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“SOWING SEEDS FOR THE FUTURE WITH TIGUA HISTORY AND TRADITION": DIABETES PREVENTION AND MANAGEMENT AT YSLETA DEL SUR PUEBLO

BY

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DISSERTATION

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy
Anthropology

The University of New Mexico
Albuquerque, New Mexico

December 2013

DEDICATION

This dissertation is dedicated to my grandfather, who through his years living and working on the U.S.-Mexico border made it a better place.

ACKNOWLEDGEMENTS

I would never have been able to finish my dissertation without the support of Ysleta del Sur Pueblo, my committee, various funders, my family, and my wife.

I am grateful for the support of the members and staff of Ysleta del Sur Pueblo. The elders at the Pueblo, some of whom are no longer with us, welcomed me into the community, made me feel safe, and treated me as if I were at home. The staff at the Community Health Center, particularly Ana Lopez and Dr. Haddy, invited me to work with them and trusted me with their space and time, two precious commodities in medical communities. Many tribal members trusted me with their histories, their philosophical views, and welcomed me into their homes as family. I am particularly grateful to Patsy Soto, Cuco Ortiz, Elias Torrez, Rick Quezada, Francisco Gomez, and Javier Loera for sharing their time and insights.

My dissertation committee patiently supported and guided me throughout the process. Les Field, my dissertation chair, shared years of experience and always guided my research. Beverly Singer made me feel welcome in the department and shared invaluable insight into Pueblo life. Erin Debenport encouraged my applied research and pushed me to consider new theoretical insights, and Nina Wallerstein helped me bridge the cultural and medical worlds. Finally, Louise Lamphere anchored my dissertation and provided much needed support in the home stretch.

This dissertation would not have been possible without the generous support of several organizations that funded my research. Graduate school studies were supported by the Center for Southwest Research, the Research Service Learning

Program, and the American Indian Graduate Center. My research was supported by the Smithsonian Institution, the Hispanic Serving Health Professions Schools (HSHPS), the Centers for Disease Control and Prevention, the Robert Wood Johnson Foundation Center for Health Policy, and the Andrew W. Mellon Foundation. Additional support and garden supplies were graciously provided by Ysleta del Sur Pueblo and the staff of the Pueblo Grounds Department.

Friends and family offered invaluable support over the years. I wish to thank Dr. Jay Williams, my academic sparring partner, for sharing research ideas and as we both completed our degrees. I also wish to thank my parents for supporting my educational goals throughout the years, and my brother for being there at difficult times. To my wife, Kimberly, I thank you for your kindness, support, and love throughout the dissertation process.

"SOWING SEEDS FOR THE FUTURE WITH TIGUA HISTORY AND TRADITION": DIABETES PREVENTION AND MANAGEMENT PRACTICES AT YSLETA DEL SUR PUEBLO

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ABSTRACT

This dissertation examines type 2 diabetes management and prevention at Ysleta del Sur Pueblo, a federally recognized American Indian tribe in El Paso, Texas. Type 2 diabetes is a serious and growing concern at the Pueblo, and while the incidence is not as high as it is in other tribes in the United States, it is still much higher than the national average. Despite excellent biomedical research that shows how individuals can prevent diabetes, and countless translated diabetes prevention programs targeted to individuals and families to prevent the disease, the incidence of diabetes continues to rise.

This dissertation argues that there are currently two dominant models, and one emerging model, of diabetes research and intervention among American Indian peoples. Located on a spectrum, they are (1) individual-oriented biomedical models developed predominately for white, Western populations, which are applied to both the general U.S. population and American Indian peoples; (2) modifications, adaptations, or translations of these programs for application in non-white communities, including American Indian communities; and (3) emerging models of communal prevention in which intervention activities derive from local cultural practices and are then enhanced

with biomedical practices. I argue that diabetes research will benefit by shifting to the third model of care and prevention.

Utilizing a collaborative methodology founded on community-based participatory research, I conducted 18 months of fieldwork and volunteer employment at a community health center and the reservation it serves. During research, I observed or participated in secular activities at the Community Health Center, religious activities as part of the annual religious cycle, and a variety of activities related to experimental community gardens. I enhanced my participant-observation with interviews of the Community Health Center staff (both native and non-native), of tribal council members and religious leaders, of enrolled diabetic and non-diabetic individuals, and of non-diabetic tribal descendants.

This research covers four intersecting domains to shed light on the occurrence of diabetes and changing methods of prevention. The first domain, a political economic history of the Pueblo, shows how type 2 diabetes took hold in the community after changes in economies, diet, and exercise. Five epochs are explored: (1) the Pueblo's dislocation to their current location following the Pueblo Revolt and the resulting impact on lifestyle; (2) how loss of tribal land changed food production practices and introduced new foods; (3) how federal recognition had both positive and negative impacts on the Pueblo's built environment, resulting in new dance practices and food consumption; (4) how a "boom and bust" era of casino gaming negatively impacted wellness programs; and (5) how the Pueblo is reshaping diabetes prevention by supporting nation building programs and tribal identity.

The second domain examines diabetes-related practices at the Community Health Center. I learned that the Community Health Center is engaged in management of diabetes at the individual level but has yet to establish activities that may prevent diabetes in the reservation. This inability to expand is the result of structural practices that make it very difficult for the Pueblo to develop new programs. Structural challenges include insufficient staff, lack of training in new and innovative health prevention models, and a system that promotes Western medical practices and minimizes the contribution of the local American Indian staff.

In contrast to the Community Health Center, the third domain, the broader Pueblo community, reveals that Pueblo members do participate in many community-wide practices that may prove useful for diabetes prevention. Although the tribal community does not view these activities as wellness practices, if these activities were supported by the Health Center in a culturally sensitive manner they could potentially act as effective diabetes prevention practices. These activities emerge from religious institutions and include community gardens and tribally grown food to support nutritional education, religious dancing and pilgrimage activities which promote regular exercise, and enhancement of the Pueblo's built environment to make engagement in wellness activities easier.

The final domain, that of individual choice and identity, sheds light on how individuals engage diabetes management or prevention at the community health center and within religious institutions. I link practices to generationally defined identity, show how biomedical and indigenous models of diabetes management and prevention

intersect, and suggest that a having variety of tribally supported programs is necessary to prevent diabetes on a community-wide scale.

The dissertation concludes with a discussion of changes that have occurred at the Pueblo since the research concluded, further recommendations, and implications for anthropological research among Pueblo Indians.

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Chapter 1: Introduction

American Indians have a disproportionately higher risk of developing type 2 diabetes in comparison to the general U.S. population (Centers for Disease Control and Prevention, 2008; Satterfield, Shield, Buckley, & Alive, 2007), and although biomedical research shows that diabetes can be prevented or delayed, the incidence of diabetes continues to rise both nationally among the general U.S. population and among American Indian peoples. To counter this trend, behavioral health researchers have spent more than 20 years researching the cultural context of type 2 diabetes to investigate the factors that allow the disease to take hold and thrive in some communities but not in others (Centers for Disease Control and Prevention, 2006; Ferreira & Lang, 2006, pp. 512, 529; National Institute of Health, 2007; RWJF, 2006). This dissertation builds on social science studies of diabetes to explore the cultural context of diabetes care at Ysleta del Sur Pueblo,[1] a federally recognized tribe in El Paso, Texas, in order to improve type 2 diabetes care and prevention.

Ysleta del Sur Pueblo is located in the southeast quadrant of El Paso, along the U.S.-Mexico border. The Pueblo was granted federal recognition in 1987 and shortly thereafter began developing health programs for enrolled members and non-tribal spouses. In 1993, a centrally located building on the reservation was remodeled and

[1] I use "Ysleta del Sur Pueblo" or "Ysletan" in reference to the Pueblo's federally recognized name. "Tigua," a name often used by tribal members or in pre-recognition documents and Congressional bills, is a Spanish variant of Tiwa, the native language which has been replaced by Spanish and English.

repurposed to become the Community Health Center. For the first time, enrolled tribal members had access to a dental clinic, direct-care medical services, and behavioral health programs. In 1996 a modest health education program was added and, with the support of funds from tribal gaming operations, eventually transitioned into the Pueblo's Diabetes Program. Now in its twelfth year, the Diabetes Program is combating a slowly increasing incidence of the disease across the urban reservation. Of the 1,615 enrolled members, 140 (8.7%) are diagnosed with type 2 diabetes, and for the last several years approximately one new patient has been diagnosed with type 2 diabetes every 6 weeks. If the incidence of diabetes continues at current estimated rates, it is likely that by 2050 at least one in three individuals on the reservation – including minors – will be diagnosed with type 2 diabetes (Boyle, Thompson, Gregg, Barker, & Williamson, 2010).

This research aligns with current trends in diabetes research yet departs in significant ways. As with other social science research in underserved communities.[2] this research contextualizes type 2 diabetes by providing a political economic analysis and history of the community (Smith-Morris, 2001, 2006). I begin the political economic analysis by arguing that the conditions that allowed type 2 diabetes to enter the community developed in five distinct epochs from 1680 to the present (Chapter 3), and

[2] I use the term "underserved communities" to acknowledge the lack of services (past and present) in this community and in the areas surrounding the reservation. Although the leadership at Ysleta del Sur Pueblo has substantially enhanced the infrastructure of the community, they are hindered by factors that are out of their control, such as lack of funding for nearby schools, poor supermarkets in the area, and challenges resulting from local and state politics. I am sure that the tribe will continue to address these issues.

that each epoch directly impacted the opportunities for health and wellness. Changes in economic practices, including shifts from an agricultural economy to various forms of wage labor, negatively impacted diet and exercise practices setting the stage for the present-day rates of the disease. To complement the tribal history, I propose that a tribal renaissance is taking place at the Pueblo which, if properly supported by the tribal leadership and health staff, will provide innovative opportunities for enhanced diabetes care and prevention.

This dissertation contributes to contemporary health services research by examining the Ysleta del Sur Community Health Center (Chapter 4), its individual-oriented biomedically based programs, and the structural challenges for diabetes management and prevention in this tribal community. I argue that the Community Health Center is engaged in management of diabetes at the individual level, a common model for diabetes prevention in clinical settings, but has yet to establish culturally appropriate population-wide activities that may prevent diabetes, other than those explored in this dissertation. This inability to expand into the population-wide realm is the result of structural practices at the Center that make it very difficult for the staff to develop new programs. The structural challenges I discuss include the indigenous staff having insufficient voice, lack of training in innovative health prevention models, patient non-compliance, stress among staff members, cultural incongruences between patient care and tribal beliefs, and conflicting health messages. The chapter closes with a presentation of experimental prevention programs that were developed during the research.

This dissertation departs significantly from contemporary health services research regarding type 2 diabetes in American Indian communities by examining communal religious practices and their possible connection to, and enhancement of, diabetes prevention. Unlike studies that use Western[3] prevention practices modified for use in American Indian communities (Edwards & Patchell, 2009), this research explores practices that have historically taken place in the Pueblo community and that may prove useful for future diabetes prevention initiatives, including community-defined religious practices such as religious gardens, pilgrimages, and dancing. In contrast to the individual-oriented models at the health center, I propose a complementary communal and community-based model of diabetes prevention and care that draws on traditional religious practices for health and wellness (Chapter 5). I argue that because the selected religious activities are accepted and practiced by large numbers of the Pueblo's population – across demographic boundaries – they can become successful components of diabetes prevention interventions precisely because they resonate with local ideologies concerning health and wellness while still meeting the biomedical requirements for type 2 diabetes prevention.

Individual-oriented biomedical care/prevention models are necessary for management of diabetes, but I argue that unless they are combined with effective prevention measures that are culturally sensitive, practiced community wide, and tribally significant, the incidence of diabetes will continue to rise. Therefore, this

[3] I use this word reluctantly because Ysleta del Sur Pueblo, like all tribes in the U.S., is part of the Western world. Dichotomies such as East and West are less useful given the globalization of practices, though they are still relevant when presenting practices that originate from within or outside traditional tribal practices.

dissertation addresses individual choice and identity to show how tribal members – both enrolled members and tribal descendants[4] – engage in diabetes care or prevention within their community given their own particular circumstances (Chapter 6). I present factors in the built environment[5] with which all members must contend, including how the built environment challenges exercise options or food choices, and I show how individuals navigate these obstacles and tensions alone or with assistance from family and friends. I also argue that individual practices differ greatly by generationally defined identities and suggest that a variety of tribally supported programs are necessary to prevent diabetes across the tribal community. Furthermore, I argue that encouraging and promoting the tribal renaissance that is currently underway will enable future prevention efforts to become a habitual part of daily life.

I conclude by discussing how the Pueblo leadership can continue to develop new programs and policies by, for, and within the tribal community. As diabetes prevention efforts shift from health clinics to dance grounds and bike trails, I explore the new tools, languages, data, and structures researchers might utilize to support a new epoch of wellness among Pueblos. I close with a discussion of the role that engaged anthropologists might play in future prevention efforts when they partner with communities to learn from and with them.

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[4] A tribal descendent is a community member who does not meet the blood quantum requirement as defined and imposed by the U.S. government and the state of Texas as part of tribal recognition. This unique requirement is discussed in Chapter 3.

[5] "Built environment," a term regularly used in public health, refers to human-made environments, similar to the term "site" in anthropology or cultural geography.

First, however, to understand the new possibilities for diabetes prevention in American Indian communities such as Ysleta del Sur Pueblo, I provide a necessary overview of the types of diabetes and why it has become a critical research topic, followed by a review of the current and emerging models for diabetes management and prevention.

Overview of Diabetes

Diabetes mellitus is the primary name for four related diseases: type 1, type 2, gestational, and medication-induced diabetes (American Diabetes Association, 2011). This research addresses diabetes mellitus type 2, also known as non-insulin-dependent diabetes life (NIDDM) or adult onset diabetes,[6] the metabolic disorder in which individuals' high blood glucose results in insulin resistance and/or and insulin deficiency.[7] Insulin is a naturally occurring hormone that regulates carbohydrate and fat metabolism in the body. It allows cells in the liver, muscles, and fat tissues to use glucose from the blood as a source of energy, and to change and store it as glycogen in the liver and muscle for future use. Insulin should be provided by the body at a regular rate to remove excessive glucose from the blood, before it reaches toxic levels. When the level of glucose in the blood falls below a certain level, the body begins to use the

[6] The term "adult onset diabetes" is no longer the preferred term since children as young as 11 have been diagnosed with the disease.

[7] In contrast to type 2 diabetes, with type I diabetes (formerly called juvenile diabetes because of the early age onset of the disease) individuals exhibit absolute insulin deficiency. The absolute lack of insulin in people with type I diabetes mellitus makes individuals particularly prone to ketoacidosis and associated liver problems.

sugar stored in various tissues, such as fat, by breaking down the glycogen and using it as a source of energy. When the body is not able to provide or control its insulin, it becomes diabetic. With many type 2 diabetics, patients are “insulin resistant,” meaning their insulin levels are insufficient or are *relatively* deficient.

The many symptoms of diabetes can appear individually or in concert. The symptoms include frequent urination (polyuria), increased and excessive thirst (polydipsia), increased hunger regardless of the amount of food consumed (polyphagia), chronic fatigue, blurred vision, slow healing of skin (including slow healing gums and frequent infections on the skin), urinary infections, numbness or tingling of feet or legs, heart disease, and weight loss (Gardner, 2011; Vijan, 2010). There is also some indication that memory and cognitive abilities decline, though more research is needed to elucidate the cognitive implications (Arvanitakis, Wilson, Bienias, Evans, & Bennett, 2004; Pasquier, 2010; Punthakee et al., 2012).

Complications resulting from poor management of type 2 diabetes and the co-morbidities that are often associated with the disease can negatively impact the livelihood and quality of life of individuals with the disease. Complications from diabetes may include a shortened life expectancy (by ten years), heart disease, stroke, neuropathy (ranging from ulcers and pain to amputation of extremities), autonomic neuropathy (digestive problems), renal failure, and retinopathy (blurred and impaired vision resulting in blindness) (Larsen et al., 2011). Co-morbidities include obesity, hypertension, dyslipidemia, and depression (Arvanitakis et al., 2004; Pasquier, 2010; Punthakee et al., 2012).

Incidence of diabetes is dramatically increasing on the global level as a result of population aging, urbanization, and dramatic lifestyle change (Zimmet, Alberti, & Shaw, 2001). An estimated 285 million people worldwide have diabetes mellitus, reflecting a doubling of the incidence in the just three decades (Danaei et al., 2011; Shaw, Sicree, & Zimmet, 2010). By 2030, 439 million people are expected to have diabetes mellitus, nearly 7.7% of the adult population (Shaw et al., 2010). In the United States, approximately 25.6 million, or 8.3% of the population, have diabetes, and 11.3% of all individuals 20 years of age or older have diabetes (National Center for Chronic Disease Prevention and Health Promotion & Division of Diabetes Translation, 2012).

After adjusting for population age differences, 2007–2009 national survey data for people aged 20 years or older indicate that 7.1% of non-Hispanic whites, 8.4% of Asian Americans, 11.8% of Hispanics, and 12.6% of non-Hispanic blacks had been diagnosed (Division of Diabetes Translation & National Center for Chronic Disease Prevention and Health Promotion, 2011). Diabetes rates among Native Americans vary widely within the seven geographic service regions of the Indian Health Services of the United States:[8] as low as 5.5% among all American Indians in some communities to 33.5% among American Indian adults in southern Arizona (National Center for Chronic Disease Prevention and Health Promotion & Division of Diabetes Translation, 2011).

[8] The seven regions are Alaska, Great Lakes, Northern Plains, Pacific, Southeast, Southern Plains, and Southwest.

Models of Diabetes Care and Prevention

There are currently two dominant models, and one emerging model, of diabetes research and intervention among American Indian peoples: (1) individual-oriented biomedical models developed predominately for white, Western populations that are applied both to the general U.S. population and to American Indian peoples; (2) modifications, adaptations, or translations[9] of these programs for application in non-white communities, including American Indian communities; and (3) emerging models of communal prevention in which intervention activities come from local cultural practices and are then enhanced with biomedical practices. Situated on a spectrum, the first model has a historical foundation of individual-oriented clinical research, usually on white populations or what Henrich, Heine, and Norenzayan have recently recognized in behavioral health research as "Western, educated, industrialized, rich, and democratic cultures," or WEIRD cultures (2010). In most health studies and interventions, the authors argue, minority participants are not represented. Because so many of the studies and care practices stem from this unrepresentative population, it is likely that researchers either miss important variations and practices or wash over them altogether.

The second dominant model builds on the first by embedding "cultural" modifications, adaptations, or translations of biomedical clinical research for application in non-white communities. These programs are implemented in a more nuanced

[9] "Translation" is the term used by the National Institutes of Health and the Centers for Disease Control and Prevention for programs and methods that have been modified from the clinical setting for application in "real world" community settings.

manner because of the inclusion of various cultural practices, however defined, in the health interventions. However, these programs rely on the ideologies and practices gleaned from research with WEIRD populations and not from the local indigenous peoples. As I explain, these programs add local indigenous cultural practices into interventions in order to imbue the WEIRD interventions with local practices. The suggestion is that by embedding the programs with "culture," the interventions will become more engaging or palatable for the populations they serve. In these programs culture becomes an object that stands for, yet masks, the fields where meaningful action and engaging culture practice could take place (Ferzacca, 2012, p. 420). Closer observation of these programs shows that if the programs were implemented in non-tribal settings they would not differ greatly from their tribal counterparts (Joe & Frishkopf, 2006).

Individual-Oriented Biomedical Models

The roots of contemporary individual-oriented biomedical models for type 2 diabetes care and prevention lie in the history of research on both type 1 and type 2 diabetes. Clinical research dates to 1776 when glucose was first discovered in urine (Dobson), though no known advances were made for more than one hundred years. In 1889, glucose management was linked to the pancreas (Brogard, Vetter, & Blickle, 1992; Sachs, 1993), and by 1922 insulin was discovered and then used to successfully treat a young white patient (Banting, Best, Collip, Campbell, & Fletcher, 1991; Bliss, 1984; Geyelin, Harrop, Murray, & Corwin, 1922). From that time through the late 1970s the need to cure diabetes merged with advances in chemistry, biology, and physiology to

support landmark studies concerning the disease. Advances were made in understanding insulin resistance (Himsworth, 1936), the sequencing of insulin proteins (Sanger, 1945; D. F. Steiner & Oyer, 1967), and genetic factors regarding the heritability of the disorder (Ahlqvist, Ahluwalia, & Groop, 2011; Stolerman & Florez, 2009).

The genetic research conducted in the 1960s provided an avenue for culture to enter the discussion when, in 1962, James V. Neel developed the "thrifty gene" hypothesis (Neel, 1962). Neel argued that through natural selection, humans evolved efficient ways to store and use food in the body. As humans went through cycles of feast and famine, the individuals who were better able to store the foods in times of "feast" were more likely to survive during times of "famine." After several generations, genetic changes would make "fat" humans more efficient at storing and using food. However, in situations with consistently abundant food, this genotype prepares individuals for a famine that never arrives, and as a result there is an incongruence between the environment in which the brain evolved and the present-day environment, resulting in widespread obesity and, eventually, diabetes.

In the late 1970s and 1980s, following a wave of research that improved the understanding of the biomedical structure of diabetes, researchers began to explore the possibility of self-management. The development of home glucose monitoring, accurate measurements of glycated hemoglobin (Nathan, Singer, Hurxthal, & Goodson, 1984),[10] insulin pumps (Nathan et al., 1984; Tamborlane, Sherwin, Genel, & Felig, 1979), and

[10] Also called hemoglobin A1c, HbA1c, A1C, Hb1c, or HbA1c, it can be used to measure the average glucose level over a set period of time.

combined and biosynthetic human insulin made it possible for individuals to self-test, inject, or otherwise manage their insulin levels.

Major advances in diabetes prevention did not occur until the early 2000s, when research shifted to understanding the many different symptoms and individual risk factors of type 2 diabetes in order to design protocols to counter the disease. In a series of landmark studies, clinical researchers found that diabetes could be prevented or delayed. The Diabetes Prevention Program research group (DDP) was a randomized clinical trial funded by multiple components of the NIH, with the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) as the lead agency (Knowler et al., 2002). From 1996 to 2001 this groundbreaking study sought to determine whether lifestyle intervention or pharmacological therapy with metformin[11] would prevent or delay the onset of diabetes in individuals with impaired glucose tolerance (IGT) who are at high risk for the disease (Knowler et al., 2002). Results indicated that individual-oriented lifestyle intervention reduced the incidence of diabetes by 58% and metformin use reduced the incidence by 31%, as compared with a placebo.

Other research quantified the effect of individual prevention measures and showed that modifiable social, lifestyle, and environmental factors as well as non-modifiable genetic factors impacted incidence of the disease (Chen, Magliano, & Zimmet, 2012). Modifiable factors—those that individuals can change or influence with behavioral interventions—included being overweight or obese, lack of physical inactivity

[11] Metformin is an antidiabetic drug that is given to obese or overweight individuals to help them counter diabetes. It has been shown to reduce complications and mortality rates associated with the disease.

or sedentary behavior, a variety of negative dietary factors, smoking, previously identified glucose tolerance (IGT and/or IFG), abnormal lipid levels (elevated triglycerides, low HDL cholesterol levels), hypertension, and inflammation. Non-modifiable risk factors, or those that an individual cannot change, included age, sex, ethnicity, family history of type 2 diabetes, history of gestational diabetes, and impaired fasting glucose. Recent studies identified other factors, including sleeping disorders (Shaw, Punjabi, Wilding, Alberti, & Zimmet, 2008), lack of sleep caused by environmental factors (Touma & Pannain, 2011), and depression (Mezuk, Eaton, Albrecht, & Golden, 2008).

Largely because of the success of biomedical clinical studies that explored the symptoms, risk factors, and methods for preventing or delaying diabetes, programs focused increasingly on individual care and management. The National Diabetes Education Program (NDEP), founded in 1997 to "improve diabetes management and outcomes, [and] promote early diagnoses" (Department of Health and Human Services, 2011), paved the way for institutionalization of individual-oriented biomedical practices in the United States. In 2000, a partnership between the NIDDK, the Division of Diabetes Translation at the Centers for Disease Control and Prevention, and 200 partner organizations worked together to set guidelines to prevent or delay the onset of diabetes in the United States and its territories (Clark, 1999; Clark et al., 2001).

Based largely on these landmark studies, the National Diabetes Education Program (NDEP) focused, in part, on increasing individual awareness of A1C, blood pressure, and cholesterol targets—what it called the "ABCs of diabetes." By targeting

middle-aged and older Americans, the NDEP hoped to (a) increase awareness of risk factors for type 2 diabetes and diabetes risk tests, (b) increase awareness that type 2 diabetes can be prevented by taking small steps to reduce body weight, and (3) Increase knowledge of the four fundamental ways to control diabetes: a diet with less fat and carbohydrates and more (appropriate) vegetables and fruits, regular physical activity, taking medications as prescribed, and working with the health care team to address standard issues as well as complications (Clark et al., 2001; National Diabetes Education Program, 2013).

Many of the guidelines supported by the NDEP were tied to an individual's ability to "control" his or her lifestyle through "empowerment." Theories of control developed in the 1960s to explain how individuals conceptualize their ability to control their decisions given a combination of internal agency and external environmental factors (Rotter, 1966) were applied in diabetes management and prevention programs. As the theories explained, individuals have either an internal or an external locus of control. If an individual has internal control, they believe they can alter the world through their own events. If individuals have an external locus, they believe that they are unable to alter the world around them, regardless of what they do. Consider, for example, the locus of control in regards to blood sugar testing. If individuals with an "internal locus of control" fail to test their blood sugar levels three times a day, they may explain their inability as a lack of discipline. In contrast, individuals with an external locus of control may explain that they were unable to test three times a day because their blood sugar tester was difficult to use.

Nuanced theories of control play an increasingly important role in diabetes prevention programs. Perceived control, also called primary control, and secondary control are linked to an individual's perceived ability to control an illness. With primary control, individuals believe they are able to change their environment and by their own actions can prevent an illness (Rothbaum, Weisz, & Snyder, 1982). For example, an individual may believe he or she can prevent diabetes by walking daily. Secondary control occurs when individuals adapt their belief systems to make sense of a given situation (Rothbaum et al., 1982). Variations occur, for example, when an individual says that he or she is unable to prevent diabetes by exercising outside because it too hot to exercise. These individuals show primary control by recognizing how to prevent diabetes, yet they also show secondary control because they change their prevention action to meet the current circumstance and hence feel their behaviors are dictated by external forces.

Along with control, empowerment and mastery are common themes in the literature regarding prevention or management of chronic diseases, including diabetes. In diabetes prevention and management, empowerment is defined as "helping patients discover and use their innate ability to gain mastery over their disease" (Funnell & Weiss, 2009). Individuals feel "empowered" or a "sense of empowerment" when they believe they are capable of improving their health status or controlling diabetes, and are linked to both the knowledge and the tools to do so (Oyer, Niemeyer, & Moses, 2012). When individuals are able to maintain their disease over a prolonged period of time by

repeating a skill (such as testing blood sugar regularly), they shift from perceived control to mastery (Grey, Schreiner, & Pyle, 2009).

Advances in biomedical knowledge about diabetes prevention, combined with theories of control, have led to a variety of standards of individual self-care and clinical practice for the general population as well as Native peoples (Indian Health Service, 2011). Practices include identifying populations at risk for diabetes; providing intensive lifestyle interventions such as training in diet, physical activity, and behavior modification; requiring patient-doctor follow-up; using medical protocols; and monitoring patients for progress (Funnell et al., 2011).

Typical individual-oriented biomedical models for adults offer a series of group classes where specific skills are taught to individuals (Cook & Hurley, 1998; Harvey-Berino & Rourke, 2003). The Group Lifestyle Balance Program, an adaptation of the Diabetes Prevention Program (Kramer et al., 2009), is a standard and effective (Ali, Echouffo-Tcheugui, & Williamson, 2012) diabetes education and prevention program for the general public (Kramer, McWilliams, Chen, & Siminerio, 2011). This program is a 12-session group lifestyle intervention adapted from the DPP lifestyle intervention with a similar goal of weight loss and physical activity. Diabetes educators teach an approved curriculum in 12 to 14 one-hour weekly sessions to groups of 7 to 16 participants. All participants receive an assortment of handouts, weekly self-monitoring booklets, fat- and calorie-tracking books, and a pedometer.

Programs for minors follow a similar structure in which an individual-oriented skill or activity is taught in a group setting. A school-based nutrition and education

program implemented at the Gila River Pima reservation in Arizona, for example, sought to improve and increase physical activity among children (Broussard et al., 1995). Students aged 6 to 10 participated in a daily walking and jogging program that was added to an existing physical education class. A team of health educators supported this with home education so activities could continue outside school hours. The program was considered a success when participants in the program walked significantly farther in a 9-minute test than the control group. Unfortunately, program sustainability has not been described.

The individual-oriented biomedical model of diabetes management and prevention focused on clinical research and resulted in individual-oriented biomedical practices. Programs such as these are important because they provide essential skills for individuals to prevent or manage diabetes. However, incidence of the disease continues to rise, particularly among American Indian populations. Largely for this reason, research regarding diabetes in American Indian communities has expanded to include a second model that aims to enhance interventions by embedding them with relevant cultural practices.

