RHP5 Community Needs Assessment August 31, 2012

INTRODUCTION

This document serves as the Community Needs Assessment (CNA) for Region 5 of the State of Texas 1115 waiver. It contains referenced data from many sources including the 2011 Community Health Report, Valley Baptist Health System, Prepared by PRC (Professional Research Consultants, Omaha Nebraska) using random land-line telephone interviews, published weighted data from the University of Texas School of Public Health Regional Campus in Brownsville directly collected from randomly selected community participants, hospitals in the region, Federally Qualified Clinics and state and national sources. The purpose is to provide baseline and background data for preparation of the Regional Health Plan for Region 5 (RHP5) with the ultimate goal of taking opportunity afforded by the 1115 waiver Delivery System Reform Incentive Plan (DSRIP).This plan is designed to address many of the problems of health disparities and inequalities in the delivery of health services, particularly to those who receive Medicaid and Medicare services.

EXECUTIVE SUMMARY

The major health service needs identified in this assessment are supported by existing data and by data from a set of focus groups held by an independent consultant (PRC).[1] The issues are rooted in extreme levels of economic and health disparities and the unprecedented epidemics of chronic disease (particularly diabetes and related chronic conditions), fueled by high levels of adult and childhood obesity. The situation is exacerbated by low levels of health insurance and access to health services, including behavioral health, that would identify individuals with or at risk for chronic condition and get them into appropriate programs.

- **Sociodemographics:** The population of the RHP5 has increased by 29% since 2000 to 1.26 million in 2010, and is projected to grow to 1.6 million by 2020. Overall about 90% are Hispanic and the population is relatively young. The percent without high school education ranges from 25% to 37% with 9.9 average years of education. Median family income ranges from $27,000 to $34,500; about 50% of the Texas and US median. Forty percent of all families live below the federal poverty line, twice the rate for Texas. Unemployment ranges from 12 to 17%. Eighty percent live in urban and suburban settings, many in 'colonias' which are informal settlements with mostly substandard housing and poor infrastructure.
- **Access to health care**: In a random dialing landline telephone survey (RDLTS), 60% reported having health insurance and those who had, were more likely to obtain preventive services. However, this survey excludes the poorest regional residents who do not have access to landline telephones; do not carry health insurance; and generally lack easy access to health care services (other than hospital emergency rooms). But in a large (N> 2000) randomly selected household survey (Cameron County Hispanic Cohort, CCHC) only 31% reported health insurance, of whom only 12% had private insurance. However neither employment nor insurance guaranteed diagnosis or treatment of the major chronic diseases. Focus group studies show that fear and other barriers are also deterrents to obtaining diagnosis and treatment of chronic disease, particularly diabetes.
- **Health Service Infrastructure and environment:** RHP5 is underserved in numbers and range of health services. There are 1,378 physicians, of whom 728 provide primary care. There are 103 direct care physicians and 54.6 primary care physicians/100K population: 40% and 20% respectively less than the Texas average. Family physicians are half the average for Texas (2.9/100,000). Licensed vocational nurses are about the rate for Texas, but registered nurses are 30% fewer, and nurse practitioners are half. Community health workers at 18.1/100,000 are higher than Texas and in general, reflective of the longstanding role of 'promotoras' in south Texas. Certain areas of special concern are psychiatrists, 2.8 /100K; 40% of the very low Texas level of 6.8 /100K. Second to this are dentists at 21/100K; half the rate in Texas. There are no public hospitals in the region. Hospitals range in size from 49 beds to over 500 beds. Many are full service hospitals. There are no level I or II trauma units. There are three federally qualified Clinics at several sites along the RHP5, providing the major outpatient safety net for the poor and uninsured. Many residents cross to Mexico for drugs and medical care.
- **Health education and preventive services:** In the (RDLTS), 47% obtained health information from their doctor; higher than the 43% nationally, 19% from the internet, almost identical to the US rate.[1]
- **Chronic Diseases:** Non-communicable diseases (NCDs), mainly chronic diseases, have reached pandemic proportions and are considered to be the greatest threat to the global economy and health at this time, with a total predicted cost by 2030 of $47 trillion.[2] The leading NCDs are mostly obesity driven, particularly diabetes and cardiovascular diseases; the leading health concerns of the RHP5.[3;4]

  - *Diabetes and Obesity*:

    - **RHP5 has 31%(388,000) of adults with diabetes, over half (197,000) undiagnosed, and 56% (216,500) untreated. Diabetes is responsible for 56% of hospital admissions for CVD and 54% of sepsis.**

    Diabetes and obesity are at the root of many of the chronic conditions dominating RHP5 and therefore top of the list of needs. Self-reported obesity approaches 35% but measured obesity in the Cameron County Hispanic Cohort (CCHC: consisting of over 2,000 adults randomly recruited in the community)

is 49%.[4;5] Disturbingly, though self-reported diabetes is 13.7% objectively measured diabetes in adults over 18 years is more than twice at 30.7% and half are untreated, leaving a very large pool of undiagnosed as well as untreated people.[4] The costs for these two conditions alone runs into the hundreds of millions of dollars for RHP5. Underlying diabetes is present in over 50% of hospital admissions in RHP5 for serious conditions.[1] The RHP5 cost in lost wages alone from diabetes is $227 million a year.[6]

- *Cardiovascular diseases*
  - **RHP5 has 401,000 adults with hypertension, 62,000 undiagnosed and 200,400 untreated**

    The reported death rate from acute cardiovascular diseases (CVD) is lower in RHP5 compared to Texas and the nation.[7] However, among the top diseases resulting in hospitalization in RHP5 is heart failure (HF), which is more pervasive and diagnosed late in this population.[8;9] The most effectively addressed cardiovascular problem encountered was hypertension.[4]

- *Cholesterol*:
  - **RHP5 has 48% of adults with elevated cholesterol, 310,000 undiagnosed & 85% untreated**.

    Eighty-seven percent of residents surveyed by RDLTS said they had had their cholesterol levels checked in the past 5 years. Thirty-one percent reported a physician had told them they had elevated cholesterol levels and 87% of those who had high cholesterol levels reported taking action to address the problem. However, in a random, non-telephone survey of 2000 people only 24% reported having elevated cholesterol, but, 48% had significantly elevated levels and therefore only half were aware.[4] Only 14% of those aware were on any medication for high cholesterol

    Chronic liver disease:

  - **RHP5 has 47% of adults at risk of chronic liver disease**

    South Texas has one of the highest rates of chronic liver disease in the country and non-alcoholic fatty liver disease is the most common cause.[10-12]

- *Behavioral and Mental Health:*
  - **There is an estimated 298,500 (28.6%) people in the RHP5 adult population with a measurable level of depression based on a random population based survey.**
  - **There are 317,300 (30%) of adults with measurable levels of anxiety.**
  - **Those who do report that their mental health is fair or poor or who report substance abuse also report that they have not been able to obtain professional help. So access to behavioral health services is a major barrier.**
  - **Varying self-reported data on behavioral health conditions demonstrate a clear need to better define the level of behavioral health impairment and who is at risk in RHP5.**

While self-reported data on mental health suggests that people in RHP5 do not report any more adverse behavioral health than in Texas or nationally, in the CCHC that used validated instruments for measuring depression and anxiety, there are more people with these conditions than self-reported in a telephone survey. State and national data suggest that mental health is a significant factor in substance abuse, chronic disease, and criminal activity.

