city, zip code area, or specific geography" and requires "greater emphasis on factors and influences unrelated to health care." (AE Washington, MJ Coye, and LE Boulware. 2016. Academic Health Systems' Third Curve: Population Health Improvement. JAMA 325(5):459-460.) ***We note that the activities in the three curves are not mutually exclusive, but rather additive.***

6. Availability and Gaps in Technology and Infrastructure to Support Population Health at the Health Institution

The information in this section is based on an institutional scan completed by Mark Kirschbaum, Vice President and Chief Quality, Safety, and Clinical Information Officer, and Todd Leach, Vice President and Chief Information Officer.

UTMB has committed investments in **population health management** by prioritizing the deployment of and dedicating builders to the continued evolution of the population health tools in its Epic electronic medical record (EMR) system (including growth of patient cohort registries, provide benchmarking and stratification of populations, early interactive patient engagement tools, tracking of populations and evaluating success via patient outreach tracking and analytics).

For patients in our care, UTMB has deployed six electronic registries for chronic disease management, one for preventive health maintenance, and two specialty registries for an ACO-like contract and high frequency utilizers (aka hospital dependent) patients to enable providers to manage population health. Registries let providers keep track of patients' health status, guide timely preventive and chronic care services, enable patient outreach using evidence-based protocols and trigger alerts at the point of care.

UTMB is in the early stages of deploying an enterprise data warehouse, recognizing that it must treat our patient care data as a strategic asset. In conjunction with that investment, UTMB has begun to standardize on the use of an industry standard analytical tool – Cliq) – to integrate information across the care continuum, use analytics to drive interventions to maintain health and emphasize self-care for those with chronic disease, and to maximize the value proposition. To date, the warehouse includes source data from the EMR, patient satisfaction returns, costing data, and supply usage. UTMB's third party partner has significant clinical experience but will be learning with UTMB in the development of research-oriented tools and assets.

UTMB Discover is the name of the initiative that includes the enterprise data warehouse and analytical toolkit to handle the volumes of data generated throughout the institution. Discover includes the development of applications to aggregate data from all of UTMB's mission areas into one location where it can be connected, compared, and analyzed. The initiative has chartered steering and governance committees as well as research and clinical advisory groups.

Health Catalyst is UTMB's technological partner in the expansion of health information technology. In addition to resources already in use at the institution, some other clinical analytics and decision support tools would be useful in advancing population health management. The *Cohort Builder* allows users to identify specific populations of patients based on demographic and many clinical criteria (diagnosis, medication, lab, and orders details) and download information about these populations. Users can specify the level of detail they need for a cohort (patient-, episode- or encounter-centric data) and may deploy the tool in a patient de-identified configuration to facilitate study design and pre-IRB analysis. The *Community Care Advanced Application* focuses on providing data to help organizations review population health; compare their performance to national benchmarking standards for specific measures; identify opportunities for costs savings, and help practices track, monitor, and meet the needs of high-risk patients. Preventive and chronic care interventions and control measures for primary

care physicians are included. The *Population Explorer* analytics tool is intended for healthcare personnel responsible for tracking, reporting, and analyzing population metrics to improve care. The application facilitates surveillance and reporting of key outcomes such as length of stay, cost, and readmissions for selected populations; helps deliver insight into patient cohorts and improvement opportunities for clinical improvement projects; and supports leaders' ability to identify, prioritize, and report on quality improvement efforts.

In preparing for the **population health improvement** capability to influence the health of a geographic area, UTMB has many assets to leverage, including faculty expertise and strategic academic enterprise plans for advancing implementation and dissemination sciences. We conducted both primary and secondary data collection on the health priorities of the region for this report. Continuing to update both sets of data will require commitment from UTMB. The Discover initiative ultimately plans to integrate clinical data with community level data better integrating our efforts in population health management and population health improvement. This integration effort will also require commitment of funds to cover technology and infrastructure.

We rate the need for investment in technology as high for population health management efforts and as medium for population health improvement activities.