"Culturally Embedded" Individual-Oriented Models

To address the growing incidence of diabetes in American Indian communities a model with a variety of "culturally embedded" interventions emerged in the 1980s. This model examines the beliefs and practices of Native peoples regarding health and wellness, and the etiology of diabetes, to enhance interventions. These programs, discussed below, attempt to blend biomedical models of health and wellness for

prevention and management of diabetes with local indigenous ideologies and "culture." Within these studies, I argue, "culture" is often portrayed in static terms and is believed to be divisible into discrete and static elements such as a clan emblem, a talking circle, or other distilled values, beliefs, or tradition (Engebretson, Mahoney, & Carlson, 2008). Although some studies problematize these static portrayals (Ferrira & Lang, 2006), the cultural elements are frequently viewed as constant, persistent, and "reversible social and lifestyle factors" (*Lancet,* 2010). Regrettably, acceptance of this static use of culture hinders program innovation. The programs I discuss below may be more effective than strictly individual-oriented biomedical approaches, they have yet to expand beyond individual care practices and in most cases are simply Western practices that embed an abstracted cultural practice into a group setting.

Early diabetes research with American Indian peoples followed the individual-oriented model in fits and starts for nearly 20 years before shifting to a more nuanced model that attempts to incorporate specific cultural practices. Diabetes research in American Indian communities began in 1945 with a study that examined the incidence of diabetes among the Pima of Arizona (Parks & Waskow, 1961). In 1965, a study recognized the high rates of diabetes among Choctaw Indians (Drevets, 1965) and in late 1970s a group of scholars explored the relationship between blood quantum and diabetes among the Mandan, Arickara, and Hidatsa Indians of North Dakota, suggesting "researchers should realize that most tribes are racially heterogeneous and that disease rates may vary according to degree of racial admixture" (Brosseau, Eelkema, Crawford, & Abe, 1979, p. 1278).

In the early to mid-1980s, diabetes research among native peoples continued to explore genetic aspects of diabetes. A study among Oklahoma Indians, for example, examined the relationship between diabetes, parental diabetes status, and obesity to show the frequency of diabetes among siblings was significantly higher in families with affected parents than in those without diabetic parents (Lee et al., 1985).

By the mid to late 1980s, studies began to shift from strictly genetic research. A study among Pima and Papago (today called Tohono O'odham), for example, argued that "prevalence rates of several diseases, including type 2 diabetes, vary with ethnicity" (Knowler, Williams, Pettitt, & Steinberg, 1988, p. 524). Other studies among the Pima examined renal disease (Nelson, Newman, et al., 1988) and concluded that age, plasma glucose, and insulin levels are the best predictors of clinical outcome (Saad et al., 1988), and that physical activity may be a predictor for type 2 diabetes (Nelson, Everhart, Knowler, & Bennett, 1988).

During this period, researchers began to recognize differences in the incidence of diabetes among native peoples, particularly those in New Mexico and Arizona (Carter et al., 1989; Nelson, Everhart, et al., 1988), suggesting that non-genetic factors may be associated with incidence of the disease. Some scholars recognized that "cultural and dietary changes" were a factor in type 2 diabetes, yet they continued to argue that this occurs in populations that are "genetically susceptible to diabetes" (Knowler, Pettitt, Savage, & Bennett, 1981). These scholars called for further research to examine within-population differences.

In the 1990s and 2000s, researchers began to find that the strictly individual-oriented biomedical model of diabetes care and prevention was not resonating with American Indian ideologies concerning health and wellness. Many of the programs in place in American Indian communities promoted Western medical models in which health is solely the responsibility of the individual (Link & Phelan, 1995; Raphael, Curry-Stevens, & Bryant, 2008). These ideologies often conflict with various American Indian cultural practices or beliefs regarding health, such as holistic perspectives in which the physical body, mind, spirituality/religion, and environment are interconnected (Hodge, Limb, & Cross, 2009; King, Smith, & Gracey, 2009). As such, an imbalance in one or all of these factors can be understood as the cause of ill health, and a change in one component may impact another.

Despite advances in understanding the local context of diabetes, most programs continued to develop protocols that focused on individual-oriented models, only they were embedded with local cultural practices. The following are examples of nutrition- and exercise-focused interventions for diabetes care and prevention in American Indian, Alaska Native, and Canadian First Nations. Each, I argue, embedded the underpinning individual-oriented biomedical model with thinly understood local cultural practices.

Lionel R. John Health Center/The Seneca Health Trail Blazers/Trails of the Iroquois embedded cultural practices into their programs. The clinicians asked participants to attend weekly social support sessions and track their educational progress with the assistance of a “clan animal” (Edwards & Patchell, 2009). Using a large board, participants moved an image of the animal across a map of the state of New York

along a trail from the tribal territory to those of other tribes across the state. As participants progressed through the classes they were also given leather and beading supplies to make mementos to remind them of their weight loss goals and other desired outcomes. Although the program did make strides to understand an important cultural practice – clan animals – it used them in a manner that verges on the inappropriate because clan affiliations are more significant than simple images might imply.

Other interventions have successfully used "talking circles," an Indigenous version of a focus group, to provide a setting in which individuals can share cultural experiences and best practices concerning diabetes prevention and management within specific communities (Struthers, Hodge, Geishirt-Cantrell, & De Cora, 2003). Talking circles, as used traditionally by Ojibwe and Lakota peoples, are "a process that establishes a safe non-hierarchical place in which all present have the opportunity to speak without interruptions" and are "regulated through the passing of a talking piece" of symbolic meaning (Umbreit, 2003). Talking circles are particularly useful because they provide a setting for individuals to discuss issues such as barriers to physical activity and other sociocultural factors that may impact health (Thompson et al., 2002). Although talking circles may be appropriate for some native peoples, particularly Plains people (Struthers et al., 2003), care should be taken not to arbitrarily expand the practice to other tribes, as some studies have done (Castro, O'Toole, Brownson, Plessel, & Schauben, 2009).

In 1999, the Eastern Band of Cherokee Indians developed and implemented a "culturally appropriate community action plan" called Cherokee Choices (Bachar et al.,

2006) to translate Western health practices to a Cherokee cultural setting. The goal of the Cherokee Choices intervention was to prevent type 2 diabetes among children. Key aspects of this program included an elementary school mentoring intervention, an adult worksite wellness intervention, and a church-based health promotion program combined with a social marketing strategy, including television advertisements and a television documentary series. Participants in the worksite wellness program met dietary and physical activity goals, had reductions in body fat, and expressed enthusiasm for the program. The supposed culturally appropriate aspects of the program were never explained, although it was implemented in various community centers and churches.

Thompson and colleagues (2008) conducted a community-based study of 200 young urban American Indian women who were randomized by fasting blood glucose (FBG) into intervention and control groups to examine the effectiveness of a "culturally influenced," low-intensity lifestyle intervention. Culturally influenced content in the final intervention included "didactic and discussion support of American Indian physical activities and dietary cultural strengths, examples of diabetes prevention approaches by tribal nations across the country, and graphics of Native women in the target age group" (Thompson et al., 2008, p. 193). The intervention group received a five-month program that consisted of monthly discussion groups on healthy eating, physical activity, setting goals, and social support. The study found that the intervention group greatly increased their intake of vegetables and fruits relative to the control group. Both the intervention and control groups demonstrated significant decreases in waist circumference, insulin

sensitivity, total blood cholesterol, saturated fat, and sugar consumption (Thompson et al., 2008). Because the long-term impact of the program was not evaluated, it is not known whether the adaptations were successful.

The Sandy Lake School-based diabetes prevention program was a curriculum-based intervention for Ojibwe-Cree students in the third, fourth, and fifth grades (Saksvig et al., 2005) that also said to be "culturally appropriate." Adaptions included incorporation of local themes such as feasts, "learning from elders," and the use of storytelling as a way to introduce the main concepts of the health education lessons. The stories introduced the diabetes curriculum by following the activities of "Missy and Buddy Daaybway" as they learn from an older family relative about the importance of living a healthy lifestyle to prevent diabetes (Saksvig et al., 2005). To test the effectiveness of the intervention, the study utilized a pretest/post-test, single-sample design conducted during the 1998-1999 school year and showed significant increases in dietary intention and preference, knowledge, and dietary self-efficacy. This program showed an improved knowledge related to healthy eating and dietary fiber intake of students in this remote First Nations community.

A program at a New Mexican Pueblo which wishes to remain anonymous also utilized stories for a lifestyle intervention and a diabetes education program (Gilliland, Azen, Perez, & Carter, 2002). In a series of six weekly group education classes, a community coordinator "incorporated traditional Native American values" and wrote stories, explained as "traditional methods of Native American learning," for use throughout the intervention. To supplement the material, Native American foods and

Native American individuals engaging in healthy lifestyle behaviors were featured in videos. An evaluation one year following the intervention found that lifestyle changes were maintained.

The Lifestyle Balance Program (Jiang et al., 2013) was a 22- week comprehensive program that adhered to the Diabetes Prevention Program curriculum coordinated nationally by numerous facilities. Participants met weekly as a group and individually with a diabetes coach on a regular basis. Weekly lessons were modified by local grantees using "local culture" to translate educational concepts and curriculum into tribal languages and to "incorporate, for instance, talking circles, indigenous foods, or drumming into intervention sessions" (Jiang et al., 2013, p. 2028). The program included lessons to help establish healthy eating habits, defined in the study as low-calorie foods, lessons in low-fat meal planning, and suggestions for moderate physical activity, such as brisk walking. As was the case with other studies, this program focused on individual change and only introduced cultural practices in order to improve the connection between the individual participants and the coordinators.

Numerous studies developed interventions that address physical activity among native peoples in a manner that attempt to embed native ideas of health and wellness (Brunet, Plotnikoff, Raine, & Courneya, 2005; Coble & Rhodes, 2006; Ho, 2007; Kriska et al., 2003). The Zuni Pueblo Diabetes Project in New Mexico, for example, explored ways to increase aerobic activity among members and developed a "culturally appropriate fitness series" in which participants engaged in walking, biking, skiing, or other activities (Leonard, Leonard, & Wilson, 1986). It is unclear, however, if the "culturally

appropriate" modifications included anything more than a t-shirt with an Eagle Dancer printed on it.

Several programs at Zuni Pueblo have incorporated locally accepted communal prevention practices for various age groups (Ritenbaugh et al., 2003; Teufel et al., 1999; Teufel & Ritenbaugh, 1998). Researchers worked with more than 400 students in grades 9-12 to enhance utilization of an in-school Teen Wellness Center that housed weights, a rock-climbing wall, bikes, roller blades, and boxing gear. The center, a necessary expenditure given the warm summer temperatures and cold winters, was used for physical education classes and for guided afterschool activities. Trained teenagers monitored all activities, and the staff organized additional linked climbing, hiking, and swimming camps and trips off-site. This program had an excellent success rate, with participants recording decreased sitting, standing, and recovery heart rates as well as significant decreases in hyperinsulemia[12] and body mass index.

Two programs conducted by a team of researchers at the Gila River reservation, Pima Pride and Pima Action (Narayan et al., 1998), sought to promote group or solo activities that supported healthier lifestyles. Participants were encouraged to participate in a variety of activities, including walking with community mentors, water aerobics, softball, or community service such as gardening and caring for local cemeteries. Participants recorded significant increases in physical activity and significant decreases in waist circumference.

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[12] In hyperinsulinemia, or hyperinsulinaemia, higher than expected levels of insulin are circulating in the blood relative to the level of glucose.

A Ho-Chunk Youth Fitness Project in Wisconsin (Carrel, Meinen, Garry, & Storandt, 2005) aimed at dietary and exercise instruction and intervention involved 38 Ho-Chunk children and non-native children 6-18 years of age. All children went through preliminary and post-24-week evaluations that consisted of a medical exam, a nutrition and exercise assessment, metabolic testing of fasting plasma insulin, and measurement of plasma glucose, plasma cholesterol, and percent body fat. The community-based intervention consisted of twice-weekly classes with supervision for both nutrition and exercise. Mean fasting plasma insulin levels decreased for the intervention population, and the researchers concluded that supervised nutrition and exercise classes were an effective means to reduce the risk of insulin resistance and the onset of type 2 diabetes (Carrel et al., 2005).

Regrettably, relatively few exercise programs implemented in American Indian communities have been evaluated over the long term (Coble & Rhodes, 2006), and recent reviews have called for additional research that evaluates exercise training programs among native peoples (Foulds, Warburton, & Bredin, 2013).

Several interventions attempt to modify diet by substituting “traditional” ceremonial foods with healthier alternatives that use less fat, salt, and refined grains (Cantrell, 2001; Conti, 2006; McFee, 1997; *Native Peoples,* 2004). Regrettably, these programs have not been evaluated, a limitation of many interventions in American Indian communities, and the long-term benefits of the programs have yet to be determined.

Although the culturally embedded models of diabetes prevention are more nuanced than the individual-oriented biomedical models, they are based, at their foundation, on Western ideologies of health and wellness. In contrast to these two models, a new model of care is emerging: *communal* prevention practices.

Emergent Model of Care: Communal Wellness Practices

In contrast to the two models for diabetes care, some research and interventions have pushed beyond individual-oriented biomedical models or culturally embedded models to explore an emergent model in which emic communal wellness practices are harnessed for local programs (Satterfield, DeBruyn, Burns, & Baldridge, 2008; Satterfield et al., 2007; Wilson & Satterfield, 2007). Among many native peoples, knowledge is intimately linked to local cultural practices. Public health researchers have recognized these knowledge systems and have developed programs which facilitate sharing of success stories concerning healthy foods, tribal histories (Conti, 2006; Dapice, 2006), and opportunities for changes in diet (Satterfield & Reid, 2003). In addition, interventions have explored metaphor and storytelling to examine the culturally specific meanings that underlie diabetes and diabetes management (Hagey, 1984).

In this emerging model, interventions are shifting from singular community-wide interventions to programs that focus on subpopulations within Indian communities, enabling researchers to consider local cultural practices in greater detail. Focusing on subgroups, such as mothers, provides theoretical space for recognizing that cultural practices are never static, a concern which has been voiced by several researchers (Satterfield et al., 2007; Willging, Helitzer, & Thompson, 2006). In one study with

American Indian elders, for example, the author identified two divergent models of diabetes in terms of health behaviors and cultural identification (Henderson, 2010). One model was characterized by delayed care-seeking, and a negative evaluation of adherence to diabetes self-care. Lack of adherence to medical recommendations was perceived by the patient as being socially desirable because adherence placed the elder outside his or her peer group. Early care-seeking and improved adherence to diabetes self-care characterized the second model (Henderson, 2010). These divergent models of diabetes, in which care-seeking, diabetes self-care, and adherence vary as a function of cultural immersion, have implications for health education and disease management and may contribute substantially to health disparities.

In recent years, the agricultural practices of Southwestern Native peoples have been explored independent of health research (Nabhan, 2002; Vlasich, 2005), and a number of wellness programs are using this agricultural research as part of health interventions. Several diabetes programs are examining the use of gardens as sites for diabetes education. Gardens and farm fields have been essential components in American Indian life for thousands of years. Recently these small-scale agricultural locations been defined as "community gardens."[13]

Gardens are appealing to the people who design interventions because they engage with local cultural practices and histories while meeting the goals and aims of diabetes prevention programs. In a pivotal commentary on how food choices have

[13] The term "community garden" is recent, having been introduced in the United States after World War II. Wills (1988) offers a detailed examination of prehistoric famers of the American Southwest.

become colonized, Devon Mihesuah (2003) proposed using changes in diets and community gardens as way to decolonize or de-Westernize food options in American Indian communities. In an eloquent section titled "Why Return to Our Gardens?" the author proposes numerous ways to make eating habits more healthy, including "Planting and cultivating gardens large enough to feed our families and to keep us active." Though some of the suggestions are unrealistic for families with working parents, the research served as an opening for a discussion connecting diabetes prevention, management, and gardening or farming.

The White Earth Land Recovery Project (WELRP) at the White Earth Reservation of Ojibwe in northern Minnesota (Omura, 2006) was an innovative program that addressed type 2 diabetes prevention utilizing gardens. The program sought to build a locally grown food program to assist individuals with diabetes, particularly elders. From the community's perspective, diabetes is a symptom of loss and is best addressed through holistic approaches to food production and related support activities, including development of cookbooks and engagement at powwows. These Ojibwe tribal practices are part of a resurgence of tribal identity on the reservation. As explained by one individual affiliated with the program, "It's not just a medical program, and it's not just a preventative health program . . . it's a cultural restoration program." Rather than adapt a program by embedding it with isolated or decontextualized aspects of the local culture, this program begins with local cultural practices and expands to meet the biomedical needs of diabetes prevention and wellness.

The programs developed as part of the emergent model of diabetes care and prevention are different from the earlier models in many regards. First, they build on activities that are already present in the communities, whether traditional agricultural practices or contemporary youth activities. Second, each of these programs recognizes that cultural practices, like the individuals that shape it, are not static, and as such a variety of practices should be provided for diabetes management and prevention. Third, the programs are unique because a wide variety of community members from across the reservations are engaged in the activities. For example, in the Earth Land Recovery Project, some individuals are involved with farming and harvest activities, others with distribution, while others are consumers.

The emerging model for care and prevention, communal prevention practices, has the potential to engage communities in a manner that is more accepting and more successful than that found in previous research. Although gardens are the first concrete practice to emerge, there are undoubtedly countless other possibilities. This dissertation explores this potential by examining the individual-oriented biomedical models and emerging models at Ysleta del Sur Pueblo.

Structure of the Dissertation

This dissertation addresses type 2 diabetes care and prevention practice at Ysleta de Sur Pueblo. The first part of the dissertation provides the context of this research and the second part provides its findings. Chapter 2 introduces the geographic location of the research, explains how I came to form a research partnership with the Pueblo, and discusses the challenges I encountered in the field. I also present the research and

data collection methods. I worked with a select team to choose certain research methods over others, and to integrate clinic and other tribal employees in some phases of research and not others.

Chapter 3 further contextualizes this research by providing the historical and political economic context of Ysleta del Sur Pueblo. This chapter shows how type 2 diabetes took hold in the community after shifts in tribal economies, local diets, and changes in the built environment. Five epochs are explored from 1680 to the present, each of which, I argue, has impacted diabetes prevention and management.

Chapter 4 examines the Ysleta del Sur Pueblo Community Health Center, its individual-oriented biomedical programs, and various structural challenges for diabetes prevention and management in this tribal community. The chapter closes with a presentation of experimental prevention programs developed during my research, including healthy living workshops, preschool educational workshops, a youth garden, and teen nutrition workshops.

In Chapter 5, I examine community practices in the broader Pueblo community that may prove useful for diabetes prevention, particularly in regards to promoting regular exercise. I present a variety of religious activities including pilgrimages, dancing, and gardening practices. These activities, I argue, are accepted at the Pueblo and, if linked to diabetes prevention activities in a culturally sensitive manner, have the potential to become accepted and useful means of diabetes prevention, in addition to their religious significance.

Chapter 6 examines individual choice and identity to show how individuals engage

in diabetes management or prevention within their community. I discuss knowledge, attitudes, and behaviors associated with diabetes prevention and management. I then link individual practices to generationally defined identity and suggest that a variety of tribally supported programs are necessary to prevent diabetes across the tribal community.

In the conclusion, I discuss programs that have been developed by the Community Health Center since I completed my fieldwork and I provide a series of policy considerations for future diabetes prevention and management efforts. I conclude with a discussion how this dissertation research contributes in an interdisciplinary manner to the fields of anthropology and public health. The primary contribution of this dissertation is to broaden both the prevention and treatment efforts of type 2 diabetes beyond individual-oriented biomedical models and culturally embedded models to take treatment and prevention beyond health centers and patient-doctor interaction. My argument is not to lessen or jettison the individual models of care, however, nor to elevate the cultural models to the clinical realm. Instead, I hope to show how we can consider subpopulations within communities and develop educational strategies using emergent models of care and prevention.

Chapter 2: Introduction to Research Local and Methodology

Figure 1: Reservation boundary marker at Ysleta del Sur Pueblo.

Photo by author.

This research utilized community-based participatory research at Ysleta del Sur Pueblo, Texas. In this chapter I discuss my positionality as a medical anthropologist returning to my hometown to conduct research. I also provide a detailed description of the research locale, the research approach, and methods.

Introduction to Research Locale

The Lower Valley of El Paso, where Ysleta del Sur Pueblo is located, is home to two overlapping and distinctive communities: an urban Mexican barrio that overtook its agricultural past and a checkerboard reservation consisting of noncontiguous blocks of land replete with large signs marking the borders of the federal Indian reservation (Figure 1). To most residents of the valley the area is simply a network of seemingly randomly placed canals and streets. However, the Pueblo community recognizes the

sacred trails and urban properties that recall the first night tribal members stayed in the area following the Pueblo Revolt, a landmark event that dislocated the tribe, and that the irrigation canals once enabled the tribal community to raise an assortment of vegetables and fruit.

The irrigation canals bisect and connect a complex urban landscape. Among colorful houses with yards full of potted flowers and large outdoor altars, the neighborhood is riddled with graffiti "tags" from VNE (Vario/Barrio North East) or TS (Texas Syndicate), two notorious gangs that are active on the international border. Side by side one might see the modest house of an elderly couple juxtaposed with the 12-foot-high razor-wire walls protecting the massive estate of a prominent drug dealer. The area is now nicknamed "Hollywood" because of the large houses and palm trees. With a trained eye one might even notice the many unmarked vehicles from any of the six policing jurisdictions that patrol this border community,[14] or the residents that cautiously eye them when they are spotted in the neighborhood. Indeed, this border is a complex place.

[14] The region is policed by the El Paso Police Department, El Paso County Sheriff's Department, the U.S. Treasury's Alcohol, Tobacco, and Firearms, U.S. Department of Homeland Security, U.S. Border Patrol, and the Ysleta del Sur Pueblo Tribal Police.

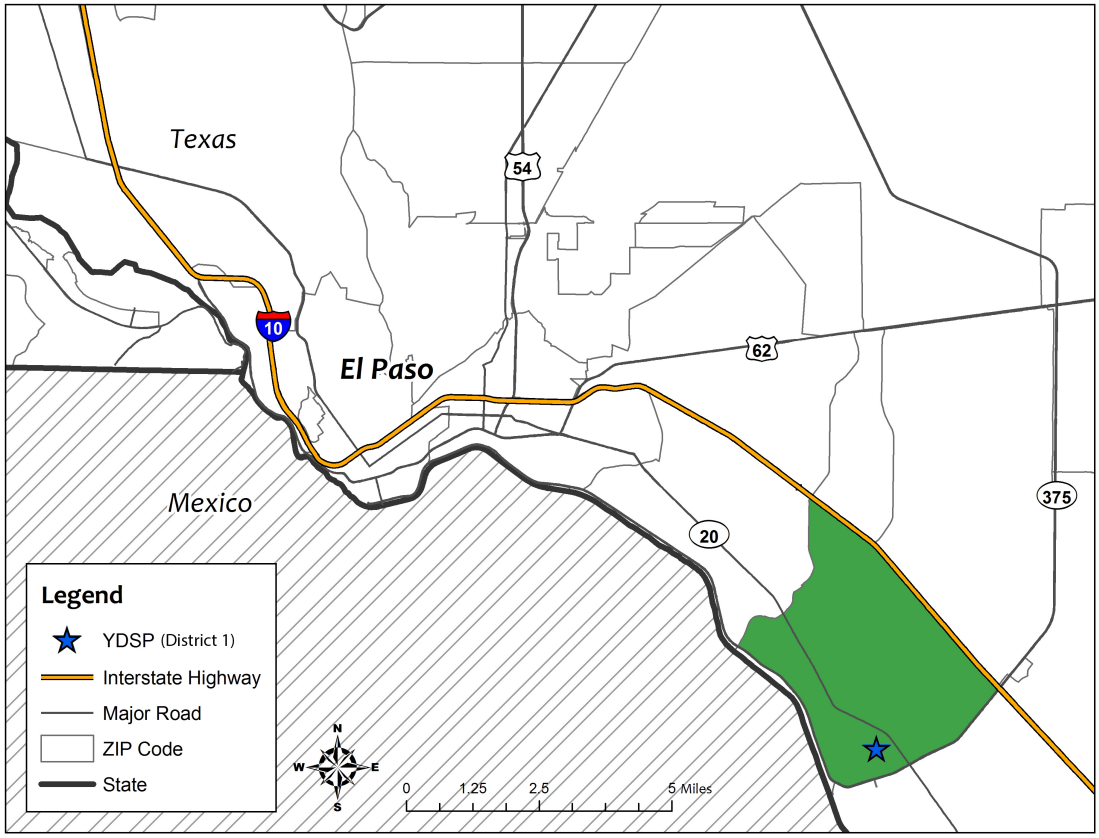

Figure 2: Map of El Paso. The Lower Valley is highlighted in green.

The Lower Valley of El Paso is one of the largest regions of the city. Framed by highways and the international boundary with Mexico, the neighborhood looks like many of the barrios along the U.S.-Mexico border. One enters the area along Alameda Avenue, once one of the great auto cruising roads in El Chuco.[15] Much like the famous Route 66, this street is a hub of activity and transportation. The streets are lined with *panaderías* (bakeries), *chicharronerias* (pork rind shops), *taquerías* (taco shops), the

[15] El Chuco, a derivative of *Pachuco*, is a style of dress that developed from the Zootsuiters in the 1920s and which later became the nickname for El Paso.

local bus station, and the iconic Ysleta High School with its inappropriate yet locally adored slogan, “Home of the Indians.”

Figure 3: Virgen de Guadalupe Mural. Photo by author.

About half a mile past the high school visitors see the large *Virgen de Guadalupe* mural, a landmark in the Lower Valley and the Catholic Mission at Ysleta del Sur Pueblo, the first signs that one is entering an American Indian community. To the left is the mixed Mexican and American Indian neighborhood, the Old Barrio de los Tiguas (Old Tigua Neighborhood), and the tribe’s primary religious and dance ground. To the right is New Barrio de los Tiguas, one of two tribal housing districts and the location of the Community Health Center. At the Community Health Center I conducted much of my research on diabetes care (see chapter 5) and at the dance ground I learned about deeply significant religious practices (see chapter 6).

My Return to the Border (Positionality)

I have had a long relationship with the U.S.-Mexico border. My mother’s family is from Mexico and has well-established ties to the region.[16] My great-grandfather, Aureliano S. Gonzalez, was governor of the state of Chihuahua and was active in the Mexican revolution. His son, Aureliano Gonzales Vargas, believed to be the first Mexican

[16] My father is a naturalized immigrant from Cuba.

to graduate from El Paso High School, was later mayor of Juárez, México, El Paso's sister city, in the late 1960s. I too was born in Cd. Juárez, and after living in South America,[17] I immigrated to El Paso with my family when I was six years old.

With such a strong family history in the region I grew up with a critical eye on the border. Throughout my grade school and high school years I would visit my grandfather in Juárez, and on the return trip to the U.S. I would look at the vast inequalities in the urban landscape while waiting in three hours of bumper-to-bumper traffic on the international bridge. The crossing provided plenty of time with which to view El Paso from a distant perspective. From high on the downtown "free bridge" I would look at and talk about the different neighborhoods with my parents. To the west was the neighborhood I lived in, the West Side, also called the Upper Valley. The West Side had many good schools, the reason why my parents moved to the area. In stark contrast to the West Side, in front of the bridge sat El Segundo, El Paso's Second Ward and second oldest neighborhood. This neighborhood had a long history in the growth of El Paso, but because its population was nearly all Mexicano, it was ignored by the local city government that until very recently was all Anglo.[18] To the far east of the bridge crossing, far beyond the horizon was the Lower Valley, rarely visited by my family and unknown to me at the time, my future field site. I would often talk with my parents about the neighborhoods, their names, and why they were so different. This dual-

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[17] My father worked for Beatrice Foods, an international company, and was employed in Colombia and Venezuela. The entire family moved to El Paso when my father started a small soap and industrial cleaning supply business.

[18] "Anglo," shorthand for Anglo-American, has become the common term for all "white" peoples in the American Southwest. I use it because it is the common terminology on the border.

country critical discussion seemed to prepare me to discuss structural inequalities and racism, both so pervasive on the border and personally experienced, especially since I am a Mexicano with an Irish name: Sean Patrick. It was common for Anglos to express racial slurs about Mexicans in my presence (or directly to me, once they learned I was Mexican). Mexicanos often assumed I was a *gringo* and unable to speak Spanish, and also would express racial slurs about Anglos. These experiences enabled me to look more critically at El Paso's structural inequalities—inequalities that would become overtly apparent and experiential during field research.

When the time came for me to attend college, an experience that was as complex and unsettling to me as the border, I moved to distant Chicago and was relieved because I could forget about El Paso. Once in college, my focus turned away from the border, and because of several new friendships I became a regular at American Indian powwows, first as an undergraduate student-researcher when I helped host a powwow for a course, and later simply to attend and travel with friends who were dancers or singers. The shift from working with individuals as research subjects to working with individuals as colleagues was shaped as a result of my college advisors, Dr. Raymond Fogelson and Dr. Terry Straus, now professors emeriti at the University of Chicago. In addition, several soon-to-become lifelong friends, powwow dancers and singers from a handful of tribal communities at the Indian Center of Chicago, taught me the value of community-centered research. Dr. Fogelson, a colleague of the late Dr. Sol Tax, the well-known applied anthropologist, and Dr. Straus, one of his students, instilled in me the idea that scholarly work, particularly ethnographic work, could be critical,

ethical, and useful for the communities that it addressed. Similarly, my friends at the Chicago Indian Center helped me keep my academic attitude in check, often reminding me that although I was a college student, “at least I was Mexican,” and therefore a person who was somehow not part of the exploitative subsection of the academic world that conducted research *on* and not *with* minority communities.