In RHP5 suicide is the 12th commonest cause of death.[13;14] However an unpublished survey of depression in the CCHC using validated instruments suggests that depression is more common than reported.

- *Substance abuse: Self-reported* substance abuse rates are lower in RHP5 compared to Texas and to the US. Tobacco use in RHP5 is only slightly below that in Texas and the US, at 14% reporting smoking. Reported chronic alcohol consumption is 4%. Binge drinking, in contrast, is 16.7%; higher than Texas rate of 14.3%. Those reporting having driven a vehicle while drinking is 8.8%, compared to 5% nationally.

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BACKGROUND

The RHP5 partners comprise a wide assortment of public and private institutions coming together to address the region's heavy burden of chronic disease and health disparities and its demonstrated need for enhanced behavioral health access. The goal of the RHP5 needs assessment is to provide the basis for the decisions regarding the DSRIP projects to guide the health delivery reform strategic planning process. This needs assessment is intended to provide a health portrait of the community and to assist in addressing trends and emerging issues that affect delivery of health services. In this process we also engage the community and key partners to identify health concerns, priorities, strengths, and opportunities for DSRIP programs.

Health outcomes and conditions provide a profile of RHP5 through social and economic indicators, as well as the leading causes of morbidity and mortality for RHP 5 residents. Existing data drawn from local and state sources, including the U.S. Census Bureau, U.S. Bureau of Labor Statistics, Texas Department of State Health Services, and local resources were analyzed and are presented. *Demographic Portrait of RHP5* provides a profile of RHP5 through population, social and economic indicators.

METHODS

Benchmark Data

Texas Risk Factor Data: Statewide risk factor data are provided where available as an additional benchmark against which to compare local survey findings; these data are reported in the most recent *BRFSS (Behavioral Risk Factor Surveillance System) Prevalence and Trend Data* published by the Centers for Disease Control and Prevention and the US Department of Health & Human Services.[5] State-level vital statistics are also provided for comparison of secondary data indicators.[13]

Nationwide Risk Factor Data: Nationwide risk factor data, which are also provided in comparison charts, are taken from the *2011 PRC National Health Survey*; the methodological approach for the national study is identical to that employed in this assessment, and these data may be generalized to the US population with a high degree of confidence.[1] National-level vital statistics are also provided for comparison of secondary data indicators.

Healthy People 2020: Healthy People metrics provides science-based, 10-year national objectives for improving the health of all Americans. The Healthy People initiative is grounded in the principle that setting national objectives and monitoring progress can motivate action.[15]

2011 Community Health Report, Valley Baptist Health System: Report prepared by PRC (Professional Research Consultants, Omaha Nebraska) from 700 random land-line telephone interviews and focus groups.

Cameron County Hispanic Cohort: UT School of Public Health Regional Campus. Randomly recruited cohort of citizens in Brownsville. Randomized households are visited. Participants visit a Clinical Research Unit, where direct measurements and questionnaires are taken. Weighted data published since 2010 are used.[16]

Data from Federally Qualified Clinics, County Health Departments, hospitals and other medical sources.

Top Community Health Concerns Among Community Key Informants

At the conclusion of each key informant focus group conducted by PRC, participants were asked to write down what they individually perceive as the top five health priorities for the community, based on the group discussion as well as on their own experiences and perceptions. Their responses were collected, categorized and tallied to produce the top-ranked priorities as identified among key informants. These are used to complement and corroborate findings that emerge from the quantitative dataset.[1]

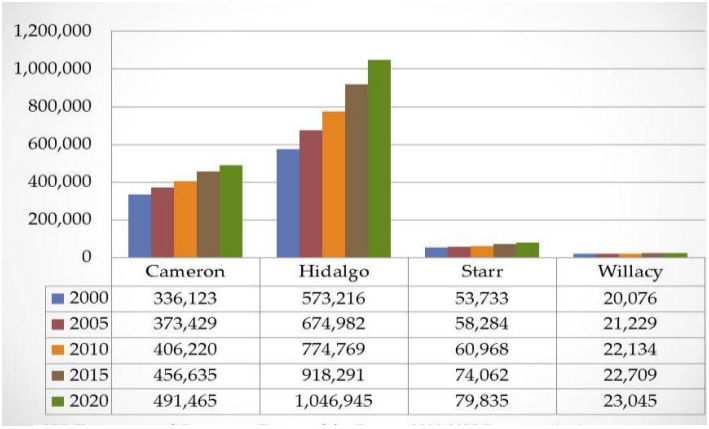
1. *Diabetes & Obesity***:** Mentioned resources available to address this issue: clinics, school district, City of Brownsville, Public Health Department, School of Public Health, El Milagro Clinic, Hope Clinic, WIC, Valley Baptist, and Harlingen Medical Center
2. *Mental Health***:** Mentioned resources available to address this issue: Tropical Texas Behavioral Health, Valley Baptist Campus East, Rio Grande State Center/South Texas Health Care System (RGSC), hospitals, private care

3. *Substance Abuse*: Mentioned resources available to address this issue: Serving Children and Adolescents in Need (SCAN), Valley AIDS Council (VAC) Substance Abuse Services, Recovery Center of Cameron County, pastoral services, Alcoholics Anonymous (AA)
4. *Health Education:* Mentioned resources available to address this issue: school district, Regional Academic Health Center (RAHC), University of Texas - Edinburg
5. *Access to Healthcare Services/Preventive Healthcare*: Mentioned resources available to address this issue: Brownsville Community Health Center, Su Clinica.

Demographics

Figure 1: Counties of RHP5

The RHP5 counties of Cameron, Hidalgo, Starr and Willacy Counties are shown in figure 1. The population of RHP5 increased by 29% between 2000 (0.93 million) and 2010 (1.26 million) (figure 2) and population projections indicate that the rate of growth is expected to continue to increase over the coming years. Racial/ethnic diversity varies little within RHP 5 from over 90% people of Hispanic origin (mostly Mexican American) in Starr and Hidalgo Counties to just fewer than 90% in Cameron and Willacy. This is with age distribution remained fairly constant geographically; however an increase in the elderly population (the Baby Boomer generation) and a decrease in the proportion of people under 24 years of age are expected by 2020, mirroring national trends, twice the proportion of Hispanic origin people in Texas. The proportion of African Americans is under 1%, very different from other Texas regions. The population is relatively young.



	Cameron	Hidalgo	Starr	Willacy
2000	336,123	573,216	53,733	20,076
2005	373,429	674,982	58,284	21,229
2010	406,220	774,769	60,968	22,134
2015	456,635	918,291	74,062	22,709
2020	491,465	1,046,945	79,835	23,045

Figure 2: RHP 5 Counties Population Growth

Social Environment

Educational attainment is not distributed equally across RHP5 counties.[16;17] State data show that the percent without a high school education ranges from 25% in Cameron to 37% in Starr County, while those with just a high school education range from 22% in Starr County to 29% in Willacy County. Those with some college range from 16% in Starr County to 24% in Cameron. The percent with a college degree or more ranges from 15% in Hidalgo County to only 9% in Starr County. The educational level as a whole is very substantially below the Texas average. Data from the CCHC show that the average number of years of education is 9.9 and those with a high school education are about 59% of the adult population..