7. Availability and Gaps in the Population Health Workforce at the Health Institution

The **community stakeholders** interviewed noted both strengths and opportunities in terms of their organizations' workforce personnel. In general, they praised their staff as knowledgeable, hardworking, professional, and conscientious. Some stakeholders praised their staff for having strong skills in health education and promotion, disease prevention, and health and patient advocacy. Several stakeholders also noted that their organizations have built strong partnerships with community members and other organizations. In terms of gaps, or opportunities, a few of the stakeholders indicated that having personnel with an MPH degree or specific public health training would be helpful. They noted that most staff "learn on the job," but that having someone with a public health background would be a plus. Specific skills that were of interest were grant writing and program development. There were also suggestions for the addition of community health workers and more midlevel providers, as well as community liaisons to link community members to available resources.

In terms of the *distribution* of the health care and population health workforce, a larger problem facing the catchment area is the **shortage of health care professionals in specific counties**. As noted in section 2 and Tables 2.2 and 2.3, several of the counties targeted have low numbers of primary care physicians, mental health care providers, and other health care professionals. Specifically, 12 of the 17 counties are primary care health professional shortage areas (HPSAs) and 11 are mental care HPSAs. Further, again as noted earlier, all 17 counties are designated wholly or partially medically underserved areas (MUAs). This shortage of health professionals almost certainly translates into a shortage in the potential population health workforce in the region.

An important development regarding the distribution of health care professionals is UTMB's recent announcement of a **new affiliation with Baptist Hospitals** of Southeast Texas. The affiliation will build on the strengths of both organizations to provide the most advanced patient care for adult and pediatric patients in the Beaumont area and the surrounding region. The organizations will also explore using UTMB's extensive **telemedicine network** to provide specialty consultations.

Furthermore, UTMB has made a strong commitment to developing a population health management culture throughout the institution through the appointment of new leadership roles and the launch of the Best Care initiative. New appointments include a vice president for decision support and a vice president, chief medical and clinical innovation officer. Best Care emphasizes improved quality and efficiency of care and has taken a broad perspective on the determinants of health and health care utilization.

Related to **enhancing the population health workforce**, UTMB offers formal academic training programs, continuing education type programs for health professionals, and community capacity building training activities. These programs can develop and enhance professionals' skills in population health management and/or population health improvement.

The UTMB Department of Preventive Medicine and Community Health (PMCH) has **MPH and PhD programs** that are nationally accredited by the Council on Education for Public Health (CEPH). The accredited MPH program includes tracks in both epidemiology and biostatistics. The accredited PhD programs offer degrees in either Population Health Sciences or Rehabilitation Sciences. PMCH also

offers a Clinical Science MS and PhD program that trains clinical investigators and health services researchers. These graduate degree programs are offered as stand-alone programs or through dual degree programs such as the MD-MPH, the MD-PhD, and the PhD-MPH.

The **UTMB School of Medicine** offers several special tracks that are training MD students in areas of population health—the Public Health track, the Rural Health track, the Bilingual Health track, and the Global Health track. Medical students enrolled in these recognized tracks complete a series of five or six elective blocks practicing in community settings and in didactic courses emphasizing aspects of community health. MD students not enrolled in the tracks may also elect to take these month-long courses and get exposure to public health, primary care, and population health. The **UTMB School of Nursing** and the **UTMB School of Health Professions** also have community-based training requirements and electives experiences.

The **East Texas Area Health Education Center** is active in providing training to health professionals throughout the region it serves, including the catchment area defined for this project. A particular emphasis in recent training programs has been health literacy.

Community partner training and community capacity building are foci of the community engagement groups described in the resource section—**the Research, Education, and Community Health Coalition (REACH), the Institute for Translational Science Community Engagement Experts (ITS-CEEX), and the Center in Environmental Toxicology Community Outreach and Engagement Core (CET-COEC)—**and of the **Region 2 Medicaid 1115 Waiver initiative.** For example, REACH recently held a workshop for community partners in which the NIH/NIEHS's Dr. Christi Drew came to Galveston to work with faculty, trainees, and community organizations on developing effective planning and evaluation tools. Furthermore, learning collaboratives have been a key tool for partner development within the Region 2 Medicaid 1115 Waiver initiative. All performing providers have been encouraged to participate in the learning collaborative activities on Preventable 30-Day Readmissions and on Integration of Behavioral Health and Primary Care. These collaboratives are designed to facilitate sharing best practices, lessons learned, challenges, solutions, and results. Individuals have participated by posting and/or accessing resources online and attending in-person and/or web events.