In time, however, my theoretical interests returned to the border. My decision to return to El Paso for graduate research was made in an unlikely place – the Amazonian region of Ecuador. While completing a Quichua language and ethnographic methods training course offered by the University of Arizona I found myself talking with one of the community philosophers, as I called her, about the purpose of research. In a series of conversations I came to realize that I flew half way around the world to speak with community members about local medical knowledge . . . and that I might never return. As the conversation progressed I became aware of the exploitative and colonizing character of anthropology. I realized that I did not need to leave the United States/Mexico to conduct research and that I might be able to provide valuable perspectives by looking inward and regarding communities with which I was more familiar, if not my own. In 2002, I returned to graduate school and completed a master’s thesis at the University of Chicago that examined the legal and cultural circumstances surrounding the forced closure of Ysleta del Sur Pueblo’s Speaking Rock Casino by the State of Texas (Bruna, 2003). The research shed light on the complex relationship between federal Indian recognition and local cultural practices, but perhaps more importantly, it refocused my critical eye on El Paso.

During my years of graduate school at the University of New Mexico, I became increasingly interested in what I was calling *engaged anthropology* and what the UNM Anthropology Department today might call "public anthropology" (Lamphere, 2004) or "anthropology put to work" (Field & Fox, 2007). With community engagement and reciprocity in mind, I contacted the Pueblo early in my training at UNM to express my interest in working with them. With the guidance of my advisor, Dr. Les Field, in August of 2005 I traveled to the Pueblo to meet with various individuals. Through a high school friend who worked for the El Paso City of Tourism I met Jim Montano, a respected elder and former governor of the Pueblo, on his last day of work with the city. I expressed my interest in researching a health topic in partnership with the tribe. Leaning back in a chair surrounded by boxes, Jim suggested that I research a topic that was mutually beneficial, what he called "good for you and good for us." After some thought (and what I thought was an awkwardly long silence), he proposed diabetes research. After mentioning the idea to other individuals I knew at the Pueblo, I returned to UNM to begin exploring this topic further. Over the next year I stayed in contact with a handful of individuals at the Pueblo and began attending public events to meet other community members. In June of 2006, following completion of a "Problem Statement" for my doctoral committee, I met officially with Dr. Edward Thomas, the director of the Community Health Center. Dr. Thomas showed me around the Pueblo the day before the annual *fiesta,* the St. Anthony Feast Day held on June 13, and explained the official process for gaining research approval, as well as the unofficial process that required that I meet with Tribal Council members and community elders in more informal settings. I

stayed in contact with the staff at the health center after I returned to Albuquerque, and seven months later, in January of 2007, I submitted a preliminary research proposal to the Tribal Council and was granted rights to visit the Pueblo regularly and to develop a formal research proposal. For more than a year I continued to visit the Pueblo while completing coursework and submitting funding proposals at the University of New Mexico. In August of 2008 I moved to El Paso to volunteer for the Pueblo's diabetes and afterschool programs, enabling me to learn about the community while writing the proposal; a little over a year later I had an approved dissertation research proposal and, subsequently, Institutional Review Board approval.[19] Though it took years to develop a partnership, the process proved to be worth the effort, as the partnerships and friendships I developed are strong and lasting.

Description of Research Locale

Ysleta del Sur Pueblo, one of three federally recognized tribes in Texas, and the only Pueblo in the state, is located on the far southeast side of El Paso and Socorro, Texas, along the U.S.-Mexico border (see map in Chapter 3). Health research in native communities often focuses on tribal reservations because funding is earmarked for tribal, state, or federal programs, not a combination of tribe and state/federal, or because memoranda of understanding between tribes and local health departments are often impacted by local political animosities. Research at Ysleta del Sur Pueblo, however, extends beyond trust land into the surrounding community because of the

[19] A detailed research timeline is provided in Appendix B and may be of particular interest to community-engaged researchers.

urban checkerboard character of the tribal lands, and because many health services are contracted "off reservation," a topic I address in Chapter 4. For this reason, I include a description of El Paso County and the surrounding neighborhoods.

El Paso County

Figure 4: Collecting Sepas (Saplings) for a Ceremony near the Border Fence. Photo by author.

El Paso Country, the westernmost county in Texas, shares a border with New Mexico and the Mexican state of Chihuahua. According to the U.S. Census, El Paso County has a population of 800,647, making it the sixth largest county in Texas (Texas State Library and Archives Commission, 2012). El Paso County is predominantly Latino, with 82.2% of the census respondents stating they are Latino (13.1% stated they are white non-Latino and 0.8% are American Indian). El Paso, one of the largest cities on the U.S.-Mexico border, has a population of 649,121, and its sister city, Ciudad Juárez, has an estimated population of 1.3 million (U.S. Census Bureau, 2010a). Residents on both sides of the border once traversed the international boundary frequently (if not daily) for work, for medical care, or, as I did, to visit family. In the past several years this has changed, given the recent violence in Juárez, and tribal members openly expressed that they do not visit Ciudad Juárez as frequently, if at all. On many occasions they refused to take me to Ciudad Juárez when I asked. This was particularly unfortunate as I hoped to visit all of the

boundaries of the Pueblo's original land grant, two portions of which are located in Ciudad Juárez. Possibly because of the extreme levels of violence in Ciudad Juárez,[20] individuals not only visited Juárez less frequently, they also visited places in El Paso less frequently, preferring instead to stay relatively close to the Pueblo, a topic I discuss in Chapter 4.

El Paso is bisected by the tail end of the Franklin Mountains, the southern tip of the Rocky Mountains, into a small and affluent West Side and large and growing east side. The east side is further divided by Interstate-10 into north and south sides, with the more-affluent north side adjacent to Ft. Bliss and the very poor south side adjacent to the U.S.-Mexico border.

The economic divide has created many structural inequalities, such as an inadequate sewage system on the south side, resulting in seasonal flooding (Dupont, 2012); the most dangerous train crossings in El Paso County (Licón, 2009); and, until 2009, lack of an adequate public transportation hub, even though a majority of bus riders in El Paso come from this area.

Going from one side of town to the other can take upwards of an hour by car, or all day by bus, and for this reason typically occurs only when individuals have a specific activity in mind, such as shopping at a particular store or making a day trip to visit a small farmers' market on the far west side. The division between east and west also

[20] Though major media outlets in El Paso and nationwide regularly said that the drug-related violence in Mexico was not being experienced in the U.S., there were instances of violence. A friend who was in the building at the time told me a bullet from an AK-47 shot from Mexico broke a window and was embedded in a wall of the El Paso City Council building. Others who lived in El Paso told me they regularly saw dead bodies during their daily commute to work in Ciudad Juárez.

serves as a local marker of social and class status. Living on the west side of town instead of in the Lower Valley, or having gone to Coronado High School instead of Ysleta High School, implies that an individual is of a certain ethnicity, income bracket, or even profession. For example, in a consultation with Community Health Center staff and Community Health Representatives I mentioned that I grew up in El Paso and was quickly asked what high school I attended. When I answered "Coronado High School," the health worker immediately joked, "OOOOh, Coronado! Well *here* we are all Indians," in reference to both the local high school (Ysleta) and its mascot, "The Indians." Many months later the same health representative was surprised to learn that I was living close to the health center in the Lower Valley. She explained, "I thought you would live on the West Side with the doctors," and seemed pleased to know I was living in her neighborhood. She was even more pleased when several weeks later I entered the health center wearing an "Ysleta Indians" softball shirt purchased at the local Wal-Mart.

The Lower Valley (Mission Valley)

The Lower Valley of El Paso is on the far southeast side of town. Framed by the Border Fence and two highways, the neighborhood is a mix of residential areas, aging industrial zones, and new commercial districts. Train tracks bisect the neighborhood, often bringing traffic to a standstill, and freight trains make sleep deprivation a common fact of life as "whistles" blow on average every 43 minutes, around the clock.[21] The area

[21] The most dangerous crossing is at Pendale Street, followed by New Haven Drive. These crossings are less than ½ a mile apart (and from where I lived), and an average of

associated with the zip code 79907, where Ysleta del Sur Pueblo is located, is mostly populated by Hispanics, with some American Indians. In 2010, 95.8% (*n*=55,803) of the population self-identified as Hispanic or Latino (U.S. Census Bureau, 2010b) and 89.6% (*n*=49,389) indicated that they were of Mexican descent. Nearly 88.8% (*n*=44,688) of the residents indicated that Spanish was the primary language spoken at home. Only 1.4% (*n*=796) of the population self-identified as "American Indian," but as explained by the director of tribal records, it is likely that this demographic information is inaccurate because tribal members listed their identity in U.S. Census reports in a variety of "other" ways, including Tigua, Ysletan, and Ysleta.

The residents of 79907 indicated low completion rates for high school, college, and graduate degrees, possibly related to the high number of first-generation immigrants. Only 30.2% (*n*=9,770) indicated that they had graduated high school, and only 5.8% (*n*=1,877) had earned a Bachelor's degree. This is likely a contributing factor to the poverty of this region: an estimated 32.5% (actual number unknown) of all families in the area live below the poverty level as of 2010. With such low educational rates and high poverty rates, diabetes prevention is extremely challenging for all residents since individuals are likely to have few financial and social opportunities to eat healthier foods,[22] to exercise, or to have the time to attend educational classes.

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29 trains pass through every 24 hours, according to the Federal Railroad Administration. In this area trains are allowed to travel as fast as 79 mph, and their whistles can be heard for at least one-minute per train.

[22] I use the term "healthier" to refer to the USDA dietary guidelines and recommended daily allowance (RDA) (http://fnic.nal.usda.gov/dietary-guidance/dietary-guidelines, accessed 2010)

Because of the poverty and low educational attainment, residents of other parts of town perceive this area as a less desirable place to live. Indeed, while I was living there, my SUV was broken into at least once, there may have been an attempted robbery on my rental house when a suspicious individual was spotted in the yard after I had gone to sleep, and a drunk driver crashed into and demolished my front yard wall at 3:32 a.m.[23] Local residents, however, have a very different view of their neighborhood. Diego Flores, a Community Health Representative, regularly joked with me that I would grow to like the neighborhood and "get used to the trains after, oh, 20 years or so." While I never grew accustomed to the trains, I learned to appreciate the Lower Valley, especially the rural agricultural pockets that crosscut the region, including the canal system and the occasional pomegranate or mulberry fruit tree, the horses which sometimes escaped from corrals and wandered down my street, or the lingering music in the evenings from the mariachi bands that played at backyard parties. For all of the health issues in the neighborhood, I have yet to live in an area with so many social connections and lively activities.

Since my time in the field, the city of El Paso has begun to develop the area and enhance some of the basic infrastructure. When I left in 2010, the city was adding new sewer lines along Zaragoza Road, and new lights and sidewalks in Pueblo Viejo, a local

[23] Consequently, my health was negatively impacted during my two years in the field. I was diagnosed with sleep deprivation; I gained a pound of weight every month for 12 months (though perhaps this was also due to my attending events where high-calorie and fatty food was served); and I lost hearing in one ear for approximately one month from an ear infection caused by polluted irrigation water that was used in a tribal garden. Also, on at least two occasions fires broke out across the border in industrial zones, releasing mysteriously thick smoke into the neighborhood and causing great concern among residents.

park. In addition, a newly appointed city commission was looking into enhancing the area's commercial, residential, and social opportunities by developing local activity centers, adding sidewalks with "curb cuts" to make walking with strollers and wheelchairs possible, and by painting bike lanes. Quiet zones for trains,[24] which I believe are severely needed, have yet to become part of the neighborhood.

In an attempt to develop a tourism-based economy in the Lower Valley, the El Paso Planning Department also rebranded the area as "Mission Valley," in recognition of the three missions that are located there (Planning Division, City of El Paso, 2008). But as a community health worker pointed out while showing me around the community, "[the City of El Paso] made a mistake when they set it up since there are only two missions, Ysleta (1682) and Socorro (1759). San Elizario was a presidio (a garrison built in 1789) where they kept troops . . ., so they *kinda* got it right." Local planners must be careful to ensure that local history, particularly the history that concerns the Pueblo, is appropriately presented to the general public. Likewise, the Pueblo can actively work to enhance the sense of place.

Ysleta del Sur Pueblo

The U.S. Department of the Interior holds a total of 3,269.4 acres of Pueblo land, in and around El Paso, in trust for Ysleta del Sur Pueblo (Figure 5). In many ways, Ysleta del Sur Pueblo resembles an urban subdivision rather than the rural reservations typical of the Pueblos of New Mexico, and it challenges the popular image of how and where

[24] Quiet zones, where trains do not use their whistles, require crossing zones and specialized track guards, warning lights, and medians to warn drivers of oncoming trains and, when activated, to keep cars from crossing onto the train tracks.

native peoples live. Community members reside and work in neatly aligned houses, paved roads, sidewalks, and street signs covered with occasional graffiti proclaiming Tiguas as the local residents.

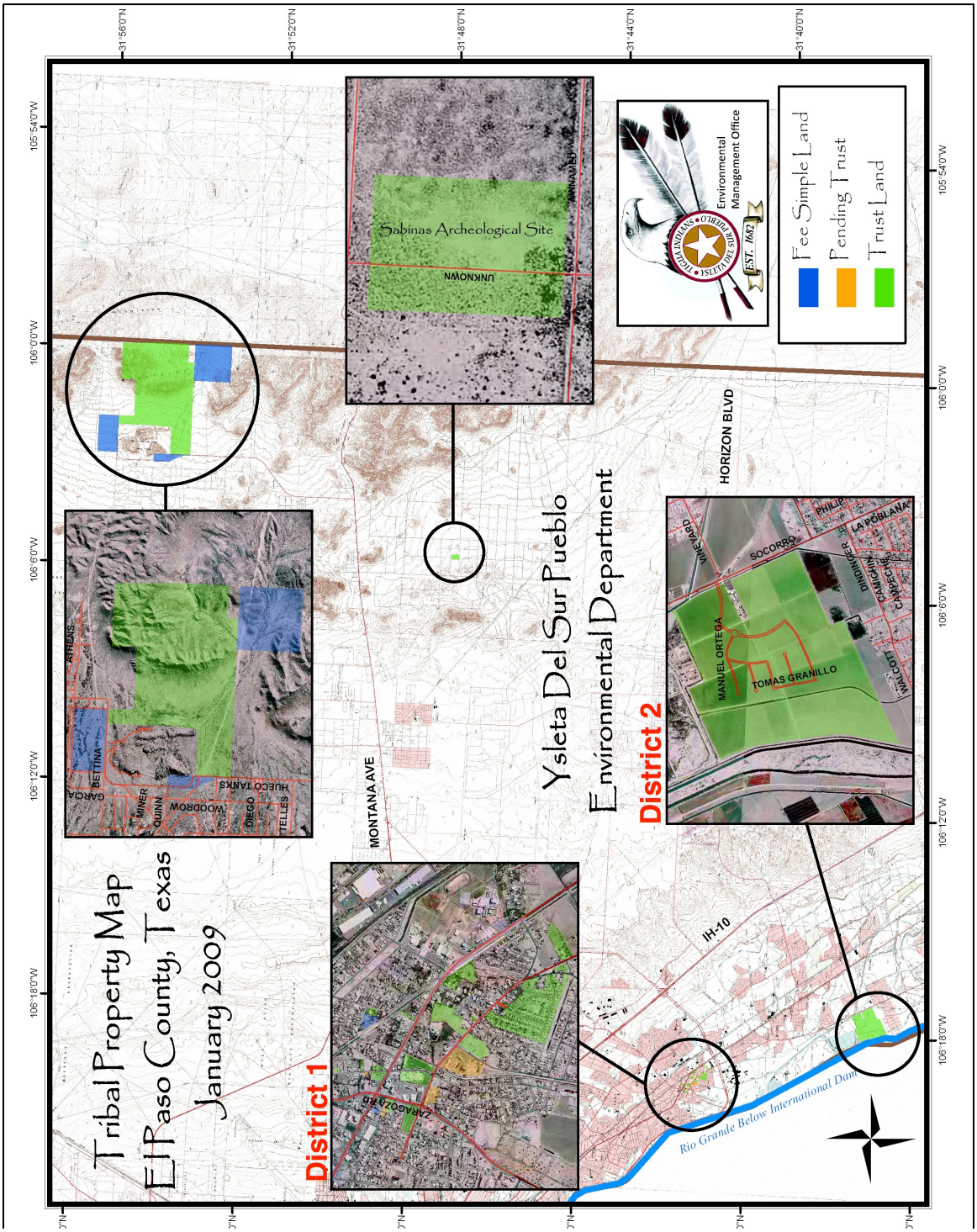

Figure 5: Ysleta Pueblo Tribal Trust Land

The range of tribally sponsored services available in the surrounding neighborhoods includes workout facilities, a Community Health Center, and religious grounds. The two reservation "districts" serve a distinct purpose. District 1, located in El

Paso, was built in the early 1970s with U.S. Housing and Human Development funding and comprises the administration offices and casino, the Barrio de los Tiguas, and an assortment of health and social services, including the Community Health Center, shown above.

Figure 6: Home of tribal elder Eduardo Ramos in District 1. Photo by Maria Perez**.**

The residents of District 1 tend to be older, single-family residents, in part because the houses are single-family and because this was the first housing development. In some instances, individuals in their twenties and thirties rent houses from older, more established residents who have second properties.

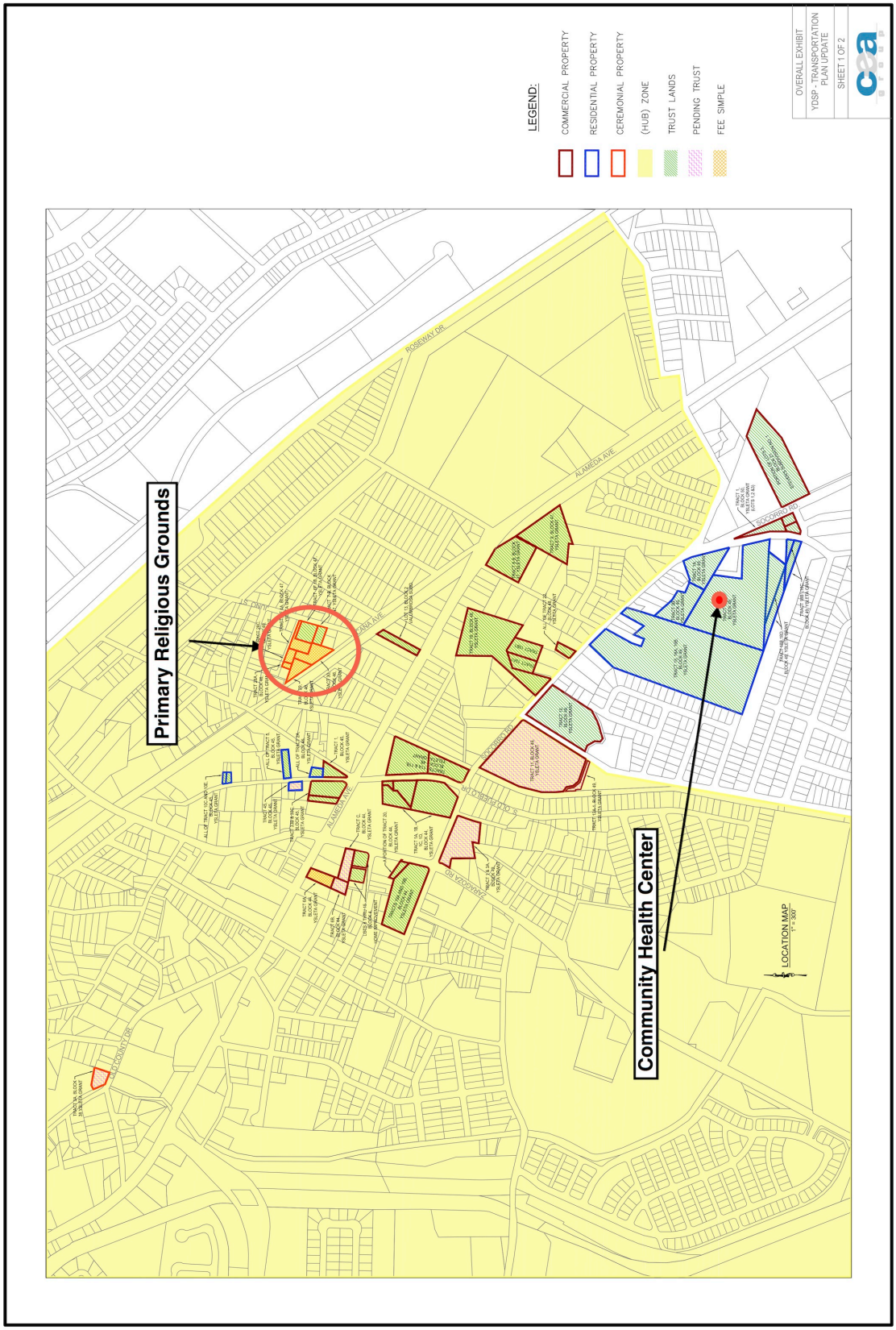

Figure 7: Ysleta del Sur Pueblo District 1

District 2, located six miles east in Socorro, Texas (Figure 9), was acquired during the casino era in the 1990s (see Chapter 3) and includes a large residential district and several smaller commercial districts. In the residential area are multigenerational homes, the wellness facility and pool (now the Tigua Entertainment Center, where large rock concerts are held), and preschool and education programs. Three types of housing are currently available for tribal members: single-family duplexes (shown at right), single-family apartments, and large, multigenerational homes. Under a new agreement with the Pueblo, individuals may also elect to rent trust land from the Pueblo and build a privately owned home.

Figure 8: Pueblo Housing in District 2. Photo by author.

Many tribal members also live in the surrounding neighborhoods, largely because of a severe housing shortage on the reservation. Other members also live throughout the United States or internationally if they are serving in the military.

Figure 9: Ysleta del Sur Pueblo District 2

Both districts have undergone many changes over the years, some of which make diabetes prevention particularly challenging. Of particular importance is the lack of opportunities for safe exercise, such as walking or bike riding. The Pueblo's Wellness Facility, complete with an Olympic-sized pool and weight room, both located in District 2, were rarely used during my stay at the Pueblo except to host the occasional Zumba

exercise class .[25] Since my time in the field, the pool has been remodeled into a large concert venue, restaurant, and casino. Although an individual can run or bike along the streets in the small housing area of District 1, they are likely to get bored by simply running in circles, as I witnessed on several occasions. One small park is available in the center of the reservation, though children quickly get bored playing on it day after day and resort to less desirable activity such as drawing graffiti or, in the case of older teens, drug use. A second park is accessible half a mile from the reservation, but tribal community members rarely visit it because it requires crossing two major thoroughfares, neither with crosswalks. Leaving the reservation boundary for other types of exercise, though desirable, is dangerous. There are no bike lanes in the area, and sidewalks are either missing or so uneven it is difficult to walk, run, or push a stroller on them.

Not only are the opportunities for exercise limited, opportunities for eating healthy foods are also challenging. I conducted a scan of supermarkets and food services, some of which are discussed in Chapter 6, after moving to the field site. None of the restaurants I visited from 2009 to 2010 in a 2-mile radius offered salads on the menus. The Tribal Casino did not initially have salad options but did begin offering five "healthy salads" at the snack shop in 2010.[26] Supermarket quality was also a concern. The two supermarkets within one mile of the District 1 housing reservation, a Super-

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[25] Zumba is a Colombian dance fitness program created by dancer and choreographer Alberto "Beto" Perez during the 1990s that incorporates Latin dance movement and aerobic exercise.

[26] I was never able to learn what prompted the casino to begin offering salad. I did mention this concern to a member of the Tribal Council, and frequently asked the staff to offer a salad, but I was never able to learn why the change was made.

Wal-Mart and a Lowe's Big 8, would often run out of produce, or the quality was so poor it would spoil in the store. As a result, I shopped at a "Neighborhood Wal-Mart" that was farther away, or when visiting my grandmother on the West Side I would stop at the Sun Harvest organic supermarket. These alternatives proved to be extremely expensive options, both for others and for myself, because unleaded gas in 2009 cost more than $4 a gallon.

The Built Environment

Changes in physical activity and diet are impacting opportunities for health and wellness practices at the Pueblo. In the past 50 years in particular, individuals have begun to spend more time in sedentary practices as they drive to work rather than walk or commute via public transportation, and they sit for longer periods of time at work (Brownson, Boehmer, & Luke, 2005). Individuals across the United States are also consuming more high-caloric foods outside of the home for a variety of reasons.

The factors that are impacting food and nutrition are mediated through the shared built environment. *Built environment* is a concept in public health that refers to the physical world in which individuals live. Particular attention is paid to urban workplace and residential design, including arrangement and physical elements of public spaces, land use, the location and density of housing, the availability of recreational facilities and activities, and location and availability of supermarkets. In addition, built environment considers access to transportation systems, such as public transportation, bike lanes, walking paths and trails (Handy, Boarnet, Ewing, & Killingsworth, 2002).

Individuals are less likely to have a healthy diet if they do not have a supermarket within one mile, if the quality of the market is poor, or if the individuals have easy access to fast-food establishments (Beaulac, Kristjansson, & Cummins, 2009; Cohen, Sturm, Scott, Farley, & Bluthenthal, 2010; Powell, Slater, Mirtcheva, Bao, & Chaloupka, 2007; Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008). Called "food deserts," these areas do not offer local residents high-quality, full-service supermarkets and grocery stores. Individuals are also more likely to consume extra calories if they purchase prepackaged foods that are easy to prepare yet are often high in calories (Martinez, 2007). According to the guidelines from the USDA, calories from candies, sodas, and other "discretionary" foods should only be eaten after all essential nutrients are consumed from "primary foods," or grains, dairy, fruits, vegetables, and meats or legumes (U.S. Department of Agriculture, 2005). In a 2,000-calorie diet, for example, the USDA recommends individuals eat no more than 267 calories (about 13%) from discretionary foods, roughly the equivalent of a fast 60-minute walk. Achieving this requires an environment in which primary food is accessible, discretionary food is not accessible, and the environment provides opportunities for exercise.

At Ysleta del Sur Pueblo, the built environment is particularly challenging for opportunities for physical activity and nutritional food options. Each of the reservation districts has its own challenges and opportunities for physical activity. Key factors in the built environment of each community are discussed below.

The Community Health Center and adjoining park are the dominant buildings in District 1. This complex provides a place for children to play and adults and elders to

walk in the mornings and evenings in good weather. Since this area is separated from nearby traffic, some individuals use it as an impromptu track and run or walk around the ½-mile loop. Visiting the nearby Pueblo Viejo Park, the local bus station, or the religious grounds requires individuals to cross the very busy Socorro Road, which is rarely done on foot or bicycle. Alternatively, individuals can access the Franklyn Drain, an open storm drain located immediately behind the Pueblo complex, via a small alleyway on the southwest corner of Nakitu Drive. From here, individuals can access paths along the various canals where they can walk without concerns regarding traffic.

Figure 10: Empty produce shelves at local Wal-Mart. Photo by author.

The three grocery stores within one mile of the reservation each have different foods and different quality: Lowe's Big 8, Wal-Mart-Superstore, and Zeke's Pueblo Mexicano Supermarket. Lowe's Big 8 is 0.9 miles from the center of District 1 and is regularly used by tribal members, particularly elders. The oldest of the supermarkets in the area, Big-8 was originally a Piggy-Wiggly store. The market carried a variety of basic Mexican staples such as pinto beans and white rice. The produce section regularly had food that was wilting and buzzed by flies. Upon entry to the market the shopper is greeted with shelves full of cheap one-gallon jugs of generic Kool-Aid. A Wal-Mart-Superstore, believed to be one of the busiest Wal-Marts in the world because of its border location, is located one mile

southeast of the Pueblo. As at all Wal-Marts, this store had a large variety of dried, processed, and fresh produce. Owing to the large volume of sales, however, it was not uncommon for the produce section to run out of stock. Finally, many community members shopped regularly at Zeke's Pueblo Mexicano Supermarket (1 mile northwest), primarily for the inexpensive meats sold in the butcher's department. Other supermarkets mentioned by tribal members include Pro's Ranch Market (2 miles); Wal-Mart Neighborhood Market, North Loop Drive (4 miles); and Albertsons on Yarborough (8 miles).

Many sit-down and fast-food restaurants are located near the Pueblo, and many community members indicated that they eat out a minimum of three times per week. Many of the local restaurants pride themselves in the large portions, offering super-sized sodas, triple-sized "super" burritos, or all-you-can-eat options. None of the restaurants within one mile of the Pueblo offered any salad, vegetable, or fruit item until the snack shop in the tribal casino began offering a special menu with five "healthy salads" and large cups of mixed fruit.

District 2 is located five miles south of District 1. The area does not have sidewalks, though the relatively quiet reservation traffic does not keep individuals from walking or pushing strollers on the edges of streets. Once home to the natatorium and gymnasium, the reservation now only has a gymnasium. The area lacks any public transportation. At one time the Pueblo had a shuttle connecting both reservations, but it was cut at the end of the Boom-and-Bust era due to lack of funding, forcing individuals to drive.

After a nearby produce market closed, the San Eli Market, located two miles east of District 2, is the only supermarket in the area. The quality of the food is good, though like other markets in the area, nearly 1/5 of the store is dedicated to beer and alcohol.

Although the same factors impact all tribal residents, the way they are experienced at the individual level is unique (see Chapter 6). By understanding the factors that are unique to various populations, we are better prepared to address them with changes in practice and policy.