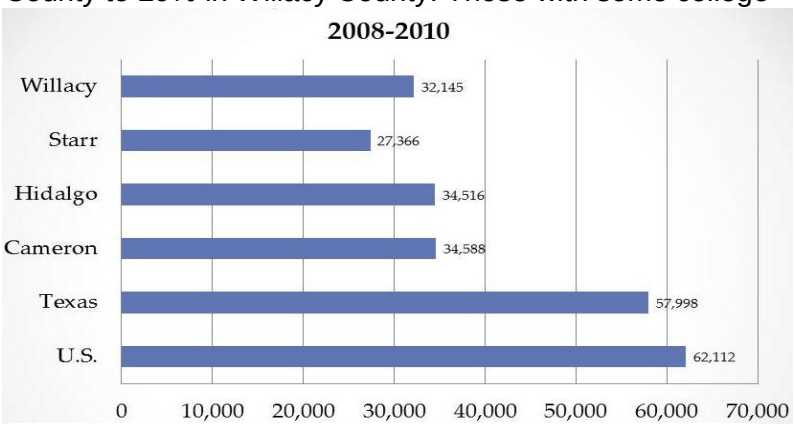


Figure 3: Median +Family Income RHP5

Economic Environment

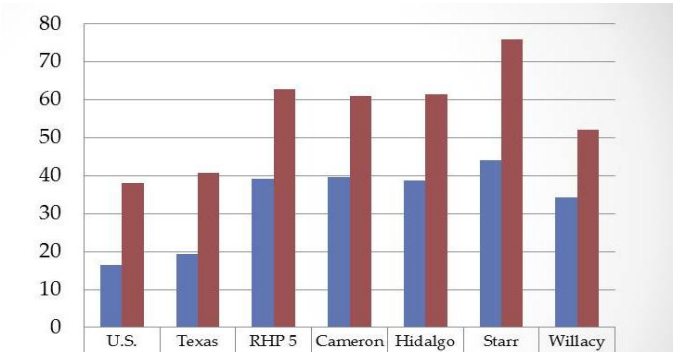


Figure 4: Percentage of Families Living Below the Federal Poverty Level RHP5. 2008-2010

The median (middle value) family income in RHP5 ranges from $27K in Starr County to $34.5K in Hidalgo and Cameron Counties (figure 3). This is between 45% and 59% of the Texas median and 40% and 55% of the US median family income. 47% of families in RHP5 earn less than $25,000 annually. In RHP5 40% of all families live below the federal poverty line which is twice the proportion for Texas and 2.5 times the proportion in the US. For families with single female head of household over 60% live below the poverty line, half again the proportion in Texas and the US (figure 4). Unemployment rates ranged from 12% to 17% in 2011.[18]

Physical Environment

80% of the population of Cameron, Hidalgo and Starr counties reside in urbanized settings, while Willacy county is about half urban and half rural. All of the counties contain what are known as 'colonias', which are mostly rural or semi-rural areas with poor infrastructure where the poorest families often live in sub-standard housing. These are among the many who do not have access to medical care and end up in emergency departments when they are ill. Many of these people do have hourly jobs that are low paying and often temporary. Sixty seven percent of Cameron County zip codes have a healthy food outlet, compared with 57% in Hidalgo and 33% in Willacy and Starr Counties. There are 10 times as many fast food restaurants as grocery stores.

Health Insurance Coverage

Access to Health Services: Access to comprehensive, quality health services is important for the achievement of health equity and for increasing the quality of a healthy life for everyone. It impacts: overall physical, social, and mental health status; prevention of disease and disability; detection and treatment of health conditions; quality of life; preventable death; and life expectancy. Access to health services means the timely use of personal health services to achieve the best health outcomes. It requires three distinct steps: 1) Gaining entry into the health care system; 2) Accessing a health care location where needed services are provided; and 3) Finding a health care provider with whom the patient can communicate and trust.[15]

Those sampled by the RDLTS were asked to report availability of health insurance of any kind. Sixty percent of individuals have health insurance of some type including Medicare and Medicaid which made up 17% of the 60%. However, the sampling method does not reach those without a land line telephone which is a substantial proportion of the local population of RHP5, and mostly the poorest.[1] Another random sample of 2,000 individuals (CCHC) directly interviewed in their homes show that only 31% have any type of health insurance (figure 5).[4] Males are significantly more likely to have health insurance and 88% of those over 65 have insurance. Factors associated with not having private insurance in RHP5 include being born in Mexico, years living on the border, poverty and not completing high school. Being employed or married increased the chance of having private health insurance. While we do not know how each factor limited access to health services, they provide an overall portrait of those without insurance and accessFor those who have

Category	Insurance status			
	All types %	Private %	Medicaid %	Medicare %
All Participants	31.4	11.9	8.3	11.0
Males	36.0	14.4	8.5	13.0
Females	27.7	9.9	8.2	9.4
18-64 years	20.4	13.8	4.6	1.8
≥65 years	87.8	2.0	27.4	58.4

Figure 5: Distribution of health insurance types among CCHC participants by sex and age. n=2000.[3]

insurance (of any kind) 90% includes prescription coverage. Thirteen percent of those with insurance (compared to only 5% in the US), nevertheless, went without coverage at some point in 2011, and those at risk for going without coverage were the most vulnerable; women, the younger adults, and the poorest except for those above the age of 65 who have Medicare coverage. However, obtaining diagnosis and treatment is not related to being employed or even better educated. Since much employment is hourly, taking time off work is costly, and is often with employers not offering insurance.[4] Furthermore, focus group studies confirm that fear and denial are also important barriers to accessing health care in this population.[19]

These data are in contrast to those from the telephone survey where we see that in every category of preventive service those with insurance were significantly more likely to receive the preventive service than those without access through insurance.[4] However, this survey provides only partial information.

THE CURRENT HEALTH SERVICE INFRASTRUCTURE AND ENVIRONMENT

The health service environment is highlighted by substantial deficits in numbers of health professionals in many areas such as primary care, family medicine, general medicine, mental health, community health and public health against a backdrop of substantial health burden of chronic disease with substantial health disparities and unmet behavioral health needs. The severity and wide distribution of chronic disease explains much of what is seen in everyday health service provision where individuals see their provider late in illness, often in the emergency rooms.

Table 1: Health Workforce Supply and Distribution RHP5 & Texas 2011

Category	N	Pop/Worker	Workers/100K Population	Rank in Counties	Ratio RHP5/Texas
Community Health Workers					
RHP5	241	5,535	18.1	8	
Texas	1,527	16,951	5.9		3.1
Dentists					
RHP5	286	4,664	21.4	132	
Texas	11,751	2,203	45.4		0.5
Nurses LVN					
RHP5	3,659	365	274.3	171	
Texas	72,921	355	281.7		1.0
Nurses RN					
RHP5	6,623	201	496.5	78	
Texas	184,467	140	712.7		0.7
Nurse Practitioners					
RHP5	190	7,021	14.2	143	
Texas	6,676	3,877	25.8		0.6
Direct Care MDs					
RHP5	1,378	968	103.3	67	
Texas	42,716	606	165		0.6
Primary Care MDs					
RHP5	728	1,832	54.6	93	
Texas	17,996	1,438	69.5		0.8
Psychiatrists					
RHP5	37	36,055	2.8	60	
Texas	1,766	14,657	6.8		0.4
Psychologists					
RHP 5 (2010)	119	10,924	9.2	104	
Texas (2010)	6,547	3,876	25.8		0.4
Physicians Assistants					
RHP5	281	4,747	21.1	71	
Texas	5,372	4,818	20.8		1.0

*RHP5 population 1,334,042 *Texas Population 25,883,999

Providers (summarized in Tables 1 and 2)[20]

*Physicians: A*s of September 2011 there are 1,378 physicians in RHP5 who provide direct patient care, among whom 728 provide primary care. There are 103 direct care physicians and 54.6 primary care physicians per 100K population in RHP5 and these are 40% and 20% respectively less than the Texas average, and this places RPH5 at the 67th rank compared to Texas Counties for direct care physicians and 93rd for primary care physicians. This is in contrast with the very high degree of health disparities and disease burden, particularly of obesity and diabetes, in the population.