Faculty, staff, and students participating in these formal and informal training programs are also available to participate in the proposed population health activities. In fact, as evidenced by the results of the internal survey reported in a previous section, many UTMB faculty, staff, and trainees **are already involved in population health** research, practice, and education activities. The survey and the descriptions in the resource section also make clear that UTMB groups have established a number of productive partnerships in the catchment area, especially in the Galveston-Brazoria-Harris County area.

As an additional example, UTMB personnel and many community partners are active in the **Texas Public Health Association (TPHA).** TPHA represents public health professionals from public, private and community-based organizations at all career stages from entry through retirement and across multiple disciplines such as environmental health, public health nursing, health administration and community health education. A primary goal of TPHA is to provide opportunities for enhancing learning, skills and practice. The Department of Preventive Medicine and Community Health organizes a pre-conference workshop yearly at the TPHA Annual Education Conference for the purpose of public health workforce development. Past workshops include: Border Public Health: Training a Competent Workforce; The Role

of Patient Centered Outcomes Research in Public Health; Community Health Improvement Planning; and Public Health and Academic Partnerships.

8. Assessment of Additional Needs

A need for more financial resources was the chief priority named by community stakeholders and UTMB participants in this plan. Resources are needed to deliver clinical care to more patients, including those that are uninsured or underinsured. Resources are needed to deliver health promotion programs. Resources are needed to develop healthier environments. Resources are needed to address the health priority areas we identified—obesity, tobacco use, substance abuse, and access to care. Resources are needed to pay for staff, materials, and services.

In the current climate, additional needs are only one concern. Maintaining current levels of funding is crucial. Our population health management and population health improvement activities can be impactful in the region, but they need to maintain or increase funding. Activities within the Galveston, Brazoria, and southern Harris counties area are most secure with well-established community-academic partnerships. The remaining part of the region, however, exhibited the greatest need and UTMB is not as well positioned to serve that region. The UTMB entities with the biggest role in that area are the Medicaid 1115 Waiver program and the East Texas AHEC. The future of funding for the Waiver program is uncertain. If that innovative program is phased out, the participating partners and providers will need additional resources to sustain clinical delivery and health promotion programs currently funded through the Waiver.

All of the UTMB groups participating in this plan—Medicaid 1115 Waiver, East Texas AHEC, Health System, Health Policy and Legislative Affairs, and Preventive Medicine and Community Health—expressed a need for more staff to better serve the region of Southeast Texas. Our proposed plan (next section) relies on developing more community-academic partnerships in the region by extending the REACH model, leveraging existing partnerships in the Waiver and AHEC programs, and increasing the number of student internships and practice experiences in the region. Following this plan would require, at a minimum, four new staff positions including two program coordinators, a data analyst/program evaluator, and staff support. **Cost for these new positions for salary and benefits would be an estimated $375,000** annually. Furthermore, faculty and staff involved in the current efforts are paid to handle specific duties. Some of the REACH work is grant funded to serve the Galveston County area explicitly. Allocating time for current personnel to serve in the region would be an additional cost to the institution.

The **community stakeholders** interviewed were asked to identify strategies and solutions for the health related problems they listed. A call for additional **financial resources** was the most common response. Concerns about budget cuts were expressed. Additional suggestions included:

- Partnership building and better coordination across agencies and organizations in the communities
- Doing more to reach out to Latino populations
- Supply grant writing expertise to community organizations and agencies
- More innovation in thinking about the seemingly intractable problems (e.g., obesity, substance abuse, uninsured rate)
- Changing the culture of health and involving a broader group of community leaders in initiating change
- Medicaid expansion in Texas

To the extent possible in our proposed plan, we aim to address the suggestions made by the community stakeholders with existing, hopefully stable, resources. The first five bullet points can be addressed through enhanced and active community-academic partnerships. The final bullet point—Medicaid expansion—is beyond the scope of the planned activities.