Research Approach

This research utilizes community-based participatory research (CBPR), an emerging model for health science research. It was selected here because it provides an avenue to access and understand the emerging model of diabetes prevention. CBPR encourages dialogue, partnership, and engagement between the researcher and the tribal community. Not just a method, CBPR is a research philosophy that developed in health science research and has expanded to other disciplines. Inspired by the theories presented by Freire (2000), CBPR is an applied collaborative approach to research in which community partners participate in the full spectrum of research (conception, research design, conduct and methods, analysis, interpretation, conclusions, discrimination and communication of results) with a goal of influencing change in community health, health systems, and health promotion programs or policies. The Kellogg Foundation's Community Health Scholar program defines CBPR as research that

> Equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social

> change to improve community health and eliminate health disparities (Minkler & Wallerstein, 2003, p. 4).

In many ways, the goal is collaborative decision-making by community and academic partners (Minkler & Wallerstein, 2003).

Diabetes projects that employ this perspective are increasingly welcomed in native communities because this approach helps build rapport, relationships, and collaboration. Though the long-term benefits of CBPR are still being debated, there is a sense that community-based approaches enhance research because community members participate in the development of culturally specific methodologies (Barton, 2004), which eases the recruitment of participants and data collection. Furthermore, community members may critique findings using local knowledge that is not accessible to the researcher, resulting in new and innovative interpretations (Leung, Yen, & Minkler, 2004, p. 503; Smylie et al., 2003). Of particular interest are studies that explore how Western knowledge concerning health and healing translates to indigenous knowledge, and vice versa (Smylie et al., 2003). These studies, more than any other, suggest that in order for scientifically tested interventions to work, they must be developed, understood, and modified by community members starting from the initial stages of research and development.

Community-based participatory research is relevant to many varieties of anthropology, including applied and activist anthropology (Lamphere, 2004), where research serves to change a practice; collaborative ethnography (Lassiter, 2005), where researcher and research group form strong collaborative partnerships; or ethnography, where the anthropologist is literally or figuratively put to work (Field & Fox, 2007), and

emphasis is placed on reciprocity of expertise between community and academic partners. This reciprocity ensures respect for community knowledge and community-supported practices, as well as for science and empirically supported interventions.

Research Methods

Preliminary research began in 2002 when I completed my master's thesis at the University of Chicago, which examined the legal and cultural arguments surrounding the forced closure of Ysleta del Sur Pueblo's Speaking Rock Casino (Bruna, 2003). This research shed light on the complex relationship between federal Indian recognition and local cultural practices. In 2005, I conducted archival research on the history of El Paso and Ysleta del Sur Pueblo as a fellow at the Smithsonian Institution in Washington, D.C., where I used material from the Anthropological Archives, National Museum of the American Indian, and National Museum of American History. The historical research improved my understanding of the agricultural traditions and economic history of Ysleta del Sur Pueblo and provided a foundation for the next chapter (Chapter 3).

In addition to the archival material collected between 2008 and 2010, I collected the available health policy material at the Pueblo regarding diabetes prevention and management. These documents included a collection of paper forms used to track diabetic patients, a comprehensive Diabetes Program Policy document, a list of prevention activities, and an assortment of health brochures and promotional media.

The methods and goals of this research were developed with assistance from the staff of the Ysleta del Sur Pueblo Diabetes Prevention Program. Five methods in a mixed method design (Tashakkori & Teddlie, 1998) formed part of this research: (1) collection

of archival and policy documents, (2) intensive participant-observation as a volunteer in the tribe, (3) forty-one semi-structured and structured interviews, (4) nineteen 24-hour dietary food recalls, and (5) thirty-four surveys related to participant knowledge, attitudes, and behavior (KAB) regarding diabetes practices.

The main source of data for this study came from ethnographic participant-observation from August 2008 to July 2010, which yielded rich information including narratives about the etiology of disease and diabetes, day-to-day activities, local policies and histories, and practices surrounding diabetes prevention. Observations were often taken as "jottings" (Schensul, Schensul, & LeCompte, 1999) either in a field notebook or later in the research as notes or text messages I sent to my email from my iPhone. Taking notes with my phone instead of my field journal became my preferred method because using a phone was less obtrusive than writing. After returning to my home from the field I would read the text messages and type detailed field notes the same evening or the following morning. Participant observation, more than any other method, proved to be welcomed in the community because it was unobtrusive and in some cases provided a service to the community. Furthermore, as I learned while being introduced by community members, "field*work*" was a recognized term, though not in the anthropological or ethnographic sense. Diego, a community health representative, explained while introducing me to other community health representatives in September 2008, "Sean is here from Albuquerque to do fieldwork on diabetes. He had his classroom work at UNM and now he is here to have real experience in the field." It is not uncommon to differentiate academic "book" knowledge and community "field"

knowledge, particularly in health research that utilizes community-based participatory research. By framing why I moved to El Paso to conduct this research as "field research," Diego was explaining anthropological research in a positive light and showing others that I was not the "typical researcher" who would visit the tribe for short periods of time and then leave. It also helped that I would later literally work "in a field" because laboring in a community garden was seen as a positive attribute.

With my fieldwork presence accepted, by November 2008 I was increasingly invited to observe and participate in activities throughout the Pueblo, eventually preparing food for religious dances, observing dances, attending community block parties, and, when appropriate, attending tribal council meetings or Pueblo business meetings. In addition, I was regularly invited into homes to interview participants and discuss topics that required more privacy, including personal perspectives on diabetes management or the impact of tribal policies on health care. I was also welcomed to share meals and celebrate holidays such as Christmas and the New Year, which I was glad to attend.

When people learned that I enjoy photography I was often invited to take photos of community events or, in several cases, family photos.[27] Taking photos of events such as the Community Health Center's Annual Red Ribbon Health Fair in October of 2008 & 2009 gave me a reason to attend the events and allowed me to provide a service to the health center. For example, in several instance the photos I took were used in brochures, program slideshows, or at events honoring deceased members or staff.

[27] Often outside the scope of the IRB, these photos of parents and children were given to the parents on CDs as gifts and not used for research.

In addition to participant observation, interviews with participants within each group elicited detailed narratives. One-on-one interviews from September 2009 through July 2010 were conducted in the community health center, usually in the conference room, or in the privacy of an individual's living room or dining room, often over a snack or meal. On several occasions I conducted informal in-situ interviews with individuals while we were working, tilling a garden, or at a non-religious tribal event. For formal, sit-down recorded interviews, I loosely followed an interview guide, allowing the individual to speak at their own pace, to add questions, and enabling follow-up with specific questions at a second or third interview. On the few occasions when I conducted formal, structured interviews, usually as a follow-up, participants would often tell me later that the interview was "strange," "weird," or "too serious," and that they preferred the loosely structured interviews.

As part of the interviews I also asked participants to list the food they had consumed in the preceding 24 hours. These food recalls used a guide developed by the Northwest Portland Area Indian Health Board (NPAIHB) and endorsed by the Albuquerque Southwest Tribal Epidemiology Center to help individuals remember all of the food they had eaten, including side dishes, condiments, and drinks.[28] The 19 food recalls I collected provided a glimpse into the relationship between food and economic status. Regrettably, many individuals disliked the recalls and opted out after one or two instances. Interestingly, when older adults or elders heard me mention "food recall," they would often discuss food they remembered eating while growing up.

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[28] The survey tool, originally administered in person and on paper, is now available online at http://riskfactor.cancer.gov/tools/instruments/asa24/background/

To supplement the heavily qualitative data, I also surveyed the participants and collected institutional data from the diabetes program. The knowledge, attitude, and behavior (KAB) survey, frequently used in health research, was modified for Ysleta to include locally specific terms and places. The survey was designed with assistance of the Research Advisory Committee, discussed later, and was based on other KAB surveys (Fitzgerald et al., 1998; Taylor, Keim, Fuqua, & Johnson, 2005). The survey was self-administered on the web using Opinio software or on paper if individuals requested a copy.[29] The survey findings are discussed in Chapter 6.

To make the online survey more appealing, I included three 30-second Public Service Announcements (PSAs) that I filmed with the assistance of several community members and tribal staff.[30] The PSAs encouraged community members to visit the Community Health Center, to call the Police Department if they had any safety concerns, and informed the community of the services offered by the Tribal Records Department.

With the research methods selected and in place, I worked closely with the supervisor of the Diabetes Program to conduct the research ethically and unobtrusively in two overlapping stages. In the first stage, roughly year 1, I adjusted to community life,

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[29] Only two individuals requested paper surveys. Forty-four individuals began the survey. Ten surveys were removed from the analysis because less than 50% of the survey was completed, resulting in thirty-four completed surveys.

[30] I contacted each Tribal Department and asked if they would be interested in including a PSA. The Community Health Department immediately accepted the invitation; the Tribal Police Department requested a PSA as part of their community policing initiative to give the department a more positive perception in the community; and the Tribal Records Department requested a PSA to inform tribal staff of their services. The PSAs were recorded with the assistance of the Computer and Technology Staff at the Pueblo.

learned about community practices, and selected participants (Briggs, 1986) and in the second stage, roughly year 2, I focused on surveying and interviewing participants. Observations and gardening activities took place during both stages.

Data Analysis, Community Reporting, and Data Sovereignty

All ethnographic interviews were transcribed and analyzed by hand. Grounded theory was best suited for this analysis for two reasons. First, it allowed me to identify categories, concepts, and themes that emerged from the various texts, and second, it allowed me to link concepts to formal theories (Bernard, 2011, p. 462; Corbin & Strauss, 1990).

In addition to analysis, six "research update" reports regarding research progress were distributed to the Research Advisory Committee and published for the Pueblo to read and review (see Appendix A). Findings of the dissertation research were reviewed by the Local Research Team and disseminated to the Tribal Council, Health Clinic staff, and community in a variety of formal and informal settings to solicit feedback prior to publication. In recognition of the tribe's right to manage research regarding the community, the tribe holds sovereignty over the data and may redact information prior to publication or forbid publication of findings.

Building Rapport and Collaboration

I was first introduced to the broader tribal community in October 2008 at a Red Ribbon drug prevention community event held in the Health Center's auditorium,[31] and I later regularly sat with elders in the nearby Juanchido Elders' Center. It was at these two locations in District 1 that I first began participating at the Pueblo as a volunteer with the Diabetes Program. As a volunteer I was able to meet staff at the Health Center, including Maria Perez, the supervisor of the Diabetes Program, and begin working with them on a variety of small, though public, projects, including weekly diabetes education classes and larger special events hosted by the Community Health Center. Though I was a volunteer, I helped shape the program's activities, and many tribal members thought I was newly hired at the health center.

In addition to working with the Diabetes Program, I was also placed with the tribal afterschool program at the Community Health Center in January 2009. Staff anticipated that I would be able to provide a service to the community while also inviting students to participate in the study. Following a background check, a requirement in the state of Texas for working with youth, and after informal acceptance by the tribal youth in the program, I was placed with the Youth Intervention and Prevention Program as a volunteer. Being placed with the afterschool programs was not accidental. Because much of the focus of the study was diabetes prevention, I was placed with the afterschool program to get to know the youth so I could eventually interview them. The impact of this process is discussed in Chapter 4.

[31] Red Ribbon is one of the longest-running federally funded campaigns to prevent drug use among minors.

I also volunteered occasionally with the Elders' Program, conveniently located in the building adjacent to the Community Health Center. Volunteering at the Elders' Center generally meant sitting and talking with elders or accompanying them on field trips to local health fairs. Over many air-conditioned conversations, a welcome activity in frequent 102°F summer heat, I came to learn about the history of the Pueblo, discussed in Chapter 3, and of the challenges to exercise and nutrition in the Lower Valley, discussed in Chapter 6. Two male elders, Eduardo and Marco,[32] took particular interest in my research and became close mentors. I would sit with Eduardo and talk about how life at the Pueblo had changed over the years, and Marco would joke about my ideas, telling the other elders, "This guy is smart . . . we should call him Weasel because he sees everything!" Through humorous moments such as these I was recognized not only as a researcher, but also as a friend. Women, particularly several individuals who worked in the health center, were more cautious in getting to know me and seemed to open up only once they met my girlfriend (now wife). Women actively and openly told me their critiques of tribal practices and leadership, including their concerns about the food offered at community events or decisions made by the tribal council regarding the tribal casino.

Individuals on the nine-member Tribal Council were extremely busy and had little time to participate in lengthy interviews. I interviewed or regularly discussed economic, health, and policy topics with three members of the council and informally discussed diabetes concerns with the other six members at various events. As I came to

[32] Marco is a pseudonym. Sadly, Marco passed away one year after I left the field.

understand over the course of two years, council members balance immediate and local needs with long-term possibilities, taking care to consider and navigate both cultural and economic implications of their actions. I learned that members of the Tribal Council have dual roles at the Pueblo, serving as council members and in another capacity in which they have expertise, such as grounds maintenance, ranching, or religious activities. This proved beneficial throughout the research process because it opened avenues for engagement throughout the reservation.

Through the act of volunteering and participating with various groups at the Pueblo, my position began to shift from an outsider to an insider activist. Activist anthropology is in part "a basic decision to align oneself with an organized group in a struggle for rights, redress, and empowerment and a commitment to produce knowledge in collaboration and dialogue with the members of that group" (Hale, 2007). As I began to form friendships throughout the community I was increasingly asked to participate in or develop health and wellness activities for the Pueblo community. The shift from outsider to insider activist came out in both small and major ways. Consider, for example, the following three examples. In one interview, I noticed clothing hanging on an individual's treadmill, and I joked that it is hard to exercise daily if the treadmill is not accessible. In another instance, an individual asked me if it was "healthy" to drink a liter of soda at lunch, to which I replied, "in my opinion, no," and then handed over a flyer encouraging a visit to the Community Health Center. In a third instance, and after

many months at the Pueblo, I began to notice many BMX bikes[33] with flat tires sitting in yards. With the approval of the Community Health Center I contacted a local bike shop and arranged for them to provide a free bicycle maintenance workshop on a Saturday morning.

The first instance is a subtle form of insider activism; by joking with the individual, I was using an accepted form of social support to promote a goal of the diabetes prevention program – encouraging individuals to exercise. In the second example, I handed the individual a flyer and suggested that questions could be answered by the health center staff, a required action under Institutional Review Board guidelines for health research. In the third instance I moved beyond the role of a researcher and directly produced a new activity in the Pueblo that probably would not have taken place otherwise. This shift in position was difficult for me to consider early in the field research process, but when I recognized that I had useful skills that extended well beyond classical research canon of cultural anthropology, and that the Pueblo was approving my actions, I felt more at ease advancing tribally approved projects in an insider activist position.[34]

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[33] A BMX bike is used for off-road racing or trick riding and is a favorite bicycle among youth.

[34] Although I felt more at ease, I cannot overemphasize how physically tiring it can be to balance research, community engagement, and part-time employment. Each was in my view important (or, in the case of employment, necessary), and at times it was difficult to manage the physical demands.

Formation of the Research Advisory Committee

Volunteering was a key way to engage in participatory research and made it possible to form a Research Advisory Committee (RAC), a component of the research design that was instrumental for research approvals. The original research team was composed of Edward Thomas, director of the Health Center, Maria Perez, the supervisor of the Diabetes Program, and Diego Flores, a community health representative. I met with these three individuals to develop appropriate research methods. For example, requesting signed documents is culturally inappropriate in some communities, and since I was unfamiliar with the research practices in this community I asked the RAC if a waiver of documentation of consent forms should be considered. They agreed that we should use consent forms because the health center has used them in the past and because having a form would add legitimacy to this study. Although I was initially not convinced this was the best choice because it would require using and tracking consent forms, I agreed, recognizing that the tribal community can best decide the potential for adverse consequences given a specific research design (Harding et al., 2012).

I wrote a two-page preliminary proposal and Dr. Thomas presented it to the Tribal Council. The preliminary proposal, approved on February 6, 2007, gave me permission to proceed with development of the final proposal as long as the research was "of benefit to the tribal community."

With the initial proposal approved, I hoped that the RAC would expand to include other IRB-approved individuals, but the other individuals who were interested were unable to complete their IRB training owing to time constraints or lack of desire to

do so. To accommodate these individuals, I asked them to participate in non-data-collection activities. These individuals become volunteers in what might be called a "flexible team" because they participated in specific activities, causing the "team" to expand and retract depending on the activity (see Appendix C). Flexible work teams, I learned, are regularly used at Ysleta del Sur to pool labor and resources in order to complete tasks, as is the case with other agricultural communities (Rodríguez, 2006). Although flexible teams are cultural norms in many communities, they are unusual in health research, largely because of the structural limitations placed by large funding agencies regarding who can and cannot participate in health research. And although some research in Indigenous communities has been able to overcome these challenges (Castleden, Morgan, & Lamb, 2012), much work is still required to make flexible teams possible in health research settings where they are culturally congruent with local practices.

Although the members of the flex team had had little or no experience participating in research, they were well aware of *prior* research that had impacted their community – positively or negatively. These individuals tested my research ethics on multiple occasions. When I first began volunteering at the Pueblo, for example, Emilio took me to visit the Pueblo's kiva while it was still under construction. While sitting inside meter-high walls, he gave me a homework assignment of writing a one-page paper regarding my thoughts on the experience of sitting in a kiva, albeit one that was not yet complete. Part of my response, "I am a visitor to this community—an outsider—and with patience and respect I will continue to learn about local cultural practices and

the ways they can help prevent diabetes," was apparently accepted as I was welcomed to work freely in the area near the kiva (a topic I addressed in Chapter 5).

Ultimately, the research team had a positive experience. Diego, on a visit to co-present a talk at UNM's Medical Sciences campus, explained to the audience that researchers often come to communities to do their own research and then leave abruptly. This behavior reminded him of "a deer trampling around in a garden before being scared away." My dissertation research, he explained, was different because I worked to include others and "spent more time listening than speaking."

Pueblo-Wide Engagement at Religious Dances and through Gardening

In addition to participating with subsections of the Pueblo community, I also met members of the tribal community at various *fiestas* (religious dances). As discussed in Chapter 5, Ysleta del Sur Pueblo follows a Puebloan religious cycle of ten religious dances that connect the Pueblo with specific Catholic saints and place-based spiritual practices. [35] Only three months after I moved to El Paso, Emilio, a respected community member, was me, along with my girlfriend, to observe the dance for Dia de San Andres (St. Andrew) on November 30, 2008, an activity that is usually closed to individuals who are not from the Pueblo. I was excited about attending my first invited event but did not realize how awkward our attendance would be since my girlfriend and I had only

[35] The dances are New Year's Day on January 1, Dia de los Santos Reyes (Three Kings of Epiphany) on January 6, Dia de San Antonio (St. Anthony of Padua) on June 13, Dia de San Juan (St. John the Baptist) on June 24, Dia de San Pedro y San Pablo (St. Peter and St. Paul) on June 29, Dia de San Santiago (St. James) on July 25, Dia de Santa Maria (St. Ann) on July 26, Dia de San Andres (St. Andrew) on November 30, Christmas on December 25, and Dia de los Santos Inocentes (Holy Innocents) on December 28.

recently been introduced to the community and were not known by most of the community, including many of the participants at religious dances. My girlfriend and I drove to the dance early on the cold November day and were the recipients of many stares. I scanned for Emilio, the individual who had invited me, and at the first break in the dancing we walked over to say hello. Emilio, speaking somewhat louder than usual so others could hear him, immediately welcomed me with a gregarious handshake, saying "Hey Mr. Sean! I'm glad you could make it! This must be Kim!" Emilio explained to the others around him that I was working at the CHC. As I looked around I noticed many individuals taking quick glances at Kim and myself or, in a few cases, staring outright. In time I would learn that the stares were because we were new, because I was overdressed, and because my girlfriend and I were fair skinned. Although my girlfriend was dressed in an appropriately long skirt, I was dressed too formally and stood out. My new jeans and button up shirt were acceptable, but the black shoes I wore were more appropriate for office wear and stood out among the tennis shoes and Red Wing-style work boots that many of the community members wore while watching the dancing.

In years that followed I was invited to attend the various dances by many different individuals, and I was fortunate to be asked to assist with two weeks of preparations for the Dia de San Antonio (Day of St. Anthony of Padua) feasts on June 13, 2009 and 2010, an event that among other things recognizes neighbors and welcomes outsiders to share a meal with the tribal community. Through participation at each of these events I came to appreciate the connection between identity, food, exercise, and wellness. Although overt religious practices such as these events were not the focus of

my study, they served as bridges between agricultural practices and nutrition, and eventually became a topic of interest in my research.

In addition to observing religious dances or assisting with preparations, from 2008 through 2010 I helped develop three experimental gardens, one large and two smaller gardens, as a way to meet community members and to spur discussion about health and wellness. These gardens were designed and managed with the guidance and assistance of various community members and are discussed in detail in Chapter 5.

Conclusion

This ethnographic research utilized mixed methods research to examine diabetes care and prevention practices at Ysleta del Sur Pueblo. Conducted over two years, the research is intended to resonate with anthropological and public health studies on the impacts of cultural practices on type 2 diabetes prevention. It may also prove beneficial for Ysleta del Sur Pueblo so they can enhance their own diabetes care and prevention programs.

Chapter 3: The Political Economic History of Ysleta del Sur Pueblo and the Impacts on Diabetes Prevention and Management

Piarote Granillo, an Ysletan Potter, stands next to an *horno* (oven) in the Old Ysleta Pueblo, c. 1876. Ysleta del Sur Pueblo (2012)

In this chapter I present a history of Ysleta del Sur Pueblo,[36] focusing my attention on key historical epochs, each marked by a distinct political economic structure which I argue changed economic opportunities, resulting in changes in food practices, exercise, and other environmental factors that impact diabetes prevention or management.

In the first epoch I discuss, dislocation and resettlement, I use the historical and archival record to address the dislocation of a small number of Ysletans to their present location as a result of the Pueblo Revolt of 1680. Removal from their ancestral land is arguably the greatest factor impacting the native peoples of Ysleta because it forever

[36] I use "Ysleta del Sur Pueblo" or "Ysletan" in reference to the Pueblo's federally recognized name. Tigua, a name often used by tribal members and in pre-recognition documents and Congressional bills, is a Spanish variant of Tiwa. Other Spanish variants frequently found in archival documents include Cheguas, Chiguas, Téoas, Tiguas, Tigües, Tiguesh, Tigüex, Tiguex, Tigüez, Tihuex, Tioas, and a Nahuatl-influenced variation, Tziquis.

shifted tribal relations, knowledge surrounding food and agricultural practices, and sovereign identity. In many ways, the relocated individuals adjusted well to their new location, transforming the landscape with *acequias* (irrigation canals) and eventually receiving a land grant from the king of Spain in recognition of their efforts. The shift to a new location should not be taken lightly, nor simply as an event that took place in the distant past and thus has little impact today. Claims to American Indian identity are often linked to one specific territory, and the dislocation characterizing Ysleta del Sur challenges this common notion. As is the case with the Ysleta del Sur, tribes that are seeking federal recognition often have to show a historic tie to the land to secure their rights. The Ysletan dislocation and emplacement far to the south is one example of how the relationship between place and identity can change.

Following the discussion about the dislocation and the impacts on life and identity, I present the second epoch: land loss and changing food practices during the mid-1800s to the early 1900s. Using archival records and oral histories, I explain that during this era of re-emplacement and land loss the Pueblo community began to feel the effect of a shift from an agriculturally based economy to various forms of wage labor, a process that would permanently alter the health and wellness of the Pueblo because it made them reliant on foods that were produced by others and had generally less nutritional value. During this epoch it may seem that the tribal community was passively accepting its circumstances, possibly because its members were focusing on survival during this time of land loss, but this situation began to change in the following epoch.

After the period of land loss the Ysletan community is largely absent from historical records until local non-native activists began the quest for federal recognition in the early 1960s. Largely because of the termination-era politics of the time, the path to federal Indian recognition was difficult, resulting in a unique status in which the state held the tribal trusteeship, not the federal government. This third epoch signals the beginning of the Pueblo asserting its sovereign rights and actively changing how it interacted with the broader political economic context, particularly in regards to rapid infrastructural development. While this development was positive, as it was a strong expression of sovereignty, it also opened the doors to a steady flow of unhealthy government subsidies, an unfortunate by-product of federal Indian recognition.

As a result of recognition the tribe entered a fourth epoch marked by a short period of rapid economic growth followed by financial hardship. In this era of "boom and bust" the Pueblo survived as the first tribe to earn income from a successful casino *and* to have it shut down several years later as the result of a legal battle with the state. This rapid boom and bust placed the Pueblo and its members in several precarious situations which made conditions for diabetes prevention more difficult to achieve. Casino income funded deeply needed services, including new and large multigenerational housing districts, an educational center, and a large wellness center. However, these new services were not sustainable and resulted in an economic dependency on the income the casino generated. When the casino closed, it no longer provided the income necessary to support the expensive services and the tribe was forced to reduce all such programs. In addition, the boom economy introduced many

new practices among the membership that negatively impacted the health of the Pueblo, including a dependency for services as well as regular access to cheap and unhealthy food.

In the fifth and final epoch, the present-day post-gaming era, I discuss how the Pueblo is actively working to change the negative impacts of the previous epochs, particularly those that took place in the boom and bust era. The Pueblo is slowly attempting to improve the economic opportunities and health of its members by forming new partnerships with external organizations and researchers, and by enhancing the educational opportunities for tribal members rather than focusing on practices that promoted dependencies between tribal members and tribal services.

Why Revisit History?

Readers may ask why a select economic history of the Pueblo, including gaming, is necessary for a contemporary study about diabetes prevention. Studies concerning the changing political economies caused by tribal gaming have been conducted in the past (Darian-Smith, 2002; Eadington, 1984, 1998; Mason, 2000; O'Hara, 1995), including at Ysleta del Sur (Miller, 2004), but previous research at Ysleta del Sur has not examined how the economic transformations in each of these periods changed or restricted the possibilities for individual choice and identity in regards to diabetes prevention. By examining political economic structures in each epoch I am able to examine historical events and situate them in context rather than simply listing them chronologically and without reference to economic terrains, as has been done in other works on Ysleta del Sur Pueblo's history (for example, see Eickhoff, 1996; Miller, 2004). The political

economic framework is particularly salient because it links Ysletan political decisions, such as those regarding the recognition process, to the economic structures and possibilities (or limitations) in which they are situated.

In each section I attempt to include examples of the decisions individuals made, or likely made, given the broader context. I think it is important to keep this interplay of structure and agency in balance because those decisions tell us much about the value systems of the Ysletans both then and now.

Epoch I. Dislocation & Resettlement (1680-1847)

The first epoch that impacts present-day diabetes prevention and management at Ysleta del Sur Pueblo is the era of dislocation and resettlement (1680-1847). In this time the daily practices of native peoples who resided in what is today central New Mexico were disrupted and forever changed by the Spanish entry into the region. For the group that today is known as the Tigua of Ysleta del Sur Pueblo, Spanish contact had a dual impact: it resulted in displacement from their ancestral homeland and all associated places, and disruption to all ways of life, including agricultural practices. However, the relocation also resulted in shaping the sovereign group they are today. To understand this process, and how it reshaped their trajectory and identity in the present, some background history is needed.

The northernmost region of New Spain, what is today New Mexico, was once home to more than 140 agricultural Pueblos with population estimates exceeding forty thousand (Ortiz, 1994, p. 296). The descendents of these pueblos today comprise the populations of nineteen Pueblo tribes in New Mexico, one in Arizona, and one in Texas.

The Pueblos differentiate themselves by language. Keres-speaking pueblos include Acoma, Laguna, Santa Maria, Zia, Kewa, Cochiti, and San Felipe. The Tewa-speaking pueblos include San Ildefonso, Santa Clara, Nambé, Pojoaque, Tesuque, and Ohkay Owingeh. The Tiwa-speaking Pueblos include Isleta, Sandia, Picuris, and Taos. Jemez is the only Towa-speaking Pueblo, and Zuni is the only Pueblo that speaks Zuni. Ysleta del Sur Pueblo, the newest of the Tiwa-speaking Pueblos, is located far south of the others along the U.S.-Mexico border in West Texas (Figure 11).

Considering the Pueblos as distinct cultural groups is inherently problematic because *Pueblo*, like the term *Indian,* was introduced by the Spanish and has been used by anthropologists and other non-Indians for their own purposes. Many authors, in particular Ortiz (see 1994, p. 296), one of the leading scholars on Southwestern peoples, have stressed the importance of land to identity. Ortiz, himself a member of a Pueblo, argues that one distinguishing feature of Pueblo people is that they have never been displaced from their ancestral land. Because this does not apply to the Tigua of Ysleta, other parameters must be considered in order to recognize the Tigua as a culturally distinct people.

Figure 11: U.S. Southwestern Pueblos. Ysleta del Sur Pueblo is located on the bottom of the map, far from the other pueblos.

Spanish sources describe the first documented contact with Rio Grande Pueblo people on September 17, 1539, when Francisco de Vásquez de Coronado and Fray Marcos de Niza accompanied by a troop of soldiers entered the Tiwa village near present-day Albuquerque (Vecsey, 1996, p. 123; Wright, 1993, p. 5). Initially, the Spanish were well received by the local population (perhaps in an attempt to appease

the Spanish in the hope they would leave quickly) until Coronado decided to prolong his stay through the winter of 1540-1541 and demanded 300+ blankets and pieces of cloth for the Spanish expedition (Rickey, 2000, p. 2360). Tensions rose, and after the suspected rape of several Pueblo women (Wright, 1993, p. 8) the Tiwa reacted by scattering the majority of the Spaniards' cattle and horses, essential staples for Spanish garrisons. The Spanish troops reacted with force, and by the end of the skirmish approximately 300 Tiwa were killed (Eickhoff, 1996, p. 41) forcing the remainder of the group to surrender to the Spanish. Frustrated by the lack of gold, and still searching for the "Seven Cities of Cibola," Coronado left the Tiwa villages the following year, and it was not until the mid-1590s that the effects of contact were documented.