There are 39 family medicine physicians that is 2.9 per 100K population, so there are 30% fewer family physicians per 100K population compared to the Texas average.

Similarly there are 15.5 family practice physicians per 100K population, fully 25% lower than the Texas average of 20.2 family practice physicians per 100K population. There is only half the number of general practitioners per 100K population in RHP5 compared to Texas average of 2.6 per 100K. Pediatrics is the only area where there is parity, indeed higher number per 100K in RHP5 (13.8) compared to 12.8 per 100k in Texas. However, the population in RHP5 is substantially younger than the Texas population as a whole.

Table 2: Primary Care Physicians by Specialty RHP5 and Texas 2011

	Family Medicine	Family Practice	General Practice	Pediatrics	Internal Medicine	Obstetrics and Gynecology	Geriatrics	Total
	N	N	N	N	N	N	N	N
RHP5	39	207	18	184	191	86	2	728
Texas	1,053	5,216	664	3,321	5,293	2,188	33	17,996
Total/100K population								
RHP5	2.9	15.5	1.3	13.8	14.3	6.4	0.1	54.6
Texas	4.1	20.2	2.6	12.8	20.4	8.5	0.1	69.5
RHP5/ Texas	0.7	0.8	0.5	1.1	0.7	0.8	1.0	0.8

Internal Medicine and OBGYN lag behind Texas average by 30% and 20% respectively. And as a whole RHP5 is 20% lower in primary care physicians per 100K compared to Texas.

Nurses and Nurse Practitioners: There are 3,659 Licensed Vocational Nurses (LVN) in RHP5 for a rate of 274/100K population which is close to the rate of 282 for Texas. However for Registered Nurses (RN) the 6623 RNs provide an average of 497 per 100K population, fully 30% below the rate of 713 in Texas. The situation is much sores for nurse practitioners where the rate is 14.2 per 100K in RHP5 compared to 25.8 per 100K in Texas. Thus for RNs and Nurse Practitioners, despite the heavy disease burden and disparities, the number per 100K is substantially below that of average rates in Texas.

Community Health Workers (CHW): This category of health worker is relatively much newer than the other categories in this report, and the CHW in many Hispanic cultures are common, and thus in RHP5 the rate of 18.1 per 100K, though very, very low, is nevertheless higher than the Texas average of 5.9 per 100K population. This is more reflective of the longstanding presence of CHWs (known in Spanish as Promotoras) in South Texas than a reflection of an adequate or really robust CHW presence. This category of health worker is gaining stature throughout the US as these community members are able to communicate with a cultural acuity that most do not possess. They are trained and certified to provide culturally competent education and to help guide clients through the health system. There is now a standardized training and certification process that will greatly augment the value and capacity of this category of health worker. Many of the DSRIP projects for RHP5 will feature the role of CHW in delivery of effective health services at a low cost.

Physician Assistant (PA): This is another area where RHP5 is equally or better supplied than Texas as a whole. However, given the very significant deficit in physician numbers, these valuable members of the Health Workforce remain inadequate in numbers for what we wish to achieve in community care. As managed care becomes more common in RHP5 we expect the numbers of PAs to increase.

Behavioral Health Professionals (psychiatrists, psychologists, social workers): Texas has one of the lowest ratios of psychiatrists to 100K population of any state in the nation and ranks 49th in spending for mental health per capita. RHP5 has 2.8 psychiatrists per 100K population, 40% of the already low level of 6.8 in Texas. Similarly there are 9.2 licensed psychologists per 100K in RHP5 compared to 25.8 in Texas. Again RHP5 has 40% of the rate of mental health professionals of the state. In Texas there are about 45 social workers per 100K in RHP5 compared to 68 per 100K in Texas so a 35% lower rate of social workers in RHP5 compared to Texas.

Dentists: Finally the situation with dentists in RHP5 is second in deficit only to mental health professionals. There are only 21 dentists per 100K population compared to 45 in Texas. This is more than a 50% reduction in dentists in RHP5 compared to Texas population as a whole.

Table 3: Hospital Size and Status in RHP5

Inpatient Hospitals RHP5	Beds	Trauma	Status
Cameron County			
Valley Baptist Health System	800	III	For Profit
Harlingen Med Center	112		For Profit
Valley Regional Hospital	214	III	For Profit
South Texas Rehabilitation Hospital			For Profit
Total Beds Cameron County	**1126**		
Hidalgo County			
Mission Regional Medical Center	297	IV	Non-profit
Doctors Hospital at Renaissance	506	III	For Profit
Edinburg Regional Medical Center	138		For Profit
Edinburg Childrens' Hospital	75		For Profit
McAllen Heart Hospital	60		For Profit
McAllen Medical Center	441		For Profit
Rio Grande Regional Hospital	320	III	For Profit
Driscolls Children's Hospital			
Solara Healthcare Hospital	78		For Profit
Knapp Medical Center	226	III	Not for Profit
South Texas Behavioral Center	134		
Total Beds Hidalgo County	**2275**		
Willacy County	0		
Starr County			
Starr County Memorial Hospital	49	IV	Hospital District
Total Inpatient Beds RHP5	**3450**		
Outpatient Facilities			
Brownsville Doctors Hospital	0		For Profit
Driscoll Childrens' Hospital			
Guadalupe Health Center			
Texas Oncology			For Profit

Hospital sizes and Status
(table 3)

Hospitals in RHP5 range in size from 49 beds in a small city hospital to over 500 beds in the two largest hospitals in each of the two counties. Many are full service hospitals. There are no trauma units under level 3. All of the general hospitals in the region are for profit.

Services

The services provided are diverse, with the understanding that many specialty areas are not available in RHP5.

RHP5 Health System:

The health system of RHP5 is composed entirely of for profit hospitals. There are Federally Qualified Health Clinics, county health clinics, and private practitioners who constitute the remainder of the health system. There is no hospital district. Private hospitals are the safety net for all of the population. Specialty care is provided in RHP5 where possible, but many people are referred to UTMB or other larger medical centers often with funds from the county indigent care program. However these funds are limited and often are consumed within a few months of the beginning of the fiscal year. Finally, many people cross the border to Mexico for a range of services from diagnostic, to treatment including the purchase of drugs that are available without prescription in the border towns of Mexico.

Health Service Costs

The costs of health services are heavily weighted toward Medicare and Medicaid in RHP5. Because of the lack of access to preventive health services and the high burden of chronic diseases, people are often seen in crisis in emergency departments with advanced manifestations of chronic disease and this drives up the overall cost of treatment and adds to the burden of indigent care of the hospitals and the health system. For example Figure 6 shows the estimated added cost of those with underlying diabetes because of the increase in length of stay in hospital.