9. Plan and Strategy to Implement Population Health

In describing our Population Health Strategy, we focus on plans for population health improvement. Our population health management activities have been briefly addressed in previous sections. We also discuss the possibility of integrating the two sets of activities more fully Currently, UTMB primarily serves the larger counties in our catchment area, both through health system activities and population health related research, education, and outreach. The Medicaid 1115 Waiver group and East Texas AHEC are active in the smaller county region of the catchment area. The plan discussed in this section is heavily dependent on the availability of resources. Cuts to current levels of institutional funding would necessitate scaling back on plans.

We identified four priority health related concerns—obesity, tobacco use, substance abuse, and access to care. The first three priorities are prevalent and problematic health behaviors and the last is a health system issue. Access to care is the least amenable to our population health improvement efforts. An approach to addressing access to care must be multi-pronged and attend to high rates of uninsured and underinsured populations, shortages of health care professionals in some areas, and poor transportation services in some areas. The development of new UTMB clinical partnerships in the region should help address health care professional shortages to some extent. Community-academic partnerships and population health improvement activities may be used to target transportation services. Rather than target specific health priorities, our proposed strategy is to develop a system that can support addressing multiple health behaviors and environmental factors depending upon community identified needs. The population health improvement activities we propose can most readily focus on primordial, primary, and secondary prevention of disease. Access to care issues and population health management activities are more focused on secondary and tertiary prevention and treatment of disease.

The participants in the current project have evaluated population health improvement readiness at UTMB and make the following recommendations:

- Transition the informal Population Health Strategic Plan Advisory Committee into a formal Population Health Improvement Steering Committee.
- Focus initial efforts on expanding community partnerships throughout the region, including building on Region 2 Medicaid 1115 Waiver partnerships.
- Plan for community capacity building workshops and outreach throughout the region by expanding the REACH community-academic model for partnerships beyond the Galveston County area.
- Leverage our educational and student resources to set up population health practice opportunities with community partners across the region.
- Implement health behavior and health environment change interventions in collaboration with community partners in the region.

The logic model for implementing and evaluating these recommendations is depicted on the following page.

UTMB *Population Health Improvement* Program Logic Model

Inputs	Outputs		Outcomes -- Impact		
	Activities	*Participation*	*Short*	*Medium*	*Long*
Potential Community Partners Community Organizations AgriLife Extension United Ways Local Health Authorities Regional Health Districts County and Local Officials **Community-Academic Partnerships** REACH **University of Texas Medical Branch (UTMB)** Region 2 Medicaid 1115 Waiver Program Department of Preventive Medicine & Community Health Institute for Translational Science Community Engagement Experts East Texas Area Health Education Center (AHEC) Center for Environmental Toxicology Community Engagement Resource Health Policy and Legislative Affairs	Form Population Health Improvement Steering Committee at UTMB. Expand community partnerships in region, by leveraging Medicaid Waiver and AHEC existing partnerships and extending the REACH model. Leverage student and educational resources to expand practice opportunities in the region. Plan for community capacity building efforts. Implement health behavior and health environment change programs with partnerships.	Community Organizations UTMB Centers, Institutes, Departments, Programs Community-Academic Partnerships	**Build Community Partnerships** (number of partnerships established or maintained)	**Build Community Capacity** (number of workshops held, number of student projects completed) **Promote Healthy Environments in the Region** (county level data on food environment index, access to exercise opportunities) **Improve Health Behaviors in the Population** (county level data on obesity, physical inactivity, smoking, excessive drinking)	**Improve Population Health Outcomes** (county level data on all cause mortality, cause specific mortality, diabetes prevalence, cancer incidence)

Inputs to the logic model include potential community partners, community-academic partnerships, and various UTMB centers, institutes, departments, and programs. These entities will participate in a range of activities to produce specific **outputs**. Short-, medium-, and long-term **outcomes** and impacts are identified.

The first activity proposed is to task a formal **Population Health Improvement Steering Committee** with guiding the other proposed activities and holding accountability for productivity. Committee membership should include representatives of both the health system and the academic enterprise along with representatives of the key departments and programs.