On August 24, 1596, Don Juan de Oñate, along with 130 Spanish soldiers, their families, and 7,000 head of cattle, set out from Mexico City to pacify and colonize the northern frontier (Rickey, 2000, p. 1653; Vecsey, 1996, p. 125). On the way north, Oñate settled the town of El Paso del Norte (the location of two future border cities, Ciudad Juárez and El Paso on opposite sides of the river) and made initial contacts with various Indian groups from the Chihuahua desert as well as Pueblo groups residing to the north. Oñate then pushed upriver, placing the capital of the northern frontier in Santa Fe in 1610 and laying the foundation for 300 years of European occupation and colonization.

Spanish occupation of the northern frontier had immediate effects on the lives of the local inhabitants. Smallpox and other contagious diseases spread quickly in Pueblo settlements, including Isleta Pueblo (Wright, 1993, p. 9), and on a social level the

Spanish imposed new forms of political organization, language, and legal and governmental structures. Commissioned by the Franciscans and eager to gain prestige, Oñate attempted to duplicate the methods Cortés had used to conquer Mexico City (Wright, 1993, p. 125). He quickly chose a Pueblo woman to act as translator[37] while Franciscan priests and brothers played out their roles as the first twelve missionaries, and throughout the valley Spanish troops displayed their superiority and force. In a gathering of the heads of thirty-one pueblos, Oñate, with the help of translators, declared that the Spanish king had sent him for

> the salvation of their souls, because they should know that their bodies had no souls, which did not die even though the bodies did. But if they were baptized and became good Christians, they would go to heaven and enjoy an eternal life of great bliss in the presence of God . . . [if not] they would go to hell to suffer cruel and everlasting torment (Gutiérrez, 1991, p. 49).

The methods that the Franciscans employed to control the local population and dominate fertile agricultural lands paralleled the *encomiendas* (tributary labor systems) and *repartiemientos* (forced labor) used during the colonization of central Mexico and South America. By forming large labor camps the Spanish hoped to concentrate what remained of the smallpox-ridden population into fewer pueblos; it is estimated that by the late 1600s, only one third of the original pueblos remained. It is likely that consolidating what remained of the population aided in the spread of the disease. Many of the regrouped people were issued *republicas* (land grants) by the Viceroy of New Spain (Vecsey, 1996, p. 129) and were governed by each respective Pueblo's traditional leader. Meanwhile, Franciscan priests used their authority to suppress as

[37] Oñate was attempting to replicate Cortez' success using "La Malinche," a native translator.

much of the Pueblo religion as possible by destroying ritual masks and burning kivas (Vecsey, 1996, p. 131)

On August 10, 1680, Pueblo Indians rebelled against Spanish rule in a well-orchestrated attack on all religious and military settlements. Surprisingly, the Tiwa Pueblo of Isleta near present-day Albuquerque does not appear to have participated in the revolt, and some of its members were dislocated south to El Paso del Norte along with the retreating Spanish colonists (Hackett & Shelby, 1942). Their reasons for not participating in the revolt remain a central point of discussion and debate today, including at Ysleta del Sur Pueblo (Burns, 1992). Three possibilities have been presented in the literature. First, perhaps the Tiwa at Isleta did not receive the message that the day of revolt had been moved up and thus they "gave into" the Spanish domination,[38] resulting in an "exodus" from the region (Eickhoff, 1996, p. 99). It is difficult to ignore the religious implications of the use of the term "exodus" by Eickhoff. The Book of Exodus in the Bible tells how the children of Israel escaped from slavery. Led by Moses, the group of freed slaves embarks on a journey to the "Promised Land." Given the tortuous relationship between the Spanish and native peoples, such an analogy is understandable. Though this hypothesis of a departure to safety is plausible, none of the tribal historians I spoke with at the Pueblo accept it, though they do discuss this as one of many possible explanations.

[38] Inter-Pueblo communication and secrecy was central to the organization of the revolt. Fearing the Spanish had learned of the revolt, the Pueblos decided to attack earlier than they had planned and were not able to inform all of the communities.

A second hypothesis concerning the dislocation suggests that a small number of Ysletans may have allied with the Spanish in order to gain protection from Comanche and Apache raiders (Kelly, 1941, p. 81; Wright, 1993, p. 10). This explanation is also plausible, though tribal oral histories explain that Apaches continued to attack the Ysletans. Eventually the Ysletans, not the Spanish, were able to defeat the Apaches, resulting in a truce between the two tribes.[39]

Finally, one could postulate that once the revolt began the Tiwa realized they would be unable to attack the now-alerted Spanish and were caught between a rock and a hard place -- between Spanish forces and angry revolutionary Pueblos from the north (Ortiz, 1969, p. 338). As such, they put down their arms and perhaps hoped to revolt another day.

Interestingly, in *Extinction versus Survival* (Adam, 2009), the latest work concerning Ysleta del Sur Pueblo, one Ysletan states that tribal members escaped south to El Paso with a tribal drum, canes of leadership, *abuelo* (grandfather) masks, and a variety of other cultural items that are significant, explaining that "the Spaniards would never have allowed the Indians to get these things if they were slaves." It seems plausible that if the Ysletans had been taken by force, they would not have had time to gather religious artifacts while defending themselves. Adam also explores the notion that ancestors of the current residents of Ysleta del Sur knew about the religious site at Hueco Tanks, 30 miles east of the Pueblo's present-day location, as evidenced by pictographs. For whatever reason, the Spanish making their way south to El Paso del

[39] The victory and resulting truce is remembered at religious dances when tribal members use an "Apache yell," as it was explained to me, while dancing.

Norte were aided by a group of Isletans who were familiar with the region. After examining letters and oral histories, Vina Walz (1951, pp. 65-67) found that not all of the Isletans wanted to retreat with the Spanish and were able to escape:

> On the 20th of December 1681, the forces set forward by Otermín returned with pessimistic news, the Tigua pueblo of Isleta had been taken without a shot, but the Indians began to mass and the Spanish feared attack. Eventually it was decided to return to Isleta to Incorporate the Christian Indians in the column, burn the pueblo and return to El Paso. Since many of the 500 Indians, who had originally yielded to the Spanish, had escaped to join the rebels, thus being double apostate, there were only 385 to be brought back to El Paso. Only 305 of the 385 Tigua who were captures [*sic*] by Otermín, at Isleta, New Mexico in 1682, were still with the Spaniards when a count was taken shortly before the returning army reached El Paso del Norte.

As I discuss in Chapter 4, the dislocation is remembered yearly during the peak religious activities that lead up to the annual Fiesta de San Antonio. Present-day oral histories and yearly religious events recall the Pueblo's dislocation and mark the exact spot where the tribal members camped when they arrived in El Paso del Norte. Practices concerning this location, including pilgrimages and their implications for diabetes prevention, are discussed in a later chapter.

Once in El Paso del Norte the Spaniards and relocated Isletans erected the Ysleta Mission, the oldest permanent settlement in Texas. Current scholars, as well as residents at the Isleta Pueblo near Albuquerque, question why the Ysletans willingly chose to remain in El Paso. One of the first censuses shows that as many as half of the native population of El Paso may have died from the combined effects of starvation and disease, there may have been an unsuccessful revolt in 1681 (Hackett & Shelby, 1942, pp. 200-201; Martin, p. 90), and there were raids on the settlement by Apache groups (Timmons, 1992, p. 32). In response to these deteriorating conditions, Indians from

other groups such as the Piro, Manso, and Suma nations may have formed alliances with the Ysletans and determined that temporary relocation was the best option.

The alliances and consolidation of tribal groups, though likely essential for the survival of Native peoples in the El Paso del Norte region, was a problem for Governor de Vargas, who described the Tigua of El Paso del Norte as "living in miserable huts in the Pueblo of Ysleta, in the district of El Paso" (Martin, 1994, p. 93). Although he initially planned to return the Tigua to their original Pueblo, de Vargas changed his stance and allowed all groups to stay at the mission complex of Nuestra Señora de Guadalupe. In the century that followed, the Tigua population grew to more than 500 and a strong relationship formed with the resident padres (Wright, 1993, pp. 12-14).

The few records that do exist from this early period point to an agricultural subsistence-based economy that utilized *acequias,* agricultural ditches that were dug throughout the Southwest by local peoples and are maintained to this day using a complex web of laws and social obligations (Rivera, 1998; Rodriguez, 2007, p. 2). In 1684, few crops were harvested, and "refugee" settlements were relocated upstream from San Lorenzo, about one league from El Paso del Norte, where irrigation could be better situated (Hughes, 1935 [1914], pp. 361, 375). The acequias drew water from the Rio Grande into local agricultural fields (Hendricks, 1993, p. 10), and in 1692 Governor de Vargas mentioned his concern that Indian access to water in the region should be guaranteed (Twitchell, 1914). This concern for tribal water rights in the late 1600s is unusual, if not unique, and appears to have benefited the Pueblo because the archival record indicates improved agricultural outputs in the early 1700s. Ysletans managed the

acequias on their own by 1711, as is evident in a legal testimony in which Tomás de la Cruz, Tigua governor of Ysleta, stated that a local rebellion began on the day when he "had been out cleaning acequias with all his people at the time" (Hendricks, n.d.).

On October 15, 1713, King Philip V directed the Viceroy of New Spain to protect the civil liberties of the Pueblo Indians, with provisions that "sufficient water, lands and timber entrances and exits for cultivation be given to the settlements and towns (pueblos) of Indians which may be formed and common of one league, where they can pasture their cattle, without their being mixed with those of the Spaniards" (Bowden, 1971, p. 137). And although the outlying region may have "diminished and dried-up," as Tamarón remarked in 1725 (Adams, 1954, p. 37), the irrigated lands in 1726 produced a variety of crops. Pedro de Rivera, a Spanish brigadier general sent on a tour to inspect the frontier defenses of New Spain in 1724, provided an account. While inspecting the northern frontier of New Spain, he described irrigated lands which produced wheat, corn, beans, and all kinds of vegetables, as well as vineyards:

> The natural fertility of the land is improved by the number of irrigation ditches which carry water from the said Rio del Norte, making the farms independent of droughts (Castaneda, 1936, p. 276).

With the Ysletans now living self-sufficiently in their new surroundings, the Spanish crown recognized the tribal population diplomatically, perhaps to improve missionizing efforts. On March 13, 1751, the crown granted "a league of land" [40] to the Pueblo of

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[40] Spain, and later México, issued grants of land to individuals, groups, towns, pueblos, and other settlements. Grants were typically "individual" or "community" land grants. Grants awarded to towns and other settlements were modeled on similar communities in Spain, where the king granted lands adjacent to small towns for common use by all town residents. Grants to tribal peoples set precedence for legal recognition and land

San Antonio de Ysleta—a land grant of approximately thirty-six square miles surrounding the mission church and encompassing territory on both sides of the Rio Grande.[41] Since most Ysletans lived on the south side of the river, the land on the north side was likely used as *ejidos* (communal lands) (Bowden, 1971).

The land grant provided a permanent land base and secured arable land and water, each a precious necessity in the harsh Chihuahuan desert. A legal record of the land grant by Governor Tomás Vélez Cachupín recognized the quality and considerable quantity of land being given to the Pueblo, explaining that the "irrigation was of sufficient size for the fields of the Indians of the nations that form this pueblo as well as those who may join them in the future" (cited in Hendricks, 1993a, p. 24). Spanish documents from this period state that approximately 80 Tigua families totaling 429 persons were using "acequias [to irrigate] their land which they plant and maintain" (Ysleta del Sur Pueblo, 2000a, pp. 8-12).

The selection of this particular land was also important for sacred reasons. Various plants and animals in the area were used for medicinal purposes. Individuals from Ysleta del Sur made pilgrimages to the nearby mountains to the north and east to obtain sacred plants, a practice that continues to this day, though with much greater secrecy because many locations are now on federal or private lands.

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claims. For more information on land grants, particularly those in the U.S. Southwest, see U.S. General Accounting Office (2001).

[41] This land grant was unlike the grants to the Pueblo Indians of the north, in what is today New Mexico, in 1689. The Mexican government reaffirmed the Ysleta land grant, but only after several court battles. The Ysleta grant was later upheld by the state of Chihuahua, and on February 1, 1854, it was also recognized and confirmed by the state of Texas.

The dislocation and re-emplacement that occurred during the first epoch (1680-1847) has serious ramifications for present-day diabetes prevention practices, particularly those that take place on reservation lands and with enrolled members. Settlement in a new location meant adjusting to a new environment, developing new agricultural practices appropriate to the Chihuahuan desert climate, and forming new alliances and support networks. Although the support of the king of Spain was undoubtedly beneficial, the disruption set in motion a series of events that further impacted present-day diabetes prevention.

Epoch II. Land Loss & Changing Food Practices (1848-1959)

Though the Pueblo had its own land base, international affairs between the U.S. and Mexico resulted in the loss of agricultural land, and a shift from an agricultural economy in the mid-1800s to wage labor in the early 1900s. As a result, the native food practices began to die away while tribal members endured economic hardship. During this second epoch (1848-1959), community members struggled to survive and were not able to counter dominant economic practices and associated foods, such as white flour, in their daily lifestyle.

In 1848 the Mexican-American war drew national attention to the problematic boundary between the United States and Mexico and the annual shifting of that border due to flooding of the Rio Grande. The subsequent Treaty of Guadalupe Hidalgo stabilized the international boundary but cut the original pueblo grant nearly in half, reducing opportunities for subsistence farming. As explained by an unknown chronicler in 1848, “whenever the river rose, its waters would run in two channels around the

Pueblo forming a 20 mile long island" (Ysleta del Sur Pueblo, 2000a, p. 25). In 1853 a new southernmost channel for the river was dug by national surveyors and Ysleta, now located in the United States, lost nearly half of its "most fertile" land base (Ysleta del Sur Pueblo, 2000a, p. 25).[42]

The most serious effect upon the Ysleta land base occurred when the U.S. Civil War erupted and Texas seceded from the Union to join the Confederacy. (See Figure 13 for an early drawing of the Pueblo, including soldiers with bayonets). In 1864 President Lincoln made a necessary political decision that cost the Ysletans nearly their entire land grant: he issued land titles and recognition to the New Mexico pueblos, at that time the only native peoples in the U.S. to hold title to their own land, but not to the other Pueblo in Texas, because Texas was part of the Confederacy. Ysleta were excluded from these legal proceedings and remained unacknowledged and without title to their land for nearly 100 years.

[42] The boundary between the United States and Mexico was far from settled, and numerous treaties between the two countries were ratified over the next 100 years. For detailed information see United States and Mexico International Boundary & Water Commission (2013.

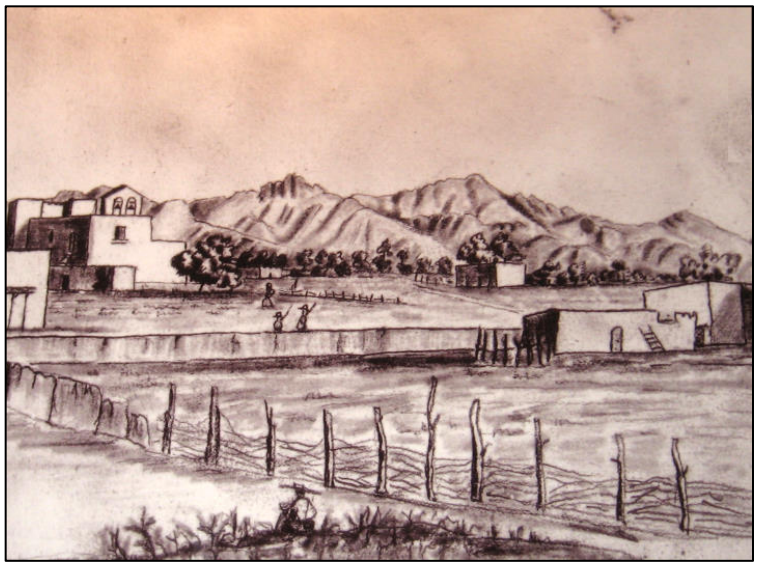

Figure 12: Sketch of Ysleta del Sur Pueblo, drawn by a Confederate soldier in 1862 and believed to be the oldest image of the Pueblo and Mission.

During the 1870s the Pueblo land base saw rapid transformations. On May 9, 1871, the Texas Legislature passed "An Act to incorporate the town of Ysleta in El Paso County," the region encompassing the Pueblo land. The Act served to dissolve communal landholdings and incorporate the most fertile land at the Pueblo. As the act stated,

> The citizens of the town of Ysleta, in the county of El Paso, be and are hereby declared a body corporate by the name and style of "The Town of Ysleta," and by that name may sue and be sued, may have and use a corporate seal, may hold real and personal estate, and may dispose of real estate in the manner hereinafter provided, and in no other manner (May 9, 1871, 12th Leg. Ch. 175, 1871 Tex. Special Laws 297).

The most damaging portion of the law, in Section 24, allowed the land to be further divided and sold in individual parcels, laying the foundation for the current checkerboard nature of the reservation:

> That the town council shall have the power, in the manner hereinafter specified, to grant or sell portions of real estate, the property of said town Ysleta, to any of the following person or persons, and to no other: First, to actual settlers on said lands who are citizens of the town of Ysleta; second, to any person or company for the erection of buildings to be used for mechanical or manufacturing

> purposes, or for the building of railroad depots or workshops; provided, that the land granted or sold shall not exceed the quantity to be actually covered by the erection of said buildings; third, to any person or persons who may desire to become citizens of Ysleta, and who shall become actual settlers on the land sold or granted (May 9, 1871, 12th Leg. Ch. 175, 1871 Tex. Special Laws 297).

With the annexation enacted, local papers began to advertise land to "settlers." Within a decade the tribal land base and inhabitants were transformed. In 1881 the *El Paso Herald* announced:

> Ysleta invites the immigrant to buy cheap lots and homes. It may surprise your readers that we have a full blood Indian tribe in Ysleta. They dance the war dance and sing aboriginal songs once a week. However, they are counted among our best citizens, being thoroughly civilized.

In time the housing and the tribal community blended in with non-native peoples. Writing in 1881, Lieutenant John C. Bourke recorded the following in his diary,

> The pueblo of Isleta is now so thoroughly incorporated in the Mexican-American town of Ysleta that it requires a very accurate acquaintance with the place to tell which are the houses of the Indian and which are those of the more civilized neighbors. The houses are all of adobe, one story in height and opening by windows & doors upon the ground floors, the use of ladders being entirely discarded. (Ysleta del Sur Pueblo, 2000b)

Several anthropologists did pass through Ysleta del Sur but gave the Pueblo little attention. In 1888 anthropologist James Mooney, while on an expedition to find peyote, passed through Ysleta del Sur and reported in a letter to the Smithsonian that the residents were "descendants of a single Pueblo tribe formerly living at Ysleta [*sic*]" (1898). Several years later anthropologist Walter Fewkes, while on a "brief visit to El Paso" (1902, p. 59), documented Ysleta's dual Spanish-Pueblo governmental structure and practices such as "foot-races" and "rabbit hunts" in the desert, and the use of Spanish as the primary language among the residents. Fewkes also noted that apart from the ceremonies, the Ysletan's clothing, physical appearance, and homes were

indistinguishable from those of other residents in the area. Finally, Rex E. Gerald (1970) provided a brief examination of Ysleta del Sur in a collection of materials that were used to support the federal recognition process during the 1960s.

Since Bourke, Mooney, and Fewkes passed through the area quickly, they neglected to observe that the tribal community was intact, and was even growing. In Figures 15 and 16 it appears as though stucco and second floors were added to the Pueblo housing.

Figure 13: Piarote Granillo, an Ysletan Potter, stands next to an horno (oven) in the Old Ysleta Pueblo, c. 1876.

Figure 14: Old Ysleta de Sur Pueblo, c. 1876, with church dome visible on left in rear.

Photo from the Aultman Collection, El Paso Public Library, on display at the Pueblo Cultural Center.

There is some indication that Ysletan economic opportunities shifted from farming and agriculture to wage labor in the latter half of the 1800s. In 1856, Ysletans "raised everything to east [*sic*] except potatoes" and made extensive use of "gardens," with apples, quinces, onions, plums, peaches, figs, and apricots, and fished in the Rio Grande and hunted a wide variety of wild game (Ysleta del Sur Pueblo, 2000a, pp. 94, 150-151). A letter from an unknown traveler in 1856 stated that eight acequias were still being maintained, and were used to bring water to their crops in dry seasons, and that Ysleta lands were "the most fertile spots in the whole valley" (Ysleta del Sur Pueblo, 2000a, p. 98).

The archival record and census reports also show that the economic opportunities were shifting toward wage labor as a result of the introduction of wheat flour. Captain Simeon Hart, a local developer, built El Paso's first flourmill in 1849 at the location that would later become Ft. Bliss (Figure 16). Hart, born in Highland, New York, in 1816, grew up in St. Louis, Missouri, and after joining the military was stationed along the border. While in service he met and married Jesusita Siqueiros, the daughter of a wealthy Chihuahua flour miller, and relocated to El Paso del Norte to establish a flourmill. Hart's first contract with the army, signed on March 28, 1850, required that he provide flour for one year to the posts of Doña Maria, the U.S. post opposite El Paso del Norte, and San Elizario for eleven cents a pound. The mill was

> [built] of adobe blocks, nearly three feet thick. For the roof he laid Montaña sycamore beams across the top of the walls, covered the beams with peeled branches of willows, and on top of the branches packed four inches of adobe. His power came from the river. The Mexicans – at that time Juarez (El Paso del Norte) was a city of 10,000 – had built a dam across the river and permitted Hart

> to take out what water he needed for his mill. “It was the chief industrial enterprise in the valley,” wrote W. W. Mills in 1858 (Long, 2010).

In the 1860 census the value of Hart’s property, real and personal, was reported to be $350,000, a sum that made him the wealthiest man in the area, though the mill went out of business in 1895.

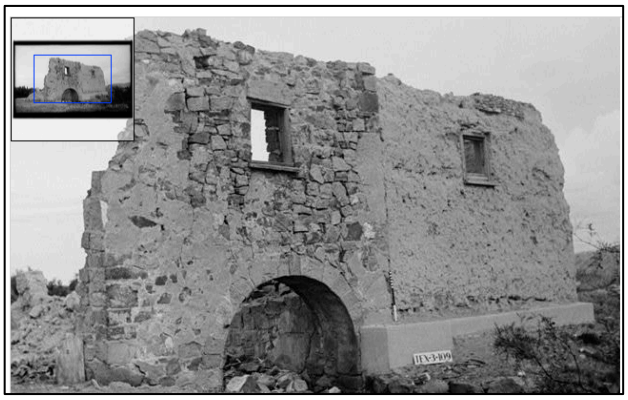

Figure 15: Simeon Hart Mill, El Paso, Texas.

Photo by Marvin Eickenroht, May 25, 1936.
Historic American Building Survey (Library of Congress).

At around the same time, the Grist and Roller Mill, located several miles east of the Pueblo in nearby San Elizario, sold a popular “Eagle Brand” flour (San Elizario Genealogy & Historical Society, 2012). Flour from the mill was stored in “El Molino,” as it is known today by locals, in a building that has since served many purposes including a residence, office, and a warehouse, and later as a post office, a grocery store, a service station, and now, a Pentecostal church (San Elizario Genealogy & Historical Society, 2012).

Figure 16: Grist Mill in San Elizario.

Photo from the San Elizario Genealogy Society (2012)

The Pueblo's oral history, along with census records, document that Pueblo farmers were producing flour for each of the mills, but not consuming it, at least initially. The 1860s Ysleta Census identified nineteen "Indian farmers" as well as eighteen farm-related occupants, including "Indian herders" and "Indian farm hands" (Ysleta del Sur Pueblo, 2000a). By the 1870 U.S. Census, however, few Ysletans were listed as independent farmers; most instead were categorized as "farm laborers" or simply as "laborers" on surrounding farmlands (Ysleta del Sur Pueblo, 2000a, p. 81). This shift in census category is likely due to loss of land from theft and incorporation by the township of Ysleta, and possibly the increased encroachment of cotton, a new cash crop.

In addition to flour, grapes (and wine, a staple during the Spanish era) became a source of income for the local peoples, rather than a means of subsistence. As explained by a tribal historian during my research, and supported in the archival record, the region produced some of the best wine in the area and the Pueblo community was paid for their service (Figure 18).

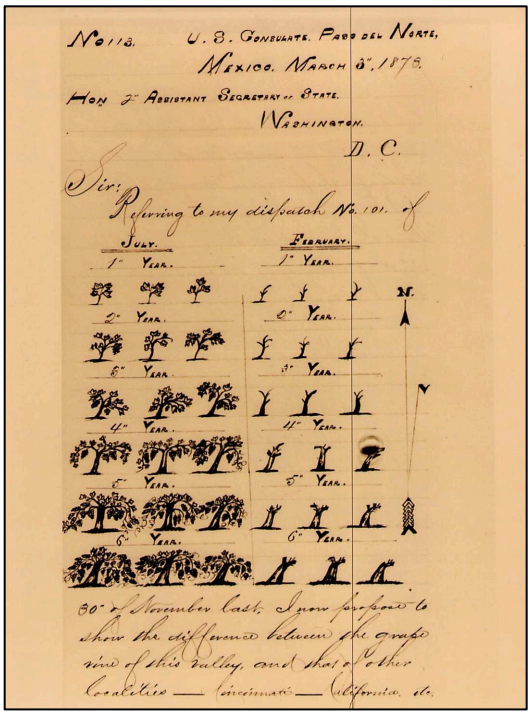
No 118. U. S. Consulate. Paso del Norte,
Mexico. March 3, 1878.
Hon. J. Assistant Secretary of State.
Washington.
D. C.
Sir:
Referring to my dispatch No. 101. of
July. February.
1st Year. 1st Year.
2nd Year. 2nd Year.
3rd Year. 3rd Year.
4th Year. 4th Year.
5th Year. 5th Year.
6th Year. 6th Year.
N.
30th of November last, I now propose to
show the difference between the grape
vine of this valley, and that of other
localities — Cincinnati — California, etc.

Figure 17: Paso del Norte Vineyards.

Ysleta del Sur Pueblo (2013c)

The text at the bottom reads, "I now propose to show the difference between the grape vine of this valley [left] and those of other localities [right]."

Continued Anglo encroachment on Ysleta land injured the fragile local economy by taking away arable land while “simultaneously contributing new cultural elements and language to an already diverse regional culture” (Campbell, 2006, p. 294). Several deed records state that Ysleta lands were “relinquished” or annexed by El Paso County at the turn of the century (Ysleta del Sur Pueblo, 2000a, p. 60) or lost through debts of an unknown nature (Ysleta del Sur Pueblo, 2000a, p. 61). At least some Ysletans apparently considered relocating to Mexico during or shortly after the Mexican Revolution in 1910 (Miller, 2004, p. 217).

Tribal oral histories support the findings that lands were lost and the tribal members were now firmly entrenched in wage-based labor. Sebastiána Paiz, great-great-great grandmother of a participant in this research, developed a small alcohol import business around 1917. As told by one of her descendants, Paiz would load her mule in Mexico with contraband and other goods. Several miles east of the border crossing she would set her mule free and slap it on the hindquarters, yelling, "Go home to the house!" She would then walk back to the international crossing and, many hours later, meet her mule, still carrying its contraband, waiting patiently to enter the family corral.

Figure 18: Sebastiána Paíz and her mule. c. 1917.

Ysleta del Sur Pueblo (2013d)

Though some community members thrived because of international trade, many tribal members today explain that the early 1900s were difficult times for the Pueblo. Without their own land to farm, tribal members had to support each other or search for work away from home. As explained by a tribal historian, every day the households would have a chore to complete. On Mondays families would wash clothing and begin

organizing the activities for the week. On Tuesdays tribal members would bake bread made from local flour and lard, by that time part of the community's regular food supply. On Wednesday families would chop wood to replenish what was used during the bread baking. Later in the week other chores and duties were completed.

Aside from the household tasks, both adults and children would work in the fields, picking cotton or pecans in distant Las Cruces or even further down the valley, picking onions. As explained by a tribal historian, "our town was very, very, very . . . you could say we were the poorest of the poor here in El Paso county. So our diet was limited to the basics like I'm saying, which wasn't too well rounded. There wasn't much meat. Well, vegetables, the basics . . . onions, potatoes, tomatoes; but hardly any fruits or outside our range of buying the groceries."

With limited opportunities to obtain food, many individuals gathered what little wild foods were available, perhaps out of necessity, as explained by a tribal historian,

> We still managed to survive, not starve. Of course, way back also, I used to be very small, we also used to go with the elders deer hunting or rabbit hunting also. We had those, but I was small at that time. Or fishing. The fish were edible at that time here in the canals. Or, we used to go down with our fathers down to the river, but through the decades the fish became more scarce. The rabbits, the hares, even the deer dispersed further and further up into the mountains.
>
> But we also supplemented our diet with native foods. By that I'm referring to wild spinaches. Even the citrus; and you could find wild asparagus. Also, some of the tribal members used to grow pumpkins in whatever little fields we had left, or corn . . . or, also we used to go to the mountains to gather mesquite beans, which were, well they've always been a main food for us. . . . But they still survived hunting and growing whatever little corn would grow at that time.

Opportunities to obtain food changed radically and quickly. Although the Pueblo had a rich history of gardening and fruit production, as is evident in the archival records and oral histories, the loss of land drastically changed food consumption practices; it forced the members of the Pueblo to shift their diets from healthier fruits and vegetables toward a wheat-based meal, a process that would continue in the following epoch, federal recognition.