Health Professional Shortage Area

RHP5 has long been a health professional shortage area with particular difficulty in recruiting and retaining primary care and specialist physicians, nurses and physician assistants. The poverty, remoteness, lack of an academic health educational center, and cultural and language barriers all contribute to the difficulty in recruiting and retaining health professionals. The section on health access provides details on the type and dearth of health professionals in RHP5.

SUMMARY OF INITIATIVES SUPPORTED BY USHHS

The Center of Excellence on Diabetes in Americans of Mexican Descent at the UTSPH Brownsville campus supported by a grant from the National Institute for Minority Health and Health Disparities.

Projected major changes in above items 2012-2016: There is every reason to believe that the population growth of the area will continue particularly given the situation south of the border that is causing many citizens or legal residents to come to the US.[21] There could be an improvement in the insurance and access to care situation over the next 4 years with the health reform legislation.[22] If the legislation remains intact then we expect improvement in access to health care. That could have a significant impact on reducing the level of undiagnosed and untreated chronic disease in the area.

Title	Diabetes		No Diabetes	
	N	Mean	N	Mean
Total weighted mean all patients	20666	4.18	26828	3.54
ICU weighted mean	2934	8.38	3565	7.66
Med Surg Weighted mean	18830	5.69	24562	4.94
			Low estimate	High Estimate
Diabetes accounts for 2126 extra days in ICU	2126.5	N*$12000-18000	**$ 25,517,831**	**$ 38,276,746**
Diabetes accounts for 14087 extra hospital days in Med/Surg services	14086.8	N*$1650-3161	**$ 23,243,292**	**$ 44,528,513**
Total Estimated cost			**$ 48.761.123**	**$ 82.805.260**

Figure 6 Length of Stay for ICU and Medical/Surgical Patients in Days RHP5 Hospitals 2011

There is little reason to expect major changes over the next 4 years in the number of health professionals. However as part of this waiver and the effort to start a new medical school in the area more locally trained health professionals remaining in the area is on the horizon. There could be an improvement in the insurance and access to care situation with the health reform legislation, however the impact on the marginal or undocumented people of the region remains uncertain. Healthcare reform at the regional level that creates a type of medical home for these patients is a potential means of keeping them healthy, working and out of the hospital emergency departments where care is much more costly.

KEY HEALTH CHALLENGES SPECIFIC TO REGION 5

Overall Health Status: 82% of those surveyed said their health was excellent, very good or good, however, 28%, said their health was fair to poor. This coincides with an overall observation in adults of high levels of diabetes (31.7%). There is a marked reduction in the proportion of people in Hidalgo County who said their health was very good compared to Texas and the US, and higher proportions of Hidalgo's population who said their health was only fair or poor compared to Texas and the US.[1] Those most likely to report less than good

health were women over the age of 40 who are below the poverty line. This population is also more likely to be obese and to have diabetes and to have significant levels of depression.

Based on the Texas Department of State Health Services the five leading causes of death for adults in RHP% are heart disease, cancer, diabetes, strokes, accidents (including motor vehicle) (figure 7).[13] Others include septicemia, liver disease, renal disease, Alzheimer's disease, suicide and homicide. However, there are no formal disease registers for these diseases and they depend on death certificates that are notoriously inaccurate and incomplete. Therefore these data should be looked at with considerable suspicion. For example in RHP5 the leading causes of admission to ICUs and emergency departments are septicemia, renal failure, and hypertension and for all of these, as well as heart disease, diabetes is an underlying diagnosis in 50-60% of the patients. However, because diabetes is often listed well down the list of ICD-9 diagnoses it is very often missed in reporting. More detailed information from the counties is available for each county and for younger and older adults. These data show that for younger adults cancer, heart disease, accidents, chronic liver disease, diabetes and strokes are the top causes of death, again keeping in mind from the hospital data that underlying most of these (heart disease, stroke, liver disease, and many cancers), are obesity and diabetes.

Rank	1	2	3	4	5	6	7
Cause	Heart	Cancer	Diabetes	Stroke	Accidents	Lung disease	Septicemia
Rate/100K	181.53	127.56	31.58	31.30	26.10	21.87	16.03
Rank	8	9	10	11	12	13	
Cause	Liver disease	Kidney Disease	Alzheimer	Hyper-tension	Suicide	Homicide	
Rate/100K	15.80	15.47	8.90	5.22	5.21	4.39	

Figure *7: Major Causes of Mortality for the RHP5*

Diseases and Conditions of Importance in RHP 5

Diabetes: Twelve percent of the population in Health Region 11 (from which some of the counties in RHP 5 are drawn) reported that they had diabetes in 2010 based on the Texas behavioral risk factor surveillance system, showing that the 4 counties rate of self- reported diabetes is 9.1% with a range from 11% to 18% of the adult population.[5] However, figure 8 shows the prevalence of diabetes in a randomly selected group of 2,000 people from the CCHC in whom the actual level of measure diabetes is in fact just shy of 31%.[4] The same figure shows that self-reported diabetes is 14.7% consistent with the BFRSS data. However our CCHC is a poor population with little access to healthcare. Figure 8 also shows the comparison of the data from Cameron County with data from national data sets for Mexican-Americans. Among Mexican-Americans nationally more are overweight than obese whereas CCHC data show that more are obese than overweight. Similarly undiagnosed diabetes is 13.7% compared to 10.4% in Mexican-Americans nationally. The overall prevalence of self-reported diabetes nationally is 8.3% but in our population 17% of the total adult population has diabetes and is unaware of it; that is more people are undiagnosed than diagnosed with diabetes.[4]

The impact of diabetes on hospital care is demonstrated in figure 9 that shows the proportion of patients with the major causes of hospital admission who also have diabetes. The proportions range from 57% of heart attacks, strokes and sepsis to 90% of those with leg ulcers and retinopathy. The impact of diabetes on length of hospitalization is substantial and accounts for 2,126 extra days in the ICU, and 14,087 days of excess hospitalization. The estimated costs for this range from $48 million to $82 million.

Condition	Diabetes	All	% diabetes
1 heart attack	686	1178	58.2
2 stroke	837	1639	51.1
3 heart failure	2152	3391	63.5
4 renal disease	3561	5394	66.0
5 hypertension	4326	7899	54.8
6 cancer	683	2138	31.9
7 Leg or foot ulcer	472	712	66.3
8 Peripheral neuropathy	577	649	88.9
9 Retinopathy	279	295	94.6
10 Sepsis	1648	3075	53.6
11 Depression	509	1187	42.9
12 Alzheimer	292	604	48.3
13 Eclampsia	13	180	7.2
14 Birth<36 weeks	3	472	0.6

- Data source from 6 participating hospitals in RHP5
- Diabetes an underlying condition in 57% of all admissions 1-12

Figure 9: Hospital Admissions by Diagnosis and Proportion with type 2 diabetes 2011 RHP 5