The second activity proposed is to **expand community partnerships** in the region by **leveraging Medicaid 1115 Waiver and East Texas AHEC existing partnerships and extending the REACH model**. All three of these groups are briefly described in the resource section. Here we provide additional information on the REACH working model. The REACH Coalition utilizes a process called "Offer-Ask" to facilitate brokering relationships among partners, with particular focus on bridging new partnerships between academic and community partners. The process offers a public forum for partners to 1) express any resources, expertise, etc. they have that may be of benefit to other partners and 2) express wanted resources, expertise, etc. that the partner may be needing. For example, one partner may "offer" that they have a cohort of students that require volunteer hours for meeting their degree requirements, while another partner may counter with an "ask" that they require support in developing a data entry and management system for their programmatic evaluation activities. This example demonstrates how a relationship could be bridged between the two partners for mutual benefit. In less than 18 months, this offer-ask process has catalyzed dozens of such relationships among REACH coalition partners. The coalition engages community leaders and UTMB scientists to build academic-community partnerships, inform research development and implementation across the translational spectrum from basic science to public health, and impact community health and wellness by disseminating best practices. The "offer and ask" mechanism is available to all members and has been an excellent way to build partnerships.

These examples lead to the third proposed activity, **leveraging student and educational resources** to expand practice opportunities in the region. For example, the Department of Preventive Medicine and Community health offers MPH practice experiences in which students must work 160 hours on a public health practice project. Through the REACH model, some of these students have been paired with member asks. In the past year, we have partnered seven students with five different community partners (Galveston County Food Bank, Galveston County Mutual Assistance Program, Galveston Urban Ministries, ADA House, and St. Vincent's House). Students enrolled in the practice experience receive professional mentoring, but also complete projects that contribute to the mission of the hosting site. Practice experiences are with a variety of community-based organizations that seek to improve the health and quality of life of residents in Galveston County and the surrounding area, including governmental public health agencies and non-profit organizations. As the public health program expands, faculty and staff will seek to develop new relationships beyond the Galveston County and south Harris County region. This expansion can and should include the broader 17-county catchment area for this proposal. In addition to the public health practice experience, the MPH program incorporates community-based, skill-building projects into coursework through requests from community organizations. Examples of these projects include a Galveston island community assessment project report requested by a local foundation, a nonprofit organization evaluation guide requested by the United Way, and a nonprofit organization disaster preparedness planning project requested by a local organization. Educational programs in the School of Medicine, School Nursing, and School of Health Professions all offer community-based electives and experiences as well.

The new partnerships should produce new "asks" of UTMB and the participating faculty, staff, and students. These "asks" should result in **planning for community capacity building** efforts, our fourth proposed activity. For example, in the stakeholder interviews that were conducted, interviewees noted a need for assistance with grant writing. This

suggestion is an example of an “ask” for which UTMB participants could “offer” to hold a grant writing workshop or provide one-on-one expertise to assist with a specific grant call. Stakeholders also suggested more partnership building and better coordination across organizations. Extending the REACH model into the catchment area could also help build capacity in developing and maintaining partnerships.

Expanding partnerships and extending the REACH model should result in enhanced capacity to **implement health behavior and health environment change programs**. We assume that community preferences will be to address the priorities identified in the stakeholder survey and interviews—obesity and its determinants, tobacco use, and substance abuse (including alcohol, illicit, and prescription drug abuse).

The proposed short-term outcome is to build community partnerships. The medium-term outcomes are to build community capacity, promote healthy environments, and improve health behaviors. The long-term outcome is to improve population health in the region. Measures for these outcomes are listed in the logic model.

We also believe it will be important to better **integrate our population health management and population health improvement efforts**. As noted in an earlier section, the three curves of academic health centers—sick care for patients, population health management for potential patients, and population health improvement for geographic populations—are additive, not mutually exclusive. The Essential Hospitals Institute recently proposed a “road map to **community-integrated health care**.” In the table on the following page, we list the operational objectives, specific strategies, and strategic steps in that road map. We also briefly assess the current status of UTMB activities. We determine that UTMB has multiple population health management and population health improvement activities underway and in development. We have made limited progress, however, on integrating those sets of activities. The Essential Hospitals Institute work was funded by the Robert Wood Johnson Foundation and focuses on building a culture of health, assembling a range of needed resources, and implementing community-integrated care. An environmental scan was conducted, members of the Institute were surveyed, and key informant interviews were held. A copy of the survey instrument is available and during spring 2017 UTMB will complete the survey and assess where our institution stands compared to similar institutions. Essential hospitals are “those that care for the most vulnerable and often face pressing resource constraints.” Part of UTMB’s patient population includes those facing resource constraints.