This second epoch, land loss and changing food practices (1848-1959), was characterized by events that severely impacted the Pueblo and set the conditions for a future epidemic of diabetes at the pueblo. The Mexican-American War and the Treaty of Guadalupe Hidalgo reduced the Pueblo's arable land base. The U.S. Civil War, and the role of Texas in the Confederacy, meant that the Pueblo was not recognized or granted land by President Lincoln in 1864, setting the stage for additional land loss, annexation of Pueblo land by El Paso County in the 1870s, and an influx of immigrants to tribal lands in the 1880s. These activities spurred economic changes, and tribal members shifted from agricultural economies to wage labor, pushing the tribe to consume less fruits and vegetables and more wheat products. In addition, religious institutions and related practices such as dancing, chanting, and singing, once enacted in public, were pushed into hiding for fear of retribution from the new immigrants. These activities would persist in the Pueblo community until the 1960s epoch of federal recognition.

Epoch III. Federal Recognition (1960-1992)

It was not until the federal recognition process in the 1960s that the Pueblo was again transformed. The Pueblo's fight for recognition was unique and is worthy of closer examination for two reasons. First, Ysleta del Sur actively pursued state *and* federal recognition simultaneously, an unusual route that would eventually ensure receipt of both state and federal development funds. Second, the political strategies employed by Pueblo leadership show how the tribe affirmed its sovereignty, even though it may have cost them in terms of economic success. An unforeseen consequence of recognition and the accompanied federal funds and services was the complete urbanization of food practices in the 1960s, when the tribe shifted from partial reliance agriculture to more expensive canned foods and fast foods. This set the stage for the dramatic increase in diabetes at the Pueblo today.

According to Miller (2004, p. 223), Ysletans were facing severe economic hardship in the 1960s, when tribal leaders began seeking state and federal support. The tribe initiated the federal recognition process at the urging of the National Congress of American Indians in 1968, which coincidentally held its annual Board of Directors meeting in El Paso in 1969 (V. Deloria, 1969, p. 243). Executive Director Vine Deloria, Jr. met with the group (accompanied by Tom Diamond, an Anglo lawyer who volunteered to represent the tribe) and later proclaimed in *Custer Died for Your Sins*, "The modern era of Indian emergence had begun" (1969, p. 243). Deloria and the NCAI believed that a successful struggle for recognition by Ysleta del Sur Pueblo in particular would signal a change in federal policy. They hoped that if Ysleta del Sur Pueblo were recognized, the

Bureau of Indian Affairs would begin recognizing other unacknowledged groups in the United States (Miller, 2004, p. 227).

To prepare for the recognition process several interviews of tribal members were conducted by an assortment of lawyers and their assistants. The few available accounts state that the Ysletans were living in adobe houses and working in local cotton fields (Miller, 2004, p. 223; Ysleta del Sur Pueblo, 2000a, p. 359). As a current tribal historian states, the Pueblo had maintained its identity, much to the surprise of scholars.

> It was an enigma, but we survived. We mostly kept to ourselves without too much exposure to the outside public. Well, there were a few times that the anthropologists acknowledged us. They came by and did what I called studies or whatever, Fuchs, Bandelier, Ken Tate. But to us you know, we just survive and we are bigger without asking too much from nobody, from anybody. It was until the 70s that the government started coming around and interviewing our people. Of course, they always knew who we were, they just . . . they're just wondering.

With these ethnographic interviews and notes (Ysleta del Sur Pueblo, 2000b), the leaders of the recognition process believed acknowledgement would proceed smoothly. It did not.

The process of seeking federal recognition encountered stern resistance from the Bureau of Indian Affairs, largely because of the legacy of the termination era. Indian termination was U.S. policy from the mid-1940s to the mid-1960s because Congress believed that American Indian tribes would fare more successfully if they assimilated

into mainstream society (Getches, Wilkinson, & Williams, 2005, pp. 199–216).[43] Congress began ending the trust relationship between tribes and the federal government during this period, bringing tribal populations under the legal jurisdiction of both federal and state laws rather than tribal administration and laws. At the height of the Termination Era – from approximately 1953 to 1964 – 109 tribes had their recognition status terminated, 13,263 Native Americans lost tribal affiliation, and approximately 1,365,801 acres of trust land were removed from protected status (McHugh, 2011, p. 35). Tom Diamond, the lawyer working with the Ysletans on the recognition process, was initially unaware of the termination era politics until the BIA informed him that they would not support the recognition process and that the tribe needed to obtain BIA trusteeship either through Executive Proclamation or an act of Congress. When Diamond responded that he was seeking these options the BIA replied, "The President no longer issues executive orders recognizing new tribes. Congress no longer passes laws recognizing Indian tribes. We don't make treaties with anyone unless we are at war with them" (Schulze, 2010, p. 24).

Diamond immediately began a process of legal maneuvering that allowed him to simultaneously seek state and federal recognition, with the ultimate goal of achieving *state-funded* federal recognition, which was crucial given the political climate in Congress in which legislators did not want to provide any form of federal funding to

[43] Though House Resolution 108 and Public Law 280, both in 1953, officially announced the U.S. federal policy of termination, the process of termination began as early as 1943 when the Senate commissioned a survey of Indian conditions. In 1983, President Ronald Reagan officially repudiated and announced the end of termination policies (Ulrich, 2010).

American Indian tribes. Though not ideal, it would grant the tribe federal recognition status, and although the tribe would not have access to federal funding sources, they would be able to access state funding. Diamond met with the Texas Attorney General to propose a bill in the Texas legislature "recognizing the tribe and agreeing to assume trust responsibility subject to getting a federal bill through Congress recognizing the tribe and transferring trust responsibility to the state of Texas" (Schulze, 2010, p. 24). Diamond's reasoning was that the Bureau of Indian Affairs would agree because they would not have any financial responsibilities for the tribe. Furthermore, Texas was already managing the federally terminated Alabama-Coushatta tribe in East Texas, setting a legal precedent. The BIA was initially reluctant, but eventually supported the proposal after Diamond used his political connections in President Johnson's White House to ensure the bill would pass the House Committee on Indian Affairs and the House floor, which it did.

Because the bill passed through the House and had the support of the president, Diamond expected quick passage through the Senate. Unexpectedly, New Mexico's Senator Anderson halted the bill's progress after being pressured by the New Mexico Pueblos, including Isleta, because as he explained, the New Mexico Pueblos maintained the Ysletans were allies of the Spanish during the Pueblo Revolt and as such should not receive recognition. After much discussion, representatives from the All Indian Pueblo Council, a council composed of the governors of the recognized New Mexico Pueblos, met with the Ysletans to discuss their political and cultural practices and decide the legal fate of the group. The visiting dignitaries, including those from the sister Pueblo, Isleta,

observed dances and ceremonies and agreed that the practices linked Ysleta to the more northern Pueblos. With this change in position, Anderson reversed his objection. The bill passed, and in 1968 President Lyndon B. Johnson signed Public Law 90-278 into law, granting Ysleta del Sur Pueblo federal recognition—at least provisionally. Although the federal government officially recognized the tribe, it transferred its trust responsibility to the state of Texas:

> Responsibility, if any for the Tiwa Indians of Ysleta del Sur is hereby transferred to the State of Texas (Tiwa Indians Act, Pub. L. No. 90-287, 82 Stat. 93, Sec. 2, 1968).

The bill further stated that the Pueblo was not eligible for funding from the federal government:

> Nothing in this Act shall make such tribe or its members eligible for any services performed by the United States for Indians because of their status as Indians nor subject the United States to any responsibility, liability, claim, or demand of any nature to or by such tribe or its members arising out of their status as Indians, and none of the statutes of the United States which affect Indians because of their status as Indians shall be applicable to the Tiwa Indians of Ysleta del Sur.

Unfunded Federal recognition with a state as trustee was and remains unheard of in American Indian policy; but the opportunity to benefit financially from state programs outweighed the cost of unfunded federal recognition, since the tribe still held formal status as a recognized American Indian tribe. This outcome was highly desired by the Ysletans. The Pueblo accepted the new status and began to work with the Texas Indian Commission on issues of economic development and state funding.

State recognition did transform the economic landscape for Ysleta del Sur Pueblo, yet at the same time it placed new pressure on the group to “play Indian” or project an acceptable Indian identity by Texas standards. The Texas legislature

approached the Pueblo leaders on the development of "Indian dance tourism." Ysletan leaders Jose Granillo, Miguel Pedraza, Ray Apodaca, and Trinidad Granillo vehemently rejected Indian tourism because they believed the projects would interfere with religious ceremonies. It is not surprising that Texas wanted the tribe to promote Indian tourism, for as Cramer notes, "dominant U.S. society has a very fixed idea of what an Indian looks like" (Cramer, 2005, p. 105). There are countless images of Indians in the media, donning braids, riding horses, and wearing leather garments, and while some native individuals may match this appearance, most native peoples, especially those residing in urban areas, do not (Deloria, 1998). The image of an Ysletan living on the border with Mexico clearly does not meet the Plains Indian stereotype that was popular in El Paso in the 1970s, especially if one considers the substantial interaction and marriage between local Mexican people and Ysletan people. By refusing to develop Indian tourism in the 1970s, the Pueblo leadership both reaffirmed their identity as Ysleta del Sur and rejected dominant stereotypical images of Indians.

In addition to advocating the development of Indian tourism, the Texas legislature proposed a written constitution that would mirror that of the State of Texas, believing a constitution would make business pursuits easier to develop and negotiate. The tribe, however, believed a written constitution would allow outsiders to interfere with tribal political organization, and they opposed it. Ray Apodaca openly expressed, "I'm Indian and proud of it, but I can do it on my own by myself" (Miller, 2004, p. 224) Instead, the tribe chose to use their state status to pursue tax credits and local and federal programs that promoted economic development without interference in tribal

policies, or requirements for integration with external businesses. This example sheds light on how federal recognition and state policies functioned to provide local economic development on tribal land. For many native peoples, tribal economic development has been promoted and supported as a means to enhance tribal sovereignty (Hosmer & O'Neill, 2004, p. 322). By rejecting a written constitution the Pueblo leadership was affirming the tribe's sovereignty, even though it may have led to difficulty in securing business partnerships.

Following their own plan for development, the Pueblo's economic situation changed in 1970 when Ysleta del Sur formed the Tigua Tribal Enterprises to operate a craft shop, museum, medicinal herb and spice shop, and a restaurant, which together brought a total of 35 jobs to the community (Miller, 2004, p. 236). Using funds from these enterprises the Pueblo began purchasing land to create a residential area on a territorially contiguous reservation, rolling back the urban checkerboard division of land that had resulted from El Paso's annexation of tribal land. Using these lands in combination with purchases from a Housing and Urban Development grant of more than $1.7 million, the tribe was able to build a reservation housing complex of 112 single-family homes in 1976, along with a laundromat and recreational facilities, all of which could be closed off from the non-Indian public. At the same time, the Texas Department of Planning and Research initiated a "Plan for Restoration and Development" (Department for Planning and Research, City of El Paso, 1972), which improved infrastructure such as sewers and roads and complemented the HUD grant by replacing "blighted" Ysleta del Sur housing. Census reports from the era show that in

the decade following state recognition, new housing at Ysleta increased by nearly 500% (U.S. Census Bureau, 2000).

Tribal members and their families appreciated the changes, as a prior governor and respected elder explained: “Having houses and running water changed everything . . . [the housing project provided] basic items that we needed to live.” In addition, the physical separation of the Pueblo from the surrounding urban landscape, afforded by a contiguous land base, enabled an expression of sovereignty that may have helped to counter local non-Indian assumptions that “true Indians” do not live in urban areas, a point that the late Miguel Pedraza, then governor of the Pueblo, discussed: “We are still Indians, always! Just because we live in a city doesn't mean we aren’t Indians” (Steiner, 1972, pp. 16-17).

As the housing opportunities became more urban, so did food practices. Reflecting on the 1960s and 1970s, a tribal historian explained how prepackaged foods that were high in salts and fats became regular staples in homes, setting the foundation for the future incidence of diabetes:

> There was an exodus of most of the people that used to live in the old Pueblo to the new housing. Many tribal members sold their houses so there was an exodus from the old Pueblo to what we called that area at that time, “the new reservation.”
>
> . . . here in Isleta, and I'm going back to the early 60s, there were only about one supermarket that I remember, the P & N, which has now become the Big 8 . . . and two smaller ones I guess in the area. So yeah, food was available, but some people went all the way to El Paso to Fedmart and Piggly Wiggly. But most of us shop here locally at the Big 8, which we used to call the P & N grocery.
>
> There were changes also . . . we were concentrated in one area. I guess with the access for more jobs in the area, I think our diets changed also. During the 70s I remember my parents purchased more cereals with sugar and more TV dinners

> . . . more convenient foods, in other words. That probably led to the increase in diabetes among our people. The introduction of processed foods because they're more convenient; as opposed to in the early 60s when there was traditional foods.
>
> So I think the more accessibility to instant foods, canned food or frozen foods, the more the diabetes rate went up. All these pre-packaged foods, the pastries, and snacks. . . .

The changes in food practices during this era, a by-product of recognition and the consolidation of the reservation's population into HUD housing, shaped the conditions for the introduction of foods that are now recognized to cause obesity and comorbid conditions such as hypertension and diabetes. At the same time, the traditional Pueblo housing design changed from plaza-centered to individual residences, a process that hindered physically active religious activities. These changing practices would continue and become even more problematic during the tribe's gaming era.

Epoch IV. Gaming Era of Boom and Bust (1993-2002)

From the 1980s through the 1990s, the tribe went through rapid economic development. The construction of a casino in 1993 brought a boom in income, but its subsequent closure led to a dramatic scaling back of services. The changes to the reservation during the boom and bust era, particularly the developments aimed at providing indoor exercise services to tribal members, were influenced by strong Western notions regarding appropriate forms of exercise. These programs did not resonate with tribal members, were not widely utilized, and ultimately were closed in 2009 in order to save on maintenance costs.

The positive changes at the pueblo were jeopardized in 1982 when the state of Texas threatened to terminate the Texas Indian Commission, and consequently the unique recognition status of Ysleta del Sur Pueblo. Facing termination, the Pueblo opted to pursue the full benefits of federal recognition, one of the few ways to maintain the tax breaks enjoyed by tribes.[44] Attaining full federal recognition status was not a simple process, and the Pueblo was again required to prove itself to other Pueblos and to Congress. In addition to compiling the diverse material necessary for a successful effort to receive federal recognition with full benefits, the Ysletans worked to secure support from Isleta Pueblo, a difficult task considering that some Isletans still questioned whether the Texas group enacted important Pueblo practices, a marker of identity. As late as the 1990s some Isletans from New Mexico, including Verna Williamson, tribal governor, claimed, "Over 300 years things have slowly eroded [with the Ysletans] as far as keeping in touch with the language, the traditions, the ceremonies, all of those things" (Burns, 1992). To overcome these suspicions the Ysletans again met with the All Indian Pueblo Council and eventually received their support as the Council acknowledged the group in letters submitted to Congress in 1985.

Negotiations did not proceed smoothly in Texas or in Congress, a fact that highlights the pressures states put on tribes when gaming is involved. By the time the bill was being drafted in the House of Representatives, gaming rights were being argued in courts nationwide (Cramer, 2005, p. 81) and the state of Texas began lobbying against

[44] Other methods include forming a corporation, as was done by Tortugas in southern New Mexico (Ysleta del Sur Pueblo, 2009d, pp. 45-50).

federal recognition for Ysleta because legislators believed federal recognition would automatically mean legalized gambling, a practice Texas legislators vehemently opposed. Ironically, the gaming question was a difficult one for Ysleta as well; while the economic benefits from gaming were desired, the majority of the members did not approve of it. However, the tribe was concerned that the banning of gaming might set a legal precedent that other states could use against unrecognized tribes that were seeking recognition and did favor gaming. Nevertheless, because the Pueblo wanted federal recognition and the legal benefits it provided, the tribal council passed a resolution that banned gaming completely. Texas then dropped its counter-lobbying effort and the "Tigua Restoration Act" passed with a stipulation that "all gaming activities which are prohibited by the Laws of the State of Texas are hereby prohibited on the reservation and on the lands of the tribe" (P.L. 100-89, 1987). Ysleta del Sur was officially federally recognized and was now eligible for an additional $7.1 million per year in federal funds (U.S. General Accounting Office, 1987).

Notwithstanding the Pueblo's original stance, the Tribal Council reversed its position on gaming and decided to open a casino in 1993.[45] Speaking Rock Casino was immediately one of the most successful enterprises on the U.S.-Mexico border, and gross profits ranged between $50 and $70 million each year (Ibarreche, 1999). The Ysletans began purchasing land and diversifying tribal businesses to fill voids in local

[45] Various tribal leaders that I spoke with gave conflicting accounts as to why the Tribal Council reversed its position on gaming. Some individuals explained that the lure of rapid income from gaming was too lucrative to pass on and as such the decision changed. Other individuals explained that the Tribal Leadership was always planning to open a casino and originally opposed gaming in order to ensure Federal Indian Recognition status.

economic structures and tribal services. A $40 million renewal of the Barrio de los Tiguas housing development, complete with stronger gates to exclude the public, and "Ysleta del Sur Pueblo" sign markers were their first actions. The gates and the signs projected an overt tribal identity in the region and ensured that visitors to the casino were aware that they were visiting a recognized tribe. On the grounds of the housing development, the Pueblo also built a health clinic with a full-time staff, a daycare center, and an elder care center. The tribe diversified revenue streams and employment opportunities with the opening of 25 Big Bear gas stations, a tribal police department, and the Big Bear Oil Distribution Company. In combination, these economic transformations provided nearly full employment for tribal members and much-needed income.

Not all changes resulting from gaming income proved to be positive for the tribe; some had the unforeseen consequence of restricting opportunities for tribal members. Although tribal members were allowed to work at the casino, tribal leadership discouraged members from frequenting the casino in their off hours. The tribal leadership attempted to provide other entertainment opportunities, including community-wide events, but given the lack of other options in El Paso, tribal members frequented the casino and other drinking establishments regularly. Spurred on by the increase in individual income and the lack of other options, many tribal members succumbed to alcohol abuse and drug abuse, both growing issues in El Paso (Campbell, 2009). Recognizing the trend, the tribal council began sanctioning tribal members who were caught abusing drugs or alcohol by removing them from leadership positions, if

they held them, and ordering them to rehabilitation services.

In addition to concerns over income and substance abuse, tribal development programs also restricted individual actions in unforeseen ways. With the surplus income from the casino, in 2005 the Pueblo purchased more than 36 acres of land six miles to the east of the reservation in Socorro, Texas. Once it was designated as trust land, the tribe began construction of what they called the "New Reservation," or District 2. The tribe used approximately 1/3 of this land to build a new educational center and library; a wellness center with a gymnasium, weight room, and dance rooms; and an indoor, Olympic-sized pool as well as supporting facilities, including a cafeteria. Tribal Council members explained that while there was initial excitement about the facilities, utilization dropped dramatically after the center was opened, and the tribe began to rent out the facility in order to recover some of the $1.1 million required to maintain the pool each year. As is explained in subsequent chapters, because the health facilities did not resonate with tribal members, the wellness facilities were closed and repurposed from 2009 to 2012.

The surplus of funds combined with the need for housing also led to the construction of large multigenerational homes on the new reservation from 2005 to 2007, and per-capita payments, both of which ultimately led to dependencies on tribal services. The large two-story homes, designed to house grandparents, parents, and children, had as many as five bedrooms and large social spaces. The homes were comfortable and well-received, at least initially, but once casino funds were no longer available to maintain them, the residents were burdened with the high cost of repairs.

Furthermore, with the loss of income generated from the casino, residents began having to pay their own utility bills, and the cost associated with heating these homes in winter and cooling them in summer was more than most tribal residents could afford.

In addition to housing, the Pueblo began a per-capita distribution to enrolled members. Per-capita distributions are sometimes, but not always, funded by income generated from gaming enterprises (Cornell, 2007). Although the per capita distributions provided an opportunity for tribal members to fund personal development, such as tuition at a local college, or to pay off outstanding credit card debt, they may ultimately have had a negative impact on the tribal population. An individual who was addressing economic issues at the Pueblo stated that, by offering per-capita distribution and other similar services, including regular free meals, the tribal leadership created a dependency status between its membership and the casino. Members became accustomed to receiving the services and did not seek out their own opportunities, a critical concern of tribal leadership in the decade after the casino closed.

Following a January 2002 federal court ruling, the state of Texas ordered the casino closed after 9 years of operation, stating that the pueblo had "compacted-away" their gaming rights by signing the Restoration Act. Faced with a sudden lack of income from the casino, and large expenses, the Pueblo immediately began cutting services for tribal members. The free buffet lunch offered daily at the elders' center, catered by the casino, was discontinued when the casino closed. Utility payments were also reduced. In 2007, for example, the Pueblo paid nearly $113,000 in utility bills on behalf of its members, an amount that was reduced to $92,000 by 2009 (Ysleta del Sur Pueblo,

2009a, p. 58). Hourly shuttle services connecting the two reservations, were also cut, forcing individuals to drive from one reservation to the other when they needed to access services. Of greatest concern for health and wellness, the Pueblo began reducing the health services available to the tribal membership and was unable to keep a full-time medical doctor on staff, a problem that continues to this day.

Many of the programs that were developed during the boom and bust era ultimately failed, resulting in a loss of health and wellness services to tribal members. This severely impacted the opportunities for diabetes prevention, an issue that remains unresolved today.

Epoch V. The Post Gaming Era & the Economic Structures of Today (2003-present)

Ysleta del Sur Pueblo currently suffers disproportionately from a variety of social issues, many of which make positive community health a challenge. An internal report provided by the Pueblo explains that the community continues to suffer disproportionately from high rates of unemployment, poverty, poor educational attainment, and housing shortages when compared with other groups in the U.S., Texas, and El Paso County (Ysleta del Sur Pueblo, 2009c). Recognizing these challenges, and with the knowledge of problems encountered during the previous eras, the tribe is actively working to revitalize tribal practices and enhance inter-tribal relations, offer new economic development opportunities, build appropriate housing, and develop locally accepted health programs.

In 2007, the Pueblo embarked on a variety of revitalization programs. This revitalization movement, described by Anthony C. Wallace as “deliberate, organized,

conscious effort by members of a society to construct a more satisfying culture" (Wallace & Steen, 1970, p. 265), was manifest in Ysleta del Sur Pueblo in construction of a kiva and greater participation of tribal membership in religious dances. A kiva is where religious practices are enacted, and they have deeply symbolic meanings for Pueblo peoples. In 2008 the Tribal Council announced construction of the "new cultural project to strengthen Tigua traditional ceremonial practices" (Ysleta del Sur Pueblo, 2008a) (Figure 20).

Figure 19: Tribal Kiva during Construction and prior to Blessing

(Ysleta del Sur Pueblo, 2008b).

Construction of the kiva, the tribal leadership hoped, would spur participation in the regular religious dances, which it did. The kiva, the grounds on which it is located, and the practices that take place there are discussed in greater detail in a later chapter.

In part because of the dramatic increase in participation in religious activities leading up to construction of the kiva, in January 2009 the Pueblo began to petition the All Indian Pueblo Council to recognize and include Ysleta del Sur Pueblo in the Council of Pueblos. On October 1, 2009, in a meeting held in Santa Fe, the All Indian Pueblo

Council bylaws were amended and Ysleta del Sur Pueblo was officially welcomed as a member. To celebrate the event, tribal leadership held a celebration on the traditional dance grounds on November 16 of that year, and later welcomed tribal elders to visit Santo Domingo, New Mexico, on January 25, 2010, in a private ceremony. Inauguration into the All Indian Pueblo Council publically restored Ysleta del Sur Pueblo's relationship with the New Mexican Pueblos, particularly Isleta. Inauguration into the Council provides a variety of opportunities for the tribe, including access to discussions regarding the development of national tribal policies that impact the Pueblo, as well as the chance to forge new alliances between tribal members and tribal departments.

In addition to restoring external relationships with other Pueblos, Ysleta del Sur Pueblo actively sought external funding sources to replace income lost from gaming. The Pueblo enhanced its Economic Development Office and began to seek out a variety of federal funds to enhance or build its own tribal programs. From 2007 to 2009, for example, grant funding from federal sources increased from nearly $9,421,000 to $12,889,000, a 36.8% increase. Similarly, funding from state sources increased from $457,000 to nearly $988,000, a 116.1% increase (Ysleta del Sur Pueblo, 2009b, p. 11). The grants funded a variety of programs, including developing internal tribal administration or external partnerships, enhancing transportation and planning, improving environmental protection, enhancing the library, funding the diabetes programs, and improving tribal roads (Ysleta del Sur Pueblo, 2009b, p. 11).

The ability to obtain grant funds expanded opportunities for housing, and the tribe received numerous grants to develop new housing. Rather than simply viewing

housing as a basic need at the Pueblo, as was done during the 1970s, or as a symbol of gaming prosperity, as was done in the gaming housing boom, in 2008 the Pueblo housing office adopted a wellness approach to neighborhood design in which individuals had opportunities to live healthfully and to exercise. With this view, the housing office built sixty new duplex Low-Income Housing Tax Credit (LIHTC) units in Socorro, Texas, consisting of 33 two-bedroom units, 24 three-bedroom units, and 3 four-bedroom units (Young, Braley, & Vogt, 2008, pp. II-1), a police substation, and a park. Unlike the housing units built during the casino area, these units are much smaller, making them easier to maintain, and more energy-efficient because they share infrastructural resources. Furthermore, rather than providing multigenerational units, the tribe examined the needs of the current residents and built housing to fit younger and smaller families that generally could not afford or did not need large houses. Because of the great need, the units filled up immediately, and 226 families are currently waiting to move into the units as they become available. The police substation provides much-needed security, particularly given the increase in burglaries in the area, a sign of the current recession, and the park provides a safe location for families and children to exercise, an activity that the Pueblo had not considered in previous eras.

To supplement the economic development and housing improvements at the reservation, the Tribal leadership also began to enhance the Indian Health Service facility and its programs. Medical facilities were remodeled to provide a suite of services, as well as a variety of public health programs such as the annual Red Ribbon drug awareness week in which the tribal community is invited to participate in a

weeklong series of events aimed at building awareness about drug use, a growing problem on the border as well as in the Pueblo.

In the rare cases when the Pueblo is unable to develop or manage its own programs, it is actively seeking new partnerships and programs with organizations and individuals outside the reservation. Some of the partnerships have proved to be exceptionally costly for the tribe, as was the case when the tribe hired Jack Abramoff to lobby Congress to reopen the casino (Skopek, Engstrom, & Hansen, 2005). Other partnerships, however, have been exceptionally beneficial. For example, the tribe has partnered with the Harvard Project on American Indian Economic Development to train tribal departments in long-term planning and in ways to collect and analyze supporting data. Largely because of this partnership, the Pueblo has improved its internal records system, enhanced its long-term planning, and is exploring ways to educate its workforce.

Conclusion

In the first epoch, dislocation and resettlement (1680-1847) forever changed the future of Ysleta del Sur Pueblo. Dislocation forced the community to engage with the Spanish legal system in order to secure agricultural land and water, essential for food production in the desert. The dislocation also brought about changes in physical activity, as tribal members had to learn about a new environment and geography. By the second epoch, land loss & changing food practices, the Pueblo had to adjust to the effects of a war between the U.S. and Mexico, and as a result lost a significant amount of land. This loss, combined with the annexation of land and introduction of new foods,

forever changed the dietary practices in the community. Furthermore, immigration and the stigma from outsiders meant that religious practices were no longer practiced in public, reducing a regular type of physical activity. The epoch of federal recognition (1660-1992) witnessed a change in opportunities for the Pueblo, some with unforeseen consequences. With recognition came the financial benefits of federal housing and social support. However, in this era of economic development tribal members were also consuming processed urban foods, setting the stage for the incidence of diabetes seen at the Pueblo today. Changes in housing were also potentially disastrous for religious institutions, as the central plazas essential for Pueblo dancing were removed from the heart of the community. The fourth epoch, boom and bust (1993-2002), brought about rapid economic development at the Pueblo, and then its loss when the state of Texas ordered closure of the casino. With the influx of income, the tribal community consumed readily available yet nutritionally deficient fast food. The influx of gaming funds also spurred development of new exercise facilities, which did not resonate with tribal practices. Under financial strain, these facilities closed. In the current epoch, a post-gaming era, the Pueblo is undergoing revitalization and is exploring a renewal of language, religious practices, and other cultural activities, especially following integration into the All Indian Pueblo Council in 2009. The community is exploring new exercise programs and supports enhanced wellness activities, the impacts of which may be seen in the years to come.

Looking from the past to the future, it is important to consider the differences in experience that the individuals from different generations bring to the Pueblo.

Individuals born in the 1940s and 1950s were raised in an era of land loss and hardship, then experienced rapid change resulting from federal recognition. Now in their sixties and seventies, these individuals have improved the social and living conditions for future generations, fighting to ensure that tribal practices, including religious practices, could be enacted freely and with respect. The subsequent generation, individuals born in the 1970s and 1980s and now in their thirties and forties, experienced an era of prosperity and change brought on by the boom and bust of gaming. In later chapters I explore this generational difference and suggest that diabetes prevention practices need to be adjusted for different generations based on their preferences and needs.

Examination of the economic epochs from the Pueblo Revolt to revitalization in the current era provides a strong foundation to consider the health and wellness of the people of Ysleta del Sur Pueblo. In the following chapter I explore how local practices at the Community Health Center address individual diabetes management and prevention within a Western biomedical model, and in subsequent chapters I explore how community members are beginning to reframe diabetes prevention in communal religious practices that are beyond the scope of the individual models endorsed by the health center.