Cardiovascular Disease: The death rate from acute cardiovascular diseases such as heart attacks and strokes is substantially lower in RHP5 compared to Texas and the nation. However among

the top diseases resulting in hospitalization in RHP5 is heart failure. It appears that heart failure may be much more pervasive and diagnosed much later in this population. While acute cardiovascular disease may be lower, heart failure appears to be very common, and perhaps underdiagnosed. Similar to diabetes, people can go for some time with insidious heart failure without a proper diagnosis. That may be the case in this population based on very preliminary data. Diabetes is an underlying component of well over 50% of cardiovascular events leading to hospitalization in the hospitals of RHP5. It is an underlying condition in well over 60% of patients with congestive heart failure admitted to the hospitals. Heart attacks and heart failure are important causes of hospitalization in RHP5 and indeed based on an ongoing study, as many as 30% of adults have evidence of heart failure in the population.[4;8;9] The most effectively addressed cardiovascular problem encountered was that of hypertension where 32% have hypertension and 85% of those were self-reported and 50% were taking appropriate medication for treatment (Figure 10).[4]

Elevated cholesterol: 87% of those surveyed by RDLTS said they had had their cholesterol levels checked in the past 5 years. 31% reported a physician had told them they had elevated cholesterol levels and 87% who had high cholesterol levels reported taking action to address the problem.[1] However, in the CCHC participants only 24% reported having elevated cholesterol, whereas when tested for cholesterol 48% had significantly elevated cholesterol, only half were aware, and less: 14% were on any medication (figure 10).[4]

Mental Health: Mental health is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with challenges. Mental health is essential to personal well-being, family and interpersonal relationships, and the ability to contribute to community or society. Mental disorders are among the most common causes of disability, and fully one fifth of the population in RHP5 consider their mental health fair or poor.[1] The result is that the disease burden of mental illness is among the highest of all diseases. Mental health and physical health are closely connected. Mental health plays a major role in people's ability to maintain good physical health. Mental illnesses, such as depression and anxiety, affect people's ability to participate in health-promoting behaviors. In turn, problems with physical health, such as chronic diseases, can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.[15] Texas ranks at the bottom of the 50 states in dollars per person for treatment of mental illness (National Association for mental illness). This creates a statewide pool of untreated mental illness ranging from severe conditions such as schizophrenia and bipolar disorder to milder depression and anxiety. As with all chronic diseases this results in costs related to increased hospitalizations, reduced education, and even higher risk of incarceration (National Council for Community Behavioral Health Care fact sheet). For example untreated persons with significant mental illness are more likely to be incarcerated and they incur more costs than non-mentally ill.[23]

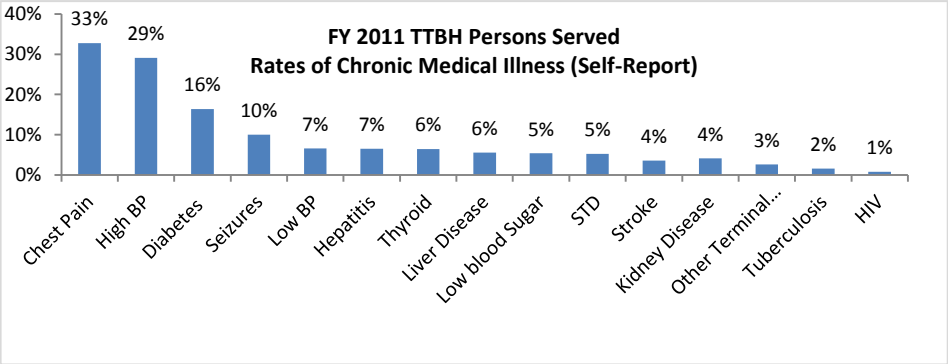
Participants with disease	Percent with disease	Number of adults with disease	Proportion undiagnosed	Proportion not on treatment
Diabetes	**30.7%**	**273,831**	**51%**	**55.8%**
Hypertension	**31.7%**	**292,271**	**15.5%**	**50.0%**
Hypercholesterolemia	**47.9%**	**441.634**	**50.8%**	**85.1%**
At least one of these three conditions	***69.6%***	***644,472***		
Risk factors for all three conditions	***..Being diagnosed***	• ***Medicaid*** • ***Medicare***	***..NOT being diagnosed***	• ***High school*** • ***Employment***

Figure 10: Percent of the population and actual numbers with disease in the LRGC from a random sample of residents, and factors associated with the likelihood of being diagnosed and treated.

Overall Perception of Mental Health Status RHP5 (figure 11): 21% of those surveyed in RHP5 described their mental health as less than good compared to less than 12% in the United States.[1] This is consistent with other observations of levels of depression and anxiety in the population. It is also consistent with the report that 20% of people surveyed in the region say they had five or more days a month when their mental health was not

good. In contrast 39% said they had two or more years in their lives when they felt depressed or sad on most days (compared to 26% in the US). These varying self-reported data demonstrate a clear need to better define the level of behavioral health impairment in the population and to better define who is at risk. Furthermore there is clear evidence that diabetes contributes substantially to poor mental health, as does obesity and lack of physical activity. In a random study of 2000 people using CES-D scale the level of mild to moderate depression was 20% in the population which is higher than the rate of self-reported depression. Depression was associated with low levels of education, low income, being female, high BMI and diabetes (unpublished data). Conversely mental illness is also often accompanied by underlying chronic medical conditions.

Figure 11: Rates of self-reported chronic disease" Source: Tropical Texas Behavioral Risk Factor Surveillance System.



Chronic liver disease: South Texas has one of the highest rates of chronic liver disease in the country.[12] Indeed in the CCHC 47% have elevated liver enzymes. Two recent publications from this population strongly point to non-alcoholic fatty liver disease (NAFLD) as the likely culprit.[10;11] NAFLD leads to non-alcoholic steatohepatitis, cirrhosis and liver cancer.[24] Unpublished data from the CCHC suggest that this is a common event in this population.

Cancer: Cancer is the second leading cause of death in RHP5 with liver cancer, ovarian cancer, and cervical cancer surprisingly high on the list (CCHC unpublished data). Cancer can be prevented in the majority of instances through a healthy lifestyle that rejects smoking and retains normal weight. Cancer can also be detected and treated more cost effectively when early detection and screening programs are in place. A critical part of cancer prevention is early detection through smoking cessation and screening programs such as mammograms, colonoscopy, and regular preventive medical examinations. The American Cancer Society has published that 75% of cancers are preventable, and more recently obesity has become equal to cancer as a direct cause of many cancers. Therefore the programs to reduce obesity and diabetes can play a major role, along with screening and early detection in prevention of cancer.

Chronic Lung Disease: Asthma and chronic obstructive pulmonary disease (COPD) are significant public health burdens. Specific methods of detection, intervention, and treatment and prevention exist that may reduce this burden and promote health.[15] COPD is primarily caused in 8/10 cases by smoking cigarettes or being exposed to secondary cigarette smoke, therefore it is a preventable and treatable disease that is not fully reversible. The airflow limitation is usually progressive. Treatment can lessen symptoms and improve quality of life. Approximately 13.6 million adults have been diagnosed with COPD, and an approximately equal number have not yet been diagnosed. The burden of respiratory diseases affects individuals and their families, schools, workplaces, neighborhoods, cities, and states. Because of the cost to the healthcare system, the burden of respiratory diseases also falls on society; it is paid for with higher health insurance rates, lost productivity, and tax dollars. Annual healthcare expenditures for asthma alone are estimated at $20.7 billion. COPD is the fourth leading cause of death in the United States. In 2006, approximately 120,000 individuals died from COPD, a number very close to that reported for lung cancer deaths (approximately 158,600) in the same year. Genetic factors strongly influence the development of the disease. since not all smokers develop COPD. Quitting smoking may slow the progression. Women and men are affected equally, yet more women than men have died of COPD since 2000.