The concept of community-integrated care comes from a model proposed by Halfon and colleagues in a 2014 *Health Affairs* article. (Halfon, N, Long, P, Chang, DI, Hester, J, Inkelas, M, & Rodgers, A. 2014. Applying a 3.0 Transformation Framework to Guide Large-Scale Health System Reform. *Health Affairs* 33(11):2003-2011.) The “three operating systems” of health care parallel, to an extent, the “three curves” described earlier. The first era (1.0) was a sick care system focused on acute care and infectious diseases. The second era (2.0) is a coordinated health care system characterized by patient-centered care and the management of chronic conditions. The third era (3.0) is a community-integrated health system focused on population and community health outcomes for a geographically defined population. The focus includes attention to the social determinants of health, those determinants beyond individual health behaviors and the traditional health care system. The development of a fully community-integrated health system remains aspirational for us, but elements of the “road map” can guide us in better integrating our population health management and population health improvement efforts in the region of Southeast Texas.

A Road Map to Community-Integrated Health Care			
Operational Objectives	*Specific Strategies*	*Strategic Steps*	*Status of UTMB Activities*
Build a foundation	Commit to population health	Define a population health approach	PHM strategy development underway.
		Plan and invest strategically	PHM strategy development underway.
	Assess hospital readiness and community need	Measure hospital readiness	To be completed Spring 2017.
		Assess and understand community needs	Completed Fall 2016. To be updated bienually.
Assemble and align essential resources	Develop workforce capacity	Designate and hire appropriate staff	Some PHM and PHI staff designated. Additional positions under discussion.
		Educate within and beyond hospital walls	PHM and PHI ongoing, but not integrated.
	Engage in multisector partnerships	Identify and engage partners	PHI ongoing.
		Sustain productive partnerships	PHI ongoing.
		Participate in larger networks and coalitions	PHI ongoing.
	Implement appropriate HIT systems and analysis	Pursue more robust HIT systems	PHM ongoing.
		Incorporate social determinants into screening and HIT	PHM under discussion.
		Leverage data as a community asset	Requires coordination of PHM and PHI.
		Link hospital and community data	Requires coordination of PHM and PHI.
		Conduct multilevel analysis for target populations	Requires coordination of PHM and PHI.
	Establish sustainable funding	Demonstrate value	PHM strategy development underway.
		Explore funding as a shared resource among partners	PHM strategy development underway.
		Adapt to changing payment landscape	PHM strategy development underway.
Implement community-integrated health care	Systematically adapt and react to community needs	Actively engage the community	Requires coordination of PHM and PHI.
		Initiate population-focused strategies	Requires coordination of PHM and PHI.
		Develop plans for sustainability	Requires coordination of PHM and PHI.

Ramiah, K, Schrag, J, Susman, K, Roberson, B, & Siegel, B. 2016. *Population Health at Essential Hospitals: A Road Map to Community-Integrated Care.* Essential Hospitals Institute, 9 pp.

PHM = Population Health Management
PHI = Population Health Improvement

10.Environmental Impact Assessment

All parties interested in population health in the region of Southeast Texas likely can agree that improvement in health and health related indicators requires coordinated action. There are numerous health providers and local organizations already working to improve health and quality of life in the region. These individual efforts should result in some improvements. More marked achievements appear to be possible through coordinated efforts, including those proposed by UTMB. One concern, however, is raising false expectations for dramatic improvements. The four health related priorities identified—obesity, tobacco use, substance abuse, and access to care—are complex problems and can be slow to change. UTMB can contribute primarily through developing and maintaining partnerships throughout the region helping to build community capacity and promote health behavior and health environment change.