Chapter 4: The Community Health Center: Structural Challenges and Experimental Programs

Figure 20: The Ysleta de Sur Pueblo Community Health Center. Photo by author.

Ysleta del Sur Pueblo offers a variety of patient care, including diabetes management and prevention, to enrolled members of the Pueblo. The focus of the Diabetes Program is diabetes management, though from the perspective of the health staff, more can and should be done to prevent the disease. Although the incidence of new diabetic patients has been holding steady,[46] there is deep concern among the heath staff and tribal leadership about trends showing that 1 in 3 individuals – including minors-- will become diabetic in the next 37 years (Boyle et al., 2010). Because of this concern, this research examined the challenges faced by the staff of the Community Health Center as they worked to address diabetes on the reservation, and it offers suggestions for new programs and activities that may improve prevention efforts.

[46] In this section I use the medical definitions of prevalence and incidence. *Prevalence* is a measurement of all individuals affected by the disease at a particular time; *incidence* is a measurement of the number of new individuals who contract a disease during a particular period of time.

The first section of this chapter situates the Ysleta del Sur Pueblo Community Health Center by introducing the Indian Health Service, the programs the health center offers, the staff that manages them, and the ways that patients should ideally encounter and experience diabetes prevention services. The second section of this chapter examines specific challenges to diabetes care and prevention. This section opens with an analysis of the prevalence of diabetes among enrolled tribal members and what is necessary for future prevention efforts, followed by a presentation of the structural challenges that impact diabetes care. Challenges include patient data tracking, concerns about privacy, and staffing issues that limit the time available for patient education. The third section presents experimental programs that were implemented during research and which may provide enhanced opportunities for diabetes prevention and related educational efforts. The chapter closes with a discussion of how the center may consider modifying practices to improve diabetes prevention.

Part 1: Community Health Center and Staff

Indian Health Service (IHS)

The United States government has trust obligations to provide health services for the 565 federally recognized American Indian and Alaska Native tribes in the United States (Department of the Interior, 2010). As of the 2010 Census, the U.S. population was 308.7 million, and 2.9 million people, or 0.9%, identified as solely American Indian and Alaska Native. Nearly 1.3 million people selected American Indian and Alaska Native in combination with one or more ethnicities, for a total of 5.2 million people or 1.7% of

the population that identify wholly or partially as Native American. American Indians and Alaska Natives born today have a life expectancy that is 5.2 years lower than the rest of the U.S. population (72.6 years to 77.8 years, respectively). Diseases of the heart, cancer, unintentional injuries, diabetes mellitus, and cerebrovascular disease are the five leading causes of American Indian and Alaska Native deaths, and American Indians and Alaska Natives die at higher rates than other Americans from other prominent diseases, including tuberculosis (500% higher); alcoholism (514% higher); diabetes (177% higher); unintentional injuries (140% higher); homicide (92% higher); and suicide (82% higher) (Indian Health Service, 2012a).

Ysleta del Sur Pueblo Community Health Center

The Ysleta del Sur Pueblo Community Health Center, whose broad mission is to "Improve the Health and Quality of Life" for the Ysletan Community, is located in the heart of District 1. Built with HUD funds in 1972, the building that now houses the CHC has one of the most active histories on the reservation (Figure 21). The building is representative of the economic changes of the Pueblo; it was built following federal recognition and has been remodeled to fit changing needs. In the past 35 years it has been used for tribal administrative offices, including for the tribal council, and a variety of afterschool educational programs. In 1992 it was repurposed as a community health center.

When Dr. Thomas, the current director, joined the Community Health Center in 1992, it was barely operating as a clinic. As Dr. Thomas explained, "It was designed a little bit by bit, but not really well. The medical records shelves were empty and

disorganized. It was just paper, and some people had more than one registration form." In 1993 Indian Health Service funding was approved and Dr. Thomas began to develop the center for the Pueblo. "I came and thought, okay, what do we need first? Since I was a dentist I thought dental, and medical records because if we are going to document charts, we need records. I decided to combine all records – medical and dental – even though at the time I was the only one using them." Slowly the health center began to add staff. An optometrist was added, and soon after the Indian Health Service's Research Patient Management System (RPMS) was added to help coordinate patient records.

In 1997 Congress passed the in Special Diabetes Program for American Indians (SDPI) as part of the Balanced Budget Act. The program funds approximately $150 million per year for 404 Indian Health Service, tribal, and urban Indian programs for nearly all federally recognized tribes in 35 states (Indian Health Service, 2012c), including the Texas tribes. Using evidence-based and community driven programs, the SDPI was developed to address diabetes treatment and prevention across the lifespan of its participants. The SDPI has seen limited success in reducing mean blood sugar levels and cholesterol (Indian Health Service, 2012b), though this is likely due to the time it takes to develop a health program. As Dr. Thomas explained, "When the [diabetes] grant came in, what I did was interview every diabetic because you needed to have a diabetes registry. So I started calling people and [started] the interviews. I think it's still in their chart. If they can't do it, if they want to do it after 5:00, I would stay after 5:00. So the first few years I was doing the diabetes grant [registry]."

Today, the Community Health Center operates under PL 93-638 Self-Determination, allowing it to manage services directly, and it serves both enrolled members and tribal employees.[47] It has a total annual budget of $3,539,423. About 3% of the budget, $116,971, is provided to the Diabetes Program in grant form by the IHS under the Department of Health and Human Services.

Primary Care, Optometry, and Oral Health

As of 2009, the Ysleta del Sur Pueblo Community Health Center served 1,615 enrolled tribal members, 8.7% (*n* = 140) of which have been diagnosed with type 2 diabetes. The Community Health Center comprises several distinct offices that provide a variety of services to enrolled members and tribal staff, and rather than operate independently, the departments ideally work in concert to provide comprehensive patient wellness. This helps ensure that if one department does not recognize that a patient is diabetic, another might. At the time of this research seven programs were housed in the main, kiva-shaped facility: Medical Records and Patient Registration, Contract Health Services, Optometry Services, Dental Services, Prevention Program (including the Alcohol and Substance Abuse Program), Community Health Representatives, and the Diabetes Program.[48] Medical Records and Patient Registration

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[47] Tribal descendants, individuals that do not meet the blood quantum requirement for membership, are not able to access health services.

[48] The Social Services Department oversees the Human Services Department, the Tuy Pathu Day Care Center, and the Juanchido Elders' Program. These programs play important roles in community health but were not directly part of this research. They are used as entry points by the diabetes program for teaching age-appropriate diabetes prevention and education classes. The Tuy Pathu Day Care Center is staffed by six individuals and provides day care services and culturally relevant early-age education.

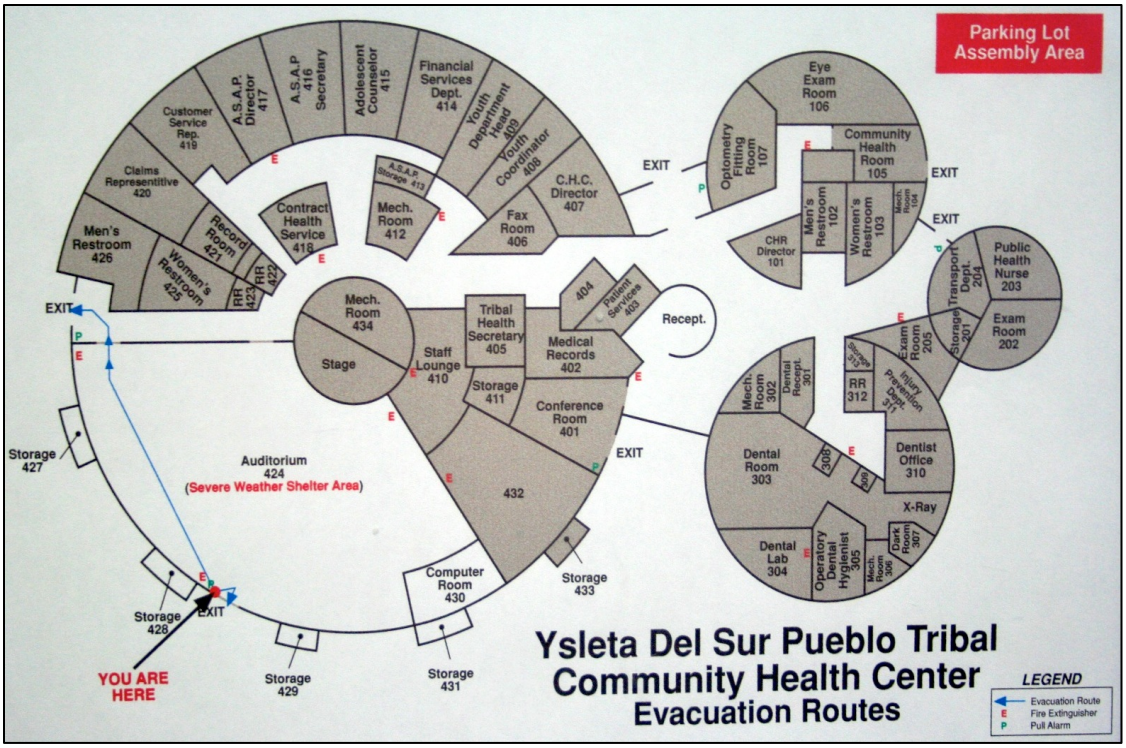

Figure 21: Diagram of the Community Health Center as posted on the wall of the Community Health Center. Photo by author.

coordinates the paper medical records used at the Community Health Center, though updating to an electronic media system has been discussed.

Optometry Services, necessary for individuals with diabetes, is staffed by one optometrist and a Community Health Representative and provides eye exams and associated services to enrolled tribal members. IHS provides vision exams and glasses at no cost, and referrals are given for offsite surgeries and procedures.

The Dental Services Program is also important for diabetes care because it assists with prevention and care of tooth decay, gingivitis, and periodontitis, all of which are

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During the research period, the Juanchido Elders' Program provided limited meals and helped to pay monthly utility bills and home maintenance support. Available to individuals 55 and older, the Elders' Center hosted weekly events such as educational workshops and is the location for some diabetes classes. In addition, they host birthday parties and monthly field trips, including visits to health fairs or trips to other tribal casinos.

serious concerns for individuals with high blood sugar. The services offered by a dentist and dental hygienist assistants include routine exams and cleanings, x-rays, fillings, and dental health education services. More complex procedures, such as oral surgeries, extractions, and dentures, are also referred off-site.

Because the health center is still expanding and is unable to address all health needs in-house, Contract Health Services assists enrolled tribal members with a large variety of health services.[49] This is necessary given the complexity of providing advanced care for individuals who have complications from diabetes. The staff members coordinate medical cost-sharing agreements with local providers and process all payment claims on behalf of patients. Payment of services is dependent on the availability of funds and is monitored and regulated by a committee that rations funds when the end of the fiscal year approaches.[50]

The Alcohol and Substance Abuse Program (ASAP)

Patients with diabetes are eligible to access the Alcohol and Substance Abuse Program (ASAP). One of the more developed programs in the center, the ASAP provides

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[49] Contract Health Services is an IHS program that provides specialized health care services for eligible American Indians (usually defined as enrolled members) when services are not available through the Indian Health Service or directly through tribal services. This process is extremely complicated, as the IHS is the "payer of last resort," meaning that when an American Indian is eligible for non-Indian health services such as Medicaid, he or she must exhaust all other resources *before* the IHS will pay. In addition, IHS funds are limited, and when budgets are near exhaustion the money is distributed based on a five-point priority scale. Ysleta del Sur Pueblo's health center leaders meet monthly to discuss priority payments and either approve or reject care.

[50] I did not attend these meetings because they were outside the scope of research and IRB approval. The staff was clearly concerned about this process and is looking for ways to reduce healthcare costs, including long-term cost-saving measures.

counseling for substance abuse or dependency to both enrolled tribal members and descendants of all ages. Services generally follow four main areas. First, outpatient therapy and counseling services provide level III and level IV outpatient services, including individual therapy, group therapy, family therapy, and psychotherapy sessions. Second, the department offers individual and group educational sessions, such as skills development and guidance, parenting classes, anger management courses, and some courses that integrate tribal culture into health and healing. Third, the department offers community-wide educational programs such as "Smoke Out" fairs, designed to promote smoking cessation. Fourth, the program offers two youth-directed programs, the Youth Prevention and Intervention Program (YPI for short) and the Adventure Program.

The Youth Prevention and Intervention Program and the Adventure Program, both managed by the ASAP staff, are the two main health programs offered by the Pueblo to Tribal youth. Modeled after the Positive Action Program endorsed by the U.S. Department of Education (Positive Action, 2012), is designed to teach tribal youth positive-thinking skills and positive decision-making. Intertwined throughout daily afterschool sessions are lessons in which students learn life skills and strategies to avoid alcohol and drug use. When appropriate, cultural practices are incorporated or blended with Adventure Program sessions to make them more relevant to the youth.

The Juanchido Elders' Program

Juanchido Elders' Center is located immediately behind the Community Health Center. Enrolled tribal members over the age of 55 can play billiards, watch television

and movies, use computers, or cook food in the kitchen. The elders' program also pays a portion of elders' utilities and hosts a variety or workshops, including diabetes education classes, computer training, and craft activities.

The Prevention Program

The Prevention Program, a new program at the Pueblo, recognizes the growing cases of chronic disease throughout the community. Currently focused on diabetes and heart disease, the program is attempting to conduct yearly blood sugar and cholesterol screenings of all tribal members.

The Diabetes Program

The Diabetes Program is funded by the Special Diabetes Program for American Indians, which is having a positive impact on health nationwide in American Indian communities (Manson et al., 2011). Managed at Ysleta del Sur Pueblo by two individuals, a program supervisor, Maria Perez, who manages patient care, and a Community Health Representative (CHR), Clara Mendoza, who manages the Diabetes Testing Lab, and working closely with the other Community Health Representatives, the Diabetes Program provides screening and case management of diabetic patients, patient care tracking and follow-up, and referrals off site for dialysis.

Community Health Representatives

The Community Health Representative (CHR) Program is an important component of the system of care at Ysleta del Sur Pueblo. Community health workers are "community members who work almost exclusively in community settings and who

serve as connectors between health care consumers and providers to promote health among groups that have traditionally lacked access to adequate health care" (Witmer, Seifer, Finocchio, Leslie, & O'Neil, 1995). Community health workers go by a variety of titles, including community health advisors (CHAs), lay health workers, lay health instructors, peer counselors (National Center for Chronic Disease Prevention and Health Promotion, 2010) and primary care assistants. In American Indian communities the health workers are often referred to as Community Health Representatives (Terpstra, Coleman, Simon, & Nebeker, 2011).

CHRs are typically respected and trusted community network members who are responsive to others' needs (Heaney & Israel, 1997) and serve as "culture brokers" (McElroy & Jezewski, 2000, p. 193) between members of the tribal community and the health care system. At Ysleta del Sur Pueblo, all of the CHRs and assistants are enrolled members of the Pueblo. These individuals are effective health communicators because they have an "insider" or emic understanding of their community's cultural strengths and values and as such are able to connect with patients (Satterfield, Burd, Valdez, Hosey, & Shield, 2002). When CHRs meet with patients they use this knowledge to provide culturally appropriate care and to ask culturally appropriate questions.

In addition to acting as bridges between patients and community health centers, CHRs also visit patients in their homes to provide one-on-one education, or they meet with patients while they drive them to medical appointments. As Satterfield explains, "this 'drive time' can create the space for skilled CHRs not only to tell stories relevant to

health promotion and support but to listen to people's own stories" and discuss options for improved health (Satterfield et al., 2002, p. 171).

Health Center Staff

Twenty-five individuals staff the health center, including management, primary care providers, community health workers, and administrative staff. Eleven individuals are especially important for this study because they either provide services for the diabetes program or are indirectly linked to the diabetes program. An organizational chart provided by the Community Health Center shows a particularly flat organizational hierarchy in which the director leads the organization and all health services are at equal levels (Figure 22).

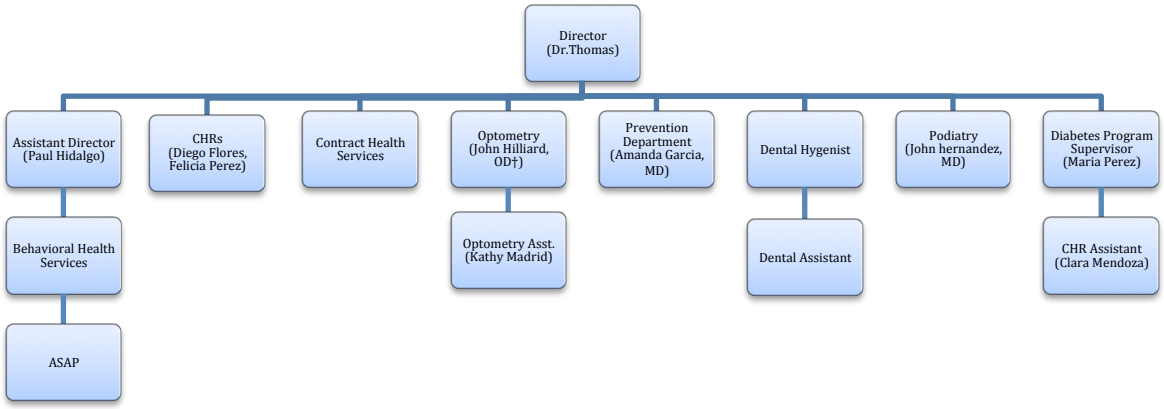

Figure 22: 2009 Organizational Chart

In practice, however, I observed a hierarchy that separated primary care providers and community health representatives. I observed a three-tiered system with managers at the top, followed by primary care providers and community health representatives (Figure 24). Each tier has different responsibilities, activities, and

ideological perspectives. The first tier is composed of the director and the assistant director. The second tier is composed of the primary health care service providers, including the primary care physician, the dentist, the optometrist, and the diabetes program supervisor, though the diabetes supervisor is at a slightly lower position than the others. The third tier is composed of medical residents, the assistants who work in dentistry and optometry, two community health representatives, and the community health representative who works with the diabetes program.

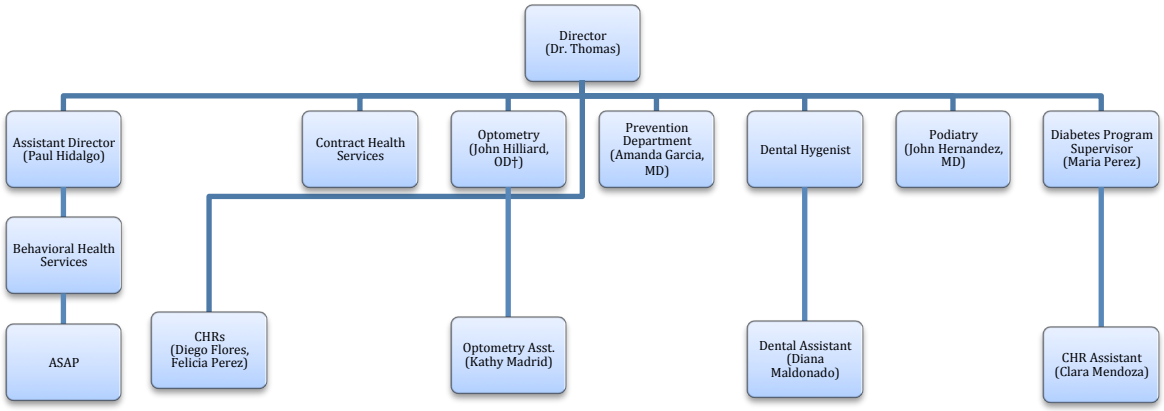

Figure 23: 3-Tiered Organizational Chart

All of the staff met monthly during the period of research to review ongoing issues. The meetings were called and led by the director, with brief reviews of budgets and ongoing concerns presented by each department. In addition to these meetings, community health representatives met once a week to discuss patient needs and informally, on a daily basis. Because of the staff hierarchy, it was difficult for CHRs at the lower end of the chart, usually enrolled tribal members, to have their ideas discussed or acted upon. For example, during my research the health center decided to

cut services offered in the Tribal Elders' program, largely because of budget constraints. Many of the lower-level staff expressed concern to the director, explaining that the center played an important role in the tribal community. However, the elder center was ultimately repurposed for additional behavioral health services, and several of the staff privately expressed their concern regarding the decision-making process. Apparently, although the health center was supposed to have a flat organizational structure in which everyone could provide input, most decisions were made without consideration of the community health representatives.

In the remainder of this section of the chapter I present data collected from participant observation and staff interviews. I spoke with all 25 individuals who worked at the health center and interviewed 11 members of the staff that worked directly with diabetes programs.

Leadership Staff

Two individuals led operations at the Community Health Center. The director oversaw all aspects of the center, with a focus on medical programs. The assistant director provided support for the director and focused on behavioral services.

Dr. Edward Thomas, Director

Dr. Edward Thomas became director of the community health center in 1993 after transferring from the Indian Health Service in Albuquerque. Originally from Lebanon, he trained in dentistry in the U.S. and is now in his forties. When Dr. Thomas came to the Community Health Center only a basic clinic was in operation. He built the dentistry

department, which allowed him to meet many tribal individuals, before expanding the center into a full community health center. Dr. Thomas believes that the health center has to reach out to patients. "Patients [don't just] come to you, you have to go to them. You have to do these things. We're here to serve the community. We can't just say, 'You know what, they don't come? That's OK.' We have to figure out a way to reach [community members] because our mission statement is to improve their health and quality of life." With this goal in mind, Dr. Thomas meets with staff weekly to discuss current programs, manages budgets, addresses individual staff needs, and provides regular updates to the Tribal Council.

Paul Hidalgo, Assistant Director

Mr. Paul Hidalgo, a Latino male in his forties, serves as the assistant director and overseas behavioral health services. Paul has been assistant director for the five years, and he has 20 years of behavioral health work experience with a health center in El Paso. Paul oversees social services programs and staff, including all programs for tribal youth ages 6 to 17. Paul works closely with the health center's staff and tribal grant office to draft and submit grants. Paul brings a holistic approach to health. He explained, "We do try to focus in on a holistic approach to medicine. We do talk about diet. We do talk about water. We do talk about exercise. We do talk about accessing support systems out in the community; identifying support systems within the family. So it's a little different as opposed to the prevention, but I think we need to start in the prevention so we won't end up in the treatment. That's the whole idea."

Primary Care Staff

Two physicians and the supervisor of the Diabetes Program constitute the primary care staff. The physician provides primary care and the podiatrist provides contracted care for the diabetes program. The supervisor of the Diabetes Program, though not a medical doctor, is included in this group because of the impact she has on health programs.

Dr. Amanda Garcia, Primary Care Physician

Dr. *Amanda Garcia* is a primary care physician who worked for the tribe for less than a year in 2008-2009. In her sixties and originally from Spain, she was very concerned about the rates of obesity among enrolled tribal members and descendants. Amanda believed that it was important for obese individuals to meet with her at the center so she could provide patient education and suggestions for weight loss. Amanda worked for the health center for approximately 4 months and was released by the tribe for reasons that were not discussed publically. A replacement was not hired until 2012.

Dr. John Hernandez, Podiatrist

John, a podiatrist who provides services for the diabetes program twice a week, prefers not to be identified by name. Contracted through the grant provided by the Special Diabetes Program for American Indians, John provides foot exams, foot care, and related education. "I provide a variety of care and regularly see tribal elders." Though John is only available twice a week, his services are often underutilized. "I would prefer if more individuals came to see me."

Maria Perez, Diabetes Program Supervisor

Mrs. Maria Perez is a Latina in her late thirties. Maria has been working for the tribe for the nine years and has been the supervisor of the Diabetes Program for four years. As supervisor, Maria has a wide range of responsibilities. "I manage the diabetes registry, write the diabetes grant, track patients, teach the Healthy Living Class, and provide patient education whenever people need it." Maria also picks up medication for patients and makes home visits, though as she explains, she "never has enough time to do them . . . and I really like that part of my job, you know. It really makes me happy to help people." Maria also provides first aid at community events such as the annual Feast Day.

Primary Care Assistants

Primary care assistants provide support in the dental and optometry programs. These individuals assist the respective doctors and also act as informal community health representatives.

Mrs. Diana Maldonado, Dentistry Assistant

Mrs. Diana Maldonado is the only dental assistant and "does a little bit of everything." Diana begins her day by calling patients to remind them of dental appointments and sets up stations and equipment. Between assisting with patients she manages paperwork and updates files. Diana also provides dental education and refers individuals to the diabetes program when she sees something that is of concern, such as excessive bleeding or gum disease, both signs of uncontrolled diabetes. An enrolled member of

the tribe, and in her late forties, Diana is also the mother of three teenage boys and thinks about how to improve the health and wellness of the tribe. "Our kids here love to eat hot Cheetos and all this unhealthy stuff instead of like fruits and other healthy snacks. Maybe that's something we can change . . . maybe by starting with fruits twice a week." Diana also enjoys visiting the tribal garden during her breaks, explaining, "It was nice to get involved in your research. It's nice to see how the fruits and vegetables grew. We'd tell Diego, 'look, see how much they grew since the last time . . . and oh look, they're perking up' when they were coming out. It was nice, it was neat to see."

Kathy Madrid, Optometry Assistant

Mrs. Kathy Soto is an enrolled member of the tribe and works as an assistant for the optometry program and the Pueblo's contract optometrist. Kathy calls patients to remind them of appointments and preps the exam room. Between appointments she manages orders for glasses, sent out to an Indian Health Service contractor, and helps patients try on and fit new glasses. Kathy also provides vision education and refers individuals to the diabetes program when she sees diabetes-related health issues, such as retinopathy or open angle glaucoma. Kathy, now in her fifties, often sees individuals who do not manage their diabetes and then have eye problems. "It is really sad but people need to take care of themselves. I say 'go see Maria.'" Kathy is also very critical of the way that research is conducted in communities and was quick to provide suggestions regarding my research. "You need to go and talk with [name redacted]! She has good ideas!" Kathy also provides first aid at community events.

Community Heath Representatives

As discussed earlier, Community Health Representatives provide patient education and help connect patients with services. The three CHRs in the health center each work in a slightly different capacity.

Clara Mendoza, Diabetes Lab Assistant, Community Health Representative

Mrs. Clara Mendoza is an enrolled member in her forties. She has worked for the health center for five years and now manages the diabetes lab where she screens patients for diabetes and provides patient education, including the proper use of glucometers. Clara is a very fast worker and only seems to sit when meeting with patients or taking a break. Clara has very strong ideas about food practices on the reservation and does not hesitate to express them. "Some people are all wrong when it comes to food, especially when they cook with lard. And people need smaller portions! Eat four enchiladas instead of eight, and add a salad, too." Clara also provides first aid at community events.

Felicia Perez, Community Health Representative

Mrs. Felicia Perez is an enrolled member of the Pueblo in her late sixties. Felicia has "worked for the tribe in one capacity or another for 30 years" and plans to retire in 2012 or 2013. Felicia works closely with seniors on patient education outside the health center and prefers to call herself a "Community Hell Raiser" because of the way she challenges individual practices. She says she works well with patients, exclaiming, "I don't mean to be nosy with the patients, but I ask them why they stopped taking their

medications. I tell them here is my card, I even give my number and say call me whenever you want to talk. I tell them 'I don't judge, I just want you to feel better.' . . . I'm an elder, but it's about being stubborn! That's what it is." Felicia also provides first aid at community events.

Diego Flores, Community Health Representative

Mr. Diego Flores is an enrolled member in his fifties. Prior to becoming a community health representative, Mr. Torres worked for the tribe in many capacities, including as tribal governor. Diego is methodical in his work, and as a diabetic himself, he believes that he should be a strong and positive example. "The day I went on insulin, the world changed. . . . Getting diabetes was tough for me, especially since I'm a CHR." Diego enjoys teaching others how to be organized and disciplined in all aspects of life, but particularly with their diabetes. "I keep logs of everything in a binder. . . date, time, amount. I tell people that they can do this and they say 'But you are good with computers.' And I tell them it's because I work at a desk. If you can balance a checkbook, you can keep a diabetes log." In addition to the services in the community health center, Diego also provides first aid at community events.

Social Workers

Three social workers work in the behavioral health services wing of the community health center. These individuals, both native and non-native, help community members access public services while meeting their health goals. I spoke with all of the social workers and recorded one interview.

Ms. Maria Ochoa

Ms. Maria Ochoa is a 30-year-old Latina employee who has been working for the tribe for nine years. Maria, one of several social workers, offers direct advice in a stern manner. She believes that in order for a person to function properly their body must function properly. "A lot of times even if there's nothing physically wrong with them, they're diabetic but they don't feel that there's anything wrong. They're not going to take that much into consideration, but because a lot of the way I give the information is educating them on how their body works with food and sleep and brain chemistry."

Patient Flows To and Through the Diabetes Program

In order to understand the challenges faced by the diabetes program, it is necessary to first understand the health center's programs and how patients are moved through the health center and utilize the diabetes program. Patients visit the diabetes program for one or more of three reasons: patients need to update their tribal ID card yearly and thus need to complete a physical and diabetes screening; patients feel ill and either walk in or make an appointment; or patients are visiting for a quarterly exam, if they are diabetic. In all cases, patients are expected to flow in and through the center in a smooth process.

Maria explained the process while discussing a current example: "A perfect example is we had this patient, MR553. She has a strong family history of diabetes in the family; her mom, sister, brothers are diabetic. So she came into to update her ID and her blood sugar was a little elevated. She came in and Clara did her lab. Her blood sugar was elevated so Clara referred her to her physician. . . . She did and came back

with a diagnosis of diabetes. This was her blood sugar — 173. So she came back with her prescription. She said she also needed a meter, glucometer and strips to start checking her blood sugar at home. So from here I enter in our RPMS (Resource and Patient Management System), the diabetes registry and begin patient education."