Asthma: Currently in the United States, more than 23 million people have asthma and the prevalence has increased since 1980.[15] However, deaths from asthma have decreased since the mid-1990s. The causes of asthma involve both genetic and environmental factors. Among the current risk factors is obesity. Asthma

affects people of every race, sex, and age.Significant disparities in asthma morbidity and mortality exist, in particular for low-income and minority populations. Populations with higher rates of asthma include: children (particularly boys) and adult women; African Americans; Puerto Ricans; people living in the Northeast United States; people living below the Federal poverty level; and employees with certain exposures in the workplace. While there is no a cure for asthma yet, there are diagnoses and treatment guidelines that are aimed at ensuring that all people with asthma live full and active lives. Overall, the self-reported prevalence of asthma in both McAllen and DSHS Region 11 was 4.9 and 4.2%, well below the Texas prevalence of 7.4% and the national prevalence of 8.6%.

Alzheimer's Disease: Deaths from Alzheimer's disease in RHP5 are only about 40% of the rate in Texas and half of those in the US. There are no data on the prevalence of Alzheimer's Disease in RHP5. A study of CCHC participants demonstrated that 8.8% had some cognitive impairment using the Mini Mental Status Exam. Interestingly some evidence of cognitive impairment was present in age groups as low as 30 years. In univariable analysis, cognitive impairment was associated with age, education, and blood glucose levels.

Injury & Violence: Injuries and violence are widespread in society. Motor vehicle accidents account for more than 55%.[25] Both unintentional injuries and those caused by acts of violence are among the top 15 killers for Americans of all ages. Many people accept them as "accidents," "acts of fate," or as "part of life." However, most events resulting in injury, disability, or death are predictable and preventable. Injuries are the leading cause of death for Americans ages 1 to 44, and a leading cause of disability for all ages, regardless of sex, race/ethnicity, or socioeconomic status. More than 180,000 people die from injuries each year, and approximately 1 in 10 sustains a nonfatal injury serious enough to be treated in a hospital emergency department.[15] The role of unintentional and intentional injury is clear with accidents occupying the 5th leading cause of death in RHP5 and suicide and homicide occupying the 12th and 13th causes. Vehicle accidents, not surprisingly, are the dominant cause of injury deaths followed by poisoning, falls and drowning. Overall, the age adjusted mortality in RHP5 is significantly lower than that of Texas and the US and the rate in RHP5 has declined compared to Texas over the past decade. The mortality from motor vehicle crashes overall is significantly less in RHP 5 than in Texas or the US. The group at greatest risk for not wearing a seat belt is young men, and they should be a focus for any preventive program. Overall reported violent crime rates in RHP5 are lower than Texas and the US, and have been declining over the past decade. The presence of a firearm in the house is lower than the US rate. However the possession of an unlocked, loaded firearm is significantly higher. The rates of reported rates of domestic violence are significantly higher in RHP5 compared to Texas and that difference has persisted over the past decade. However the rate of reported intimate partner violence is somewhat lower than the reported US rate, and being young, female and poor raises the risk of being a target of domestic violence. Finally reported rates of child abuse are 20% higher in RHP5 compared to Texas, and the rates of child abuse in RHP5 (and Texas) have increased over the last decade, partly perhaps from increased awareness and improved reporting.[26]

Kidney Disease: Chronic kidney disease and end-stage renal disease are significant public health problems in the United States and a major source of suffering and poor quality of life for those afflicted, responsible for premature death and exact a high economic price from both the private and public sectors (figure 12). Nearly 25% of the Medicare budget is used to treat people with chronic kidney disease and end-stage renal disease. Renal disease was an important cause of admission to RHP5 hospitals (figure 9), and 65% of those admissions had underlying diabetes. Renal dialysis rates in RHP5 are one of the highest in Texas.[1;25]

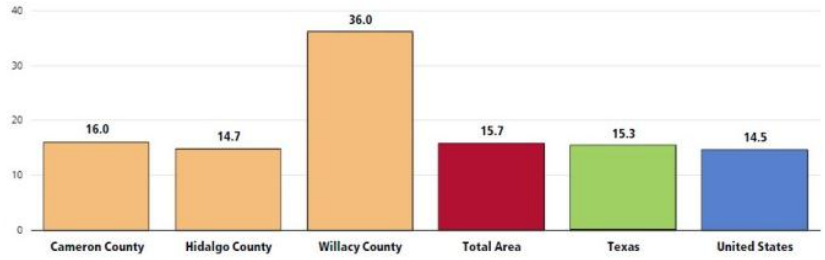


Figure 12: Kidney Disease: Age-Adjusted Mortality/100,000 population

Vision & Hearing Impairment: Fifty percent of those interviewed by the RDLTS said they had an eye examination with pupil dilation. However, this sample was more directed to those with insurance, and the rate of diabetes is highest in

those without insurance. Thus many with undiagnosed diabetes may not have an eye examination. So clearly a need is to increase availability of fundal examination for diabetic retinopathy. Ninety-five percent of those hospitalized for retinopathy had underlying diabetes in the RHP5 hospitals.

Infectious Disease: There have been no reported cases of measles and rubella complete area last several years. Similar to the rest of Texas in the United States there has been a resurgence of pertussis in our area however the rates are no higher than those of Texas and the US national rights. On the other hand vaccination rates in our region are definitely problematic in that influenza vaccination rates are lower than those of Texas and 10% lower than national influenza vaccination rates for adults over the age of 65. For those between the age of 18 - 64 only 35% received flu vaccinations compared to 52% nationally. One of the important issues in our population is the increased susceptibility to infectious diseases found in those with diabetes. For example in tuberculosis, influenza, and pneumonia all are increased in those with diabetes and more severe. Nevertheless in RHP5 only 45% of people 65 years and older have had pneumococcal vaccine compared to 69% in Texas and 68% in the rest of the United States.

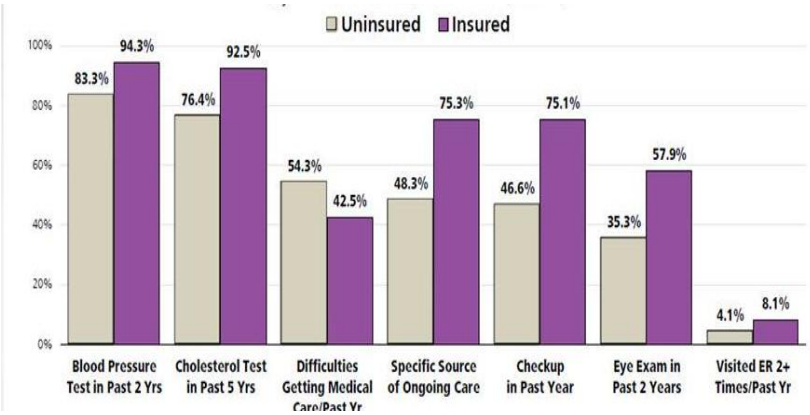


Figure 13: Preventive Health by Insurance Status

Tuberculosis continues to be an issue in our region where we have the highest rates in the nation. In 2009 the prevalence of tuberculosis was 12.8 cases per hundred thousand compared to 4.4 in United States and 6.2 in Texas. Willacy County has the highest rate of tuberculosis in RHP5. Most importantly diabetes is the biggest risk factor for tuberculosis in our area and it accounts for about 1/3 of TB cases.[27;28] HIV rates in RHP5 are less than half of that or approximately half of that in Texas and about 70% of the rate in the United States. The rate of 10.3 cases/100,000 population is lower than the rate in Texas and the United States. However Willacy County rates were higher than others in our area and in Texas. -

Sexually Transmitted Diseases: Rates of HPV infection are very high, together with cervical dysplasia and cervical cancer.[29] The incidence of gonorrhea in our region is substantially lower than in Texas and overall United States. Similarly the occurrence of primary and second secondary syphilis is almost nonexistent in our region compared to Texas and the United States. The incidence of chlamydia in our region is low. On the other hand, reports among those with three or more sexual partners over the past year 10.7% of the population compared to 7.1% in the United States have chlamydia. As a whole there is a 30% higher rate of multiple sexual partners in our region relative to the United States. The rates of hepatitis B vaccination in the region is similar to the United States at about 35%.

	%	Adult Pop. 1,043,686	Treatment Cost Per year
Obese (BMI ≥30)	50.7	529,149	$756,154,921*
Overweight	31.9	332,936	
Morbid obesity	8.5	88,713	
Normal Weight	17.4	181,601	
Adolescent Overweight/Obesity	>50%		

Figure 14: Actual prevalence of Obesity in the CCHC, estimating costs based on an average annual cost of $1,429

Modifiable Health Risks: Preventive health is poorly practiced in the region, but this depends on insurance (figure 13). Strong science exists supporting the health benefits of eating a healthful dietary choices and maintaining a healthy body weight. Efforts to improve food choice and weight should address individual behaviors, as well as the policies and environments that support these behaviors in settings such as schools, worksites, healthcare organizations, and

communities. Fifty-three percent 53% of those surveyed by land-line phone interview said they consumed at least 2 servings of fruit or fruit juice in the previous day, although federally guidelines recommend at least 5 per day.[1] The proportion of those who consume the recommended 5 servings of fruits and vegetables per day is 20% lower than the national average, but the lowest socioeconomic strata are significantly least likely to do this. The overall proportion of people seeking nutrition advice is the same as the US population, but the highest proportion (50%) is appropriately in those in the obese category where over half have done so.

Physical Activity: Regular physical activity can improve the health and quality of life of Americans of all ages, regardless of the presence of a chronic disease or disability. Among adults and older adults, physical activity can lower the risk of: early death; coronary heart disease; stroke; high blood pressure; type 2 diabetes; breast and colon cancer; falls; and depression. Among children and adolescents, physical activity can improve bone health; improve cardiorespiratory and muscular fitness; decrease body fat; and reduce symptoms of depression. For people who are inactive, even small increases in physical activity are associated with health benefits. Well over 30% of respondents said they had no physical activity in the past month compared to 24% in Texas. Less than half of respondents reported physical activity levels that meet the minimum recommended requirements.

*Weight***:** The perception of body weight in respondents in the behavioral risk factor survey of DHSH showed that 39% of the residents consider themselves to be about right for weight and only 16% considered that they were very overweight, and 42% reported that they are somewhat overweight. While this number reporting overweight or obesity is short of the actual proportion of people who are either obese or overweight, it is nevertheless a good start on people understanding the issue of obesity and their body weight. Figure 8 shows the prevalence of obesity (BMI greater than or equal to 30kg/m^2), to be 48.5% of the adult population.[16] Altogether over 80% of the population of RHP5 is obese or overweight and at high risk for other medical conditions especially diabetes. The cost potential for obesity in RHP5 is three quarters of a billion dollars.

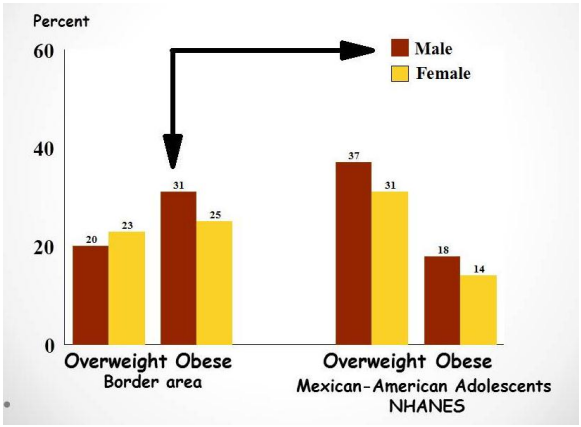


Figure 14: Overweight and obesity in Mexican-American adolescents in RHP5. Arrows show the importance of obesity in adolescent males

Figure 14 demonstrates that adolescent overweight and obesity is greater than 50% and this translates into higher rates of diabetes among youth and adults. BRFSS data show that 36% of children are overweight or obese; that is they have a BMI in the 85th percentile or higher. The data in figure 14 are from published data from a study of adolescents in Brownsville and it shows that in fact 56% of adolescents are either obese or overweight in the border region and that more are obese than overweight which is the cost of what we see nationally.[30] From these data it is clear that the level of physical inactivity and the lack of consumption of five fruits and vegatables and other healthful elements of a nutritious diet play a major role in the issue of obesity and diabetes.

Substance Abuse: In 2005, an estimated 22 million Americans struggled with a drug or alcohol problem. Almost 95% of people with substance use problems are considered unaware of their problem. Of those who recognize their problem, 273,000 have made an unsuccessful effort to obtain treatment. These estimates highlight the importance of increasing prevention efforts and improving access to treatment for substance abuse and co-occurring disorders.[15] Overall, self-reported alcohol abuse in RHP5 is significantly lower than in Texas or the US. What is disturbing is the much higher proportion (9%) of people who report that they have driven while drunk or ridden with someone who had too much to drink over the previous month of the report compared to 5.5% nationally.

The rate of reported drug related deaths in RHP5 is less than half of that in Texas and only about 1/3 of that reported in the US and has remained relatively constant. Tobacco use is the single most preventable cause of death and disease in the United States. Each year, approximately 443,000 Americans die from tobacco-related illnesses. For every person who dies from tobacco use, 20 more people suffer with at least one serious tobacco-related illness In addition, tobacco use costs the US $193 billion annually in direct medical expenses

and lost productivity.[15] Overall the rate of tobacco use in RHP5 is only slightly below the rate in Texas and the US. While a smaller percentage of smokers say they are daily smokers, over 14% of people report smoking. Those at risk are men age 65 years or less, and who are in a lower socioeconomic stratum (fig. 26b). Reported smokeless tobacco is at a very low usage (well under 2% of the population).

Oral Health: Only 48% of those in RHP5 had seen a dentist or dental clinic during the past year, well under the proportion for Texas (62%) or the US (67%). Men, adults aged under 65 years and poverty are risk factors for lower rates of dental care. However the proportion of children who visited a dentist over the past year was 85% well above the rate of 79% in the US and substantially better than the target rate of 49% for the Healthy People 2020 target.[1] Since only 35% of RHP5 (ranging from 17% to 38% in counties) have dental insurance compared to 61% in the US it is commonplace for individuals with dental problems to visit the hospital emergency room or seek care in Mexico for dental care. However, due to the recent escalation of violence fewer people now go to Mexico. Only children under the age of 21 who are on Medicaid have easier access to dental care. Though there are dentists in the community accepting Medicaid patients there is still a shortage of providers.[1]

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