The Tribal ID update was a initiated by the Tribal Council in 2005 after realizing that the Special Diabetes Program was not being utilized to its full potential. The policy requires enrolled tribal members to get a physical and diabetes screening in order to renew their ID. This was a successful policy move, and in the first year the diabetes program was able to diagnose many individuals who did not know they had diabetes.

Updates happen on a schedule, as Maria explained. "On Monday, Wednesday, and Friday we have updates so it's very unpredictable. We may not have one in the morning or we might have four in the morning. Nine, ten for the whole day — you never know. It can go back and forth." With this schedule and process, patients should enter the center, receive screenings and referrals, if necessary, and then return for additional care and patient education. As I discuss in part 2, this ideal is not always met.

The Ysleta del Sur Pueblo Community Health Center offers a wide variety of patient care services for enrolled members of the Pueblo. With multiple departments and numerous staff, the health center is one of the largest institutions on the reservation. However, the complexity of the center also brings new challenges to how individual duties and center-wide services are managed.

Part 2: Challenges to Diabetes Care and Management

Prevalence of Diabetes at Ysleta del Sur Pueblo

In order to understand the prevalence of diabetes at the Pueblo, Clara Mendoza, the Diabetes Program's Community Health Worker who focuses much of her time in the diabetes lab, and I conducted an analysis of all living diabetes patients in 2010. Because I was not approved by the Institutional Review Board to read patient files, Clara took on the labor-intensive process of pulling all of the paper-based patient files and listing in an Excel spreadsheet relevant but unidentifiable patient data, including the diabetes diagnosis (type 1 or 2), current age, age at diagnosis, date of diagnosis, and current residential code. We chose to collect this information to help us understand diagnostic information such as the age of patients, and whether patients were being diagnosed at a younger age, a serious concern in other tribes (Moore, 2010). Furthermore, we hoped the age and zip code information would help us determine whether one reservation district had more patients than the other. When the analysis was complete, I emailed it to Maria, the Diabetes Program supervisor, and discussed it with her in detail. Maria was both surprised and happy to see the report. Charting the dates of diagnosis was useful because it showed that the tribal policy to require a screening indeed worked as intended and many individuals who did not know they had diabetes were being brought into the program and provided with patient education. The lack of increase in incidence of diabetes was surprising, and Maria was happy to see that the health center was making progress and keeping the number of diabetics at a low and consistent rate.

At the time of the analysis in 2010, 143 enrolled individuals out of 1,615 were diagnosed with diabetes. If descendants are considered, a population that is not required to undergo a physical and diabetes test yearly because they do not receive an ID card, the rate may be higher. On average, between 4 and 8 individuals are diagnosed each year (Figure 25).

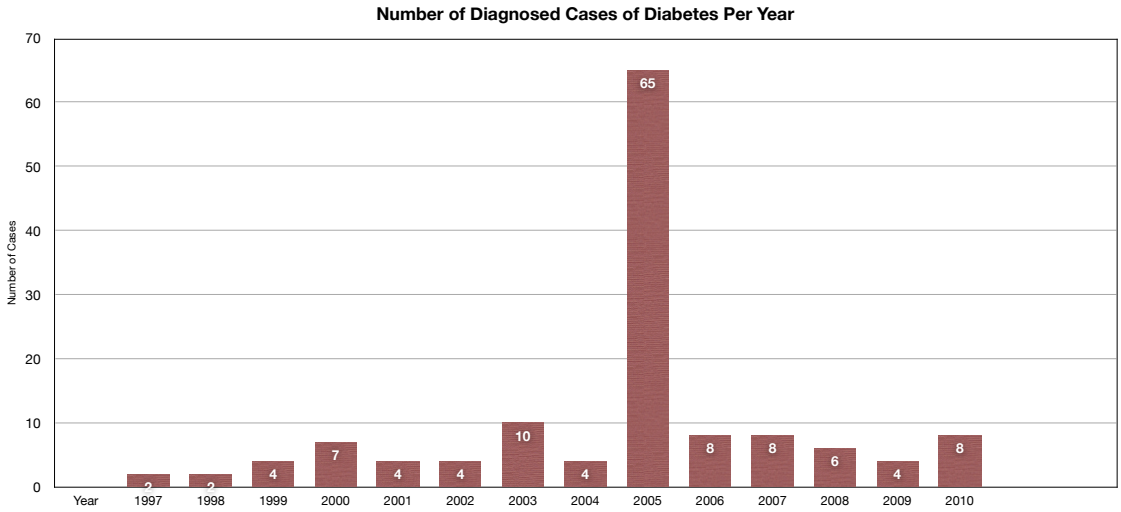

Figure 24: Number of Diagnosed Cases of Type 2 Diabetes per Year

The analysis of individuals with type 2 diabetes also shows that the percentage of enrolled tribal members diagnosed with diabetes is only slightly higher (8.5%) than the national average for the general population (8.3%) (National Center for Chronic Disease Prevention and Health Promotion & Division of Diabetes Translation, 2012). Given recent trends in which the incidence of diabetes is rising and expected to double or triple in the national population (Boyle et al. 2010), it is very likely that the incidence of diabetes at the Pueblo will rise if steps are not taken to counter the disease. As I discuss in the final section of this chapter, and in the detail in the following chapter,

educational programs conducted outside the Community Health Center may reduce incidence of the disease.

There was a concern among the staff that the age of diagnosis was dropping, and that soon minors would start being diagnosed with diabetes, a very serious concern at other Pueblos. Analysis of the age at which individuals are diagnosed with diabetes shows that most individuals are diagnosed between their fifties and seventies (indicated by blue line in Figure 26), an age range that is above national trend (National Center for Chronic Disease Prevention and Health Promotion & Division of Diabetes Translation, 2012).

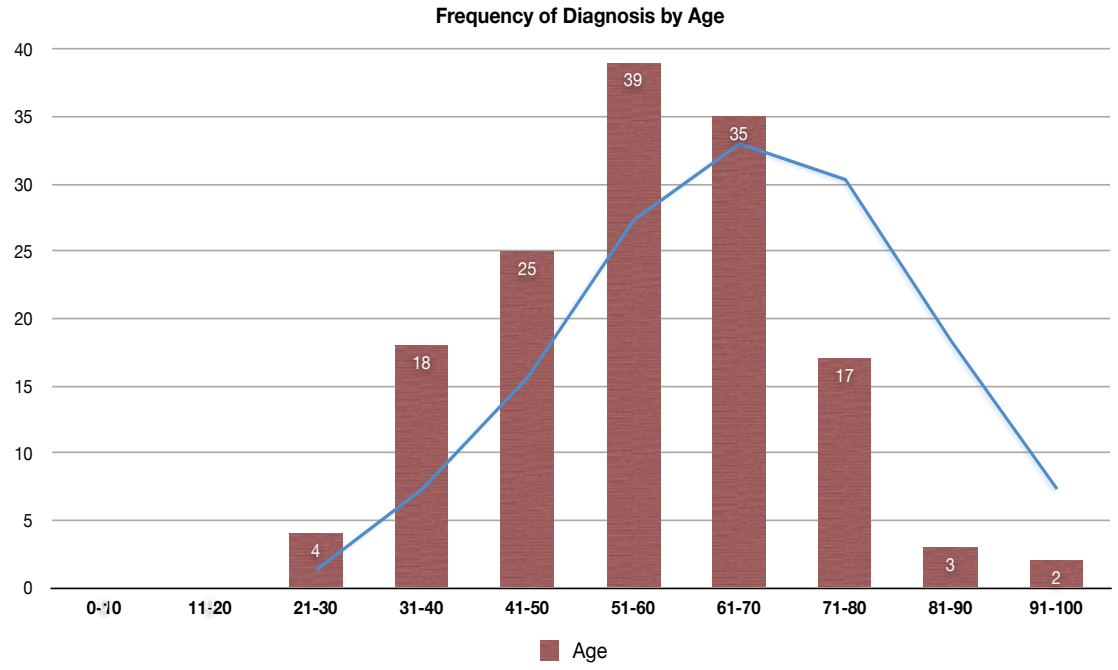

Figure 25: Frequency of Diagnosis by Age. The trend line shifts to the right because there are no minors with diabetes.

Furthermore, an examination of individuals who were diagnosed from 1997 to 2010 shows that the age at which individuals are being diagnosed is increasing slightly, not decreasing (Figure 27), from just below the age of 50 to just above. This means that

individuals are being diagnosed later in life, an indicator that the state of diabetes may be improving. Furthermore, the rate of diagnosis was fairly evenly distributed, except for the event at the start of 2005 when the Tribal Council passed the ID testing requirement.

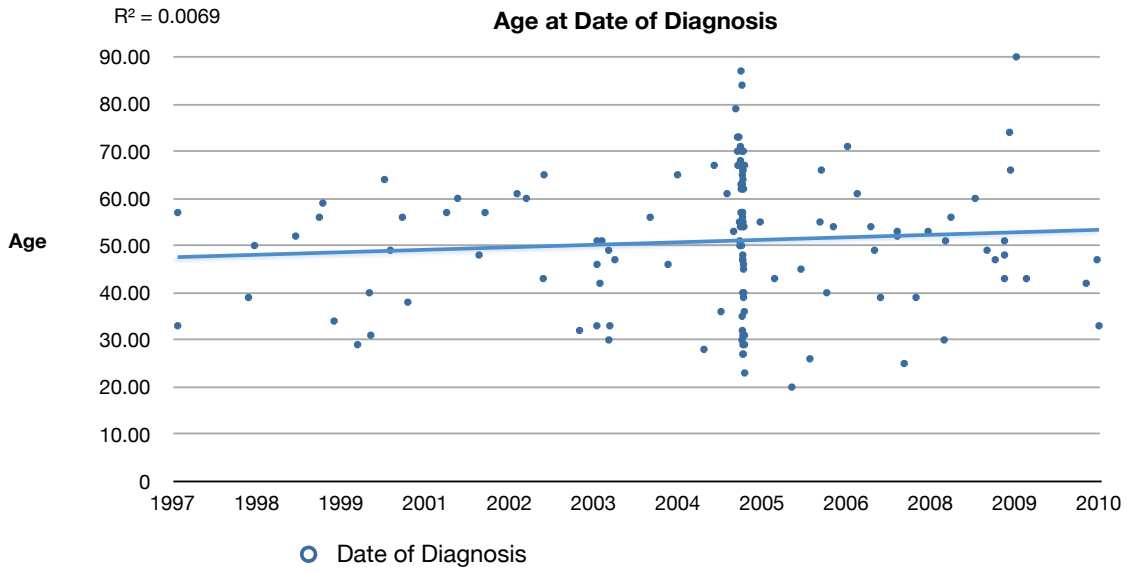

Figure 26: Age at Date of Diagnosis

This analysis of the type 2 diabetic patients at Ysleta del Sur Pueblo shows that it is likely that the Pueblo is at a balancing point, where the number of individuals diagnosed with diabetes is holding steady and the age at diagnosis is not decreasing (Naqshbandi, Harris, Esler, & Antwi-Nsiah, 2008). New prevention efforts could have a substantial impact and reduce the incidence of diabetes if they are properly developed and resonate with community members.

An analysis of the residential location of individuals who are diagnosed with type 2 diabetes (*n*=140) shows that 41% (*n*=57) reside in District 1, the next largest percentage resides off-reservation, and the remainder in District 2 (Figure 28).

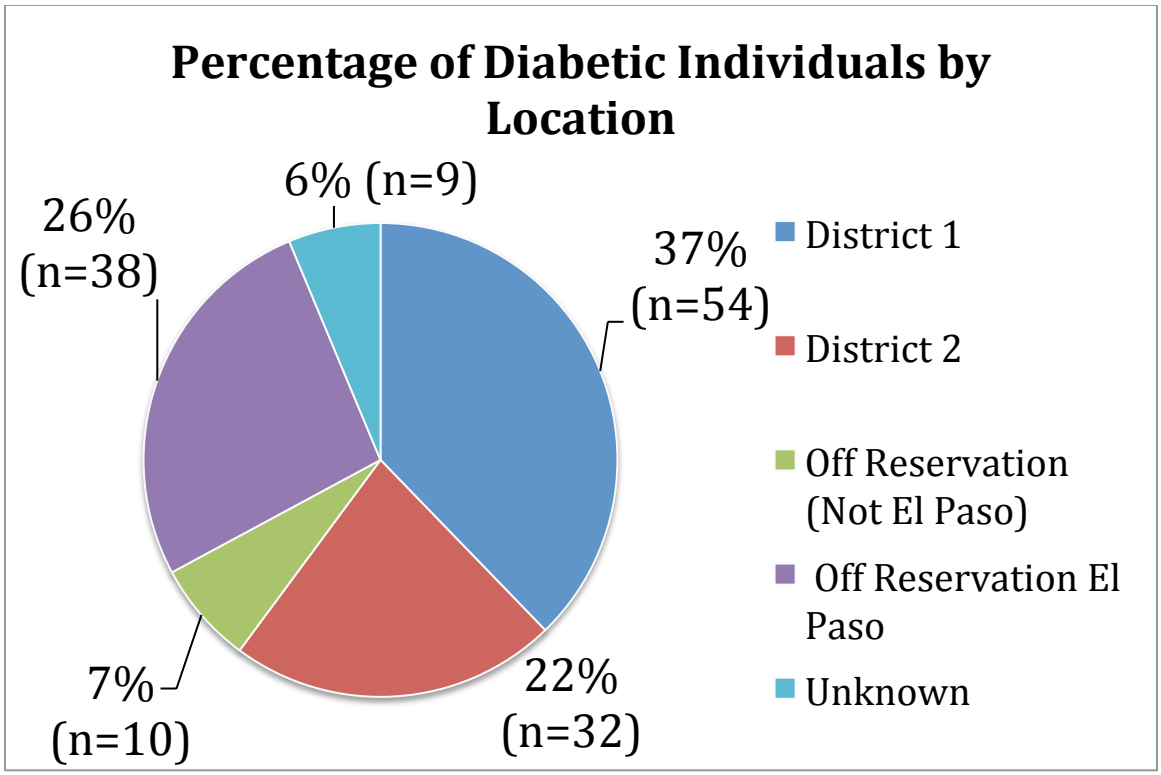

Figure 27: Residential Location of Individuals Diagnosed with Type 2 Diabetes

The higher percentage in District 1 may reflect a larger number of older adults in the district and the fact that, because it was built well before District 2, it likely has an older population. Many older adults also live in the off-reservation Old Barrio de los Tiguas, as well as surrounding areas, and they likely account for the high percentage of off reservation adults with type 2 diabetes. When diabetic individuals are charted by zip code (Figure 29), it becomes evident that the Diabetes Program is serving individuals who live throughout El Paso's east side and Socorro. These differences by location should be considered so that future education efforts can target populations in their respective environments.

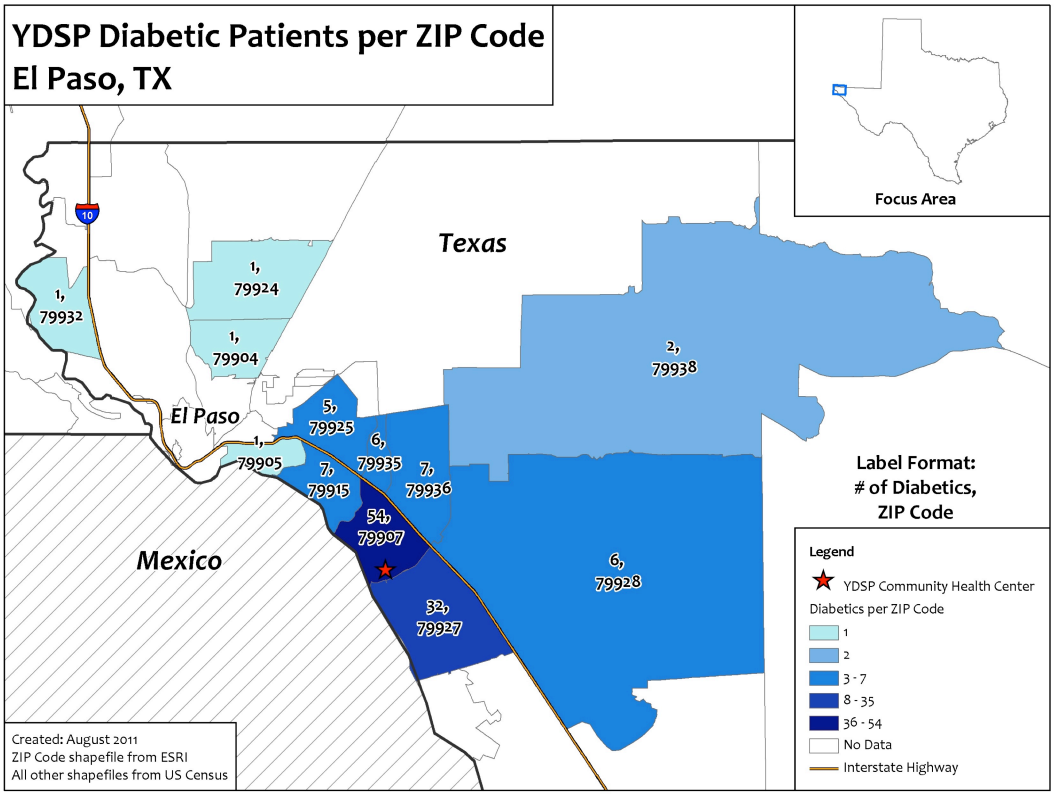

Figure 28: Map of Type 2 Diabetics, by Zip Code

(Note: This map does not include 7-off reservation individuals, 9 individuals with an unknown location "20," and 4 individuals from a neighboring zip code.)

There is a limitation to the analysis of individuals with diabetes. First, the number of diabetic individuals is in flux because new patients are diagnosed and elders pass away. In the time between data collection and analysis, the number of diabetic individuals likely changed. Second, because only enrolled members are required to check-in yearly, there are probably undiagnosed descendants in each of the districts. Future research should include descendants in the analysis.

Diabetes Program Structural Challenges

While the data from the diabetes program shows that the incidence of diabetes cases is relatively constant, many structural challenges are limiting the program's ability

to improve the wellness of diabetic patients. These include issues regarding compliance, health center privacy, location of the programs, staffing issues, bureaucratic paperwork-related stress, cultural incongruences in health care, and mixed health messages.

Non-Compliance

Non-compliance is a serious concern in the diabetes program, and I often heard staff talking about missed appointments and patients who would not follow instructions. In medical communities the term "compliance" is used to describe the degree to which a patient is correctly following medical advice, including making scheduled visits or suggested schedules for checkups, medication or drug compliance, or following recommendations regarding diet or nutrition (Cramer, Benedict, Muszbek, Keskinaslan, & Khan, 2007). Compliance is impacted by the relationship between, and the decisions made by, the doctor and patient, though external circumstances also play a role. For example, if a doctor gives a diabetic patient a prescription for a drug, the patient is considered compliant if they obtain the drug and take it based on the prescribed dose. The patient can be considered non-compliant for a variety of reasons. For example, a patient may not take their medication regularly, whether because they choose not to, they forget to take it, or in the case of economic factors, they are unable to pay for the drug.

Examination of compliance and non-compliance can be a useful way to show cultural differences, rather than simply arguing that patients are or are not following doctor's orders (Ferrira & Lang, 2006, p. 500). Staff perceived and identified five

variations of non-compliance: no-shows, fear and denial of diabetes diagnosis, illiteracy, gender conflict in care, and fear of leaving the reservation.

Non-Compliance: No-Shows

The health workers, assistants, and the Diabetes Program supervisor shared examples of non-compliance. When patients missed appointments and did not come in for services, Maria openly expressed her frustration. “We encourage them to make their appointments for dental and optometry, but there's a lot of non-compliance, a lot of no-shows, a lot of broken appointments, and that's what I don't understand. I never understood. When all these services are offered to them, why don't they just take advantage of it, you know? It's to their benefit. That's why I don't understand why they don't. If I had services like that, I would definitely take advantage, you know, definitely. I mean the services are there free of charge — dental, optometry, ASAP [Alcohol and Substance Abuse Program], diabetes programs, you know?” She continued to explain why she felt they were non-compliant. “People are not compliant because they simply don't know what could happen to them. They really don't take an active part and they don't follow up. They don't exercise. Those are just like short-term complications. With diabetes, they're long-term, you know.”

Clara and Felicia, two community health representatives, explained that approximately 80% of their patients are non-compliant. Clara opened, “There are a handful of patients that are great. I have four that are really good and [I] track twenty-two. I see 4 or 5 every year all the time . . . every three or four months.” Felicia

interrupted, “Reschedule, Reschedule, Reschedule.” When I asked Felicia if she had the same number, around 22 she replied, “Yes, and about 4 are really good.”

Non-Compliance: Fear and Denial

In another example, Maria explained that some patients are non-compliant because they do not want to share their medical records with the Community Health Center when they are referred off-reservation for confirmation of a diabetes diagnosis — as Maria explained, because of *fear* of diabetes. “Maybe they're still in denial or they just don't take care of themselves, plain and simple. They think they're okay and nothing will happen to them. It's sometimes just ignorance. It's hard to say that, but it's just ignorance and lack of knowledge.” Not sharing off-reservation medical records with the health center is a serious hindrance because the health workers use this information to provide detailed diabetes education and follow-up care. Without knowing about specific medications that have been prescribed, for example, the staff is unable to follow up with the patient to see if they are following prescription guidelines.[51]

Maria continued to explain that one patient in particular needed a foot exam because she was diabetic, so she gave the patient the option of waiting for a few minutes to see the podiatrist. “So then she started telling me she went to a foot doctor,

[51] Social workers face a similar issue when they refer patients off-site for medical or psychiatric care. Some members of the Pueblo are struggling with drug addiction, and it is not uncommon for a patient in the substance abuse program to visit doctors off-site that are known to overprescribe pain medication (for example, when I visited one off-reservation doctor I was prescribed 80 Oxycodone, enough to last far longer than my ear infection). As was explained separately by a social worker and tribal member, substance abuse patients sometimes visit these doctors off-site and do not consent to the release of medical records when they receive pain medication that violates the terms and goals of their recovery programs.

I don't know when, because her ankle was swollen. So I told her, 'Do you know what neuropathy is?' She said no. 'Neuropathy is when your diabetes isn't controlled and you lose sensation of your nerves on your feet, your hands, your stomach, you know.'" Maria explained that the pain the patient was feeling was likely a small fracture and linked to neuropathy. "You can't tell that it's broken, you don't feel pain. . . . And she still didn't want to come see the foot doctor." Realizing she was not making progress with the patient, Maria asked the patient if she would sign a release for records from her off-reservation physician so she could provide patient care and education. She refused. "I was so upset. That's when I told her I always advise a patient to go to her physician due to extremely high A1C, and wrote in her file, 'patient advised about complications.'" Maria encouraged the patient to exercise for 30 minutes every day, and said housework is not exercise. "She did tell me she does all her housework, but I told her that's not enough. I advised the patient to schedule foot exam, dental, and eye exams and keep them. The patient still refused to sign medical record release."

In the above example, Maria is frustrated. Although she is fulfilling her duties by educating patients about the complications from diabetes, the individual refuses to sign medical records releases because of fear and denial, even when given detailed information about the consequences of not seeking care.

Non-Compliance: Illiteracy

Maria, a social worker for the tribe, and a non-tribal member, believes that many tribal members are not compliant because asking for assistance is not an accepted practice. Furthermore, many tribal elders are illiterate, and asking for assistance may

place them in uncomfortable situations when dealing with medical forms or prescriptions. “They're not used to asking for help. It's like I'd rather cut off my own finger if I have gangrene than go tell somebody I have gangrene, can you help me? I think a lot of it too is some of the older tribal members -- and I don't mean like older, older -- like the 1940s or 1950s, there wasn't a lot of -- back in those days -- and I'm talking like late 60s or the 70s you know. Before the tribe was recognized there wasn't like a big push for education and these types of things. So a lot of tribal members actually have, they're very illiterate for most purposes, like third grade reading.”

Non-compliance resulting from illiteracy is a concern both locally and nationally (Cramer et al., 2007), and if left unaddressed will continue to be an issue as patients cannot understand diabetes prevention literature provided by the tribe.

Non-Compliance: Gender Conflict

In another example, Maria explained that gender impacts the relationship between the patient and the health practitioner. While discussing an interaction with a male, Maria explained, “He would come to my group so he's a little bit familiar with like my approach you know, but I'd say it took him like a good two months to actually come clean [in discussions]; but he told me that, pretty much. He was sitting there talking to me and it was conflicting with his beliefs [he said] because ‘you don't talk to women about these things.’ Then a lot of times they'll just open up and go from there, but there's still some hesitation a lot of times to do some things that's asked of them. I think just because in general that's not what they're used to, it's not their way of life.”

Diego, the only male Community Health Representative, and an enrolled member, expressed similar concerns. "No single CHR – or person in the community for that matter – has all the answers. We combine our knowledge and come up with the answers." He continued to explain that, because he is male, some individuals in the community may feel more comfortable speaking to him instead of Maria. Afterword, they share notes and do what is best for the patient.

Although staff may be sensitive to these issues and try to see patients of the same gender, there is no automatic and consistent policy in place that provides patients with the option of selecting the CHR that assists them. This may negatively influence some of the older population and may be keeping them from the center or impacting their compliance.

Non-Compliance: Fear of Leaving the Reservation

During my research I noticed that many tribal adults, particularly tribal elders, did not venture very far from the reservation. When I asked Maria, the non-native social worker, she responded that I would "be surprised at how many members of the tribe don't leave this area, they don't leave [Ysleta]. They stick very close to the community. Even when they move outside of the reservation they don't go very far. . . . A lot of it is just safety. It's just like any tribe anywhere, you stick close to your people."

The Community Health Representatives are acutely aware of this and spend a large amount of their time taking patients to and from appointments that are off-reservation and require a 20-minute to 45 minute commute, each way. In these "transports," as they call them, community health representatives make the patients

feel more comfortable and prepare them for their visit or review what was discussed. As Diego explained, “Transports are a time for us to go over the appointments and talk about medication or questions [the patient] may have. Sometimes we even go into the exam room with patients if they ask and want us in there.”

Some tribal members have concerns about the costs associated with transports. Speaking anonymously, a respected individual who coordinates tribal data and budgets stated that “the health center is probably doing too many transports and not enough intervention work. If you look at the annual report it's just a bunch of [transport] numbers. . . . It really doesn't say much and doesn't give priorities for health.” In this comment, the individual is critiquing multiple issues. The reporting she refers to is the health data presented by the CHC director in the annual tribal report (Ysleta del Sur Pueblo, 2009b). This report was sparse, including basic financial reports and very limited information regarding services and the impacts on patients. The impact of patient *transports* is unknown. Further research is necessary to understand both the effect (positive or negative) of elders not wanting to leave the reservation and how the patient transport service impacts the health and wellness of the individuals who use it.

Non-Compliance: Generational Complications

Maria, as an outsider to the community, identified family trauma as a reason for the large rates of non-compliance, particularly in regards to diabetes care. “A lot of the clients I have – I'd say like 95% of them – have some type of trauma, some type of underlying childhood trauma. Where either a parent was a substance abuser or there was some neglect; not in the sense they didn't have a roof over their head or there was

no food, but a lot of the time the child practically raised themselves." Because the trauma was generational, problems were continuing from one generation to the next, and clients learned to avoid the health center. "They just pass it on, the same behavior to the next generation and the next generation. Then here we are with the third generation . . . after I just dealt with the second generation."

Maria explained that the dietary practices of parents were impacting children. She gave one example where a diabetic parent refused to bring his child to the center for a diabetes screening. "Her mom is obese. Let me tell you about her dad. This patient . . . he is diabetic. When he was first diagnosed, he lost all his teeth. He came here because he needed major dental work. This was like in 2003. He's sometimes very noncompliant." Maria choked up as she explained that the daughter was obese, had very high blood sugar, and was likely diabetic. "That little girl. . . . Her weight, she's not thin at all. She is 5'2", no . . . she's 5'1½" tall and she weighs 157 lbs. Her blood sugar was 165."[52]

Generational issues contribute to non-compliance, yet unlike the other types of non-compliance they have implications for long-term community and patient education. Left unaddressed, the issues will likely result in severely negative complications, threaded through families, for decades to come.

Non-compliance is a serious concern that negatively impacts the health and wellness of the patients who are being served by the Community Health Center. The five types of non-compliance identified at the Pueblo – no-shows, fear and denial of

[52] A normal blood sugar level for an individual who is not diabetic is between 70 and 150 mg/dL.

diabetes diagnosis, illiteracy, gender conflict in care, and fear of leaving the reservation – should be addressed in order to improve diabetes services.

Concerns about Privacy

Cultural norms at the Pueblo regarding privacy are extremely important, and activities that take in public spaces are structured by tribal leadership so they do not violate the specific rules separating private from public. The Community Health Center is in a particularly challenging position because although it serves a private matter – individual health – it is located in a public area of the reservation. As Dr. Thomas explained, the health center "is like the hub of the community. Please come to us for everything. 'I need this, where do I find it?' I love the location. It's smack in the middle of the community, you know."

The public design of the health center was not accidental. Located in the heart of District 1, the center was built in the 1970s. Its design is a connected series of concentric rings that symbolically represent either a kiva or a series of drums. The health center was originally designed for tribal administration offices and a large auditorium where all tribal members could meet or hold public gatherings. As Dr. Thomas explained, the center "was here before the courthouse, before the new wellness center. So this was the meeting place for the community. . . . It fits the name *community center* because it *is* a community center. . . . That's where the kids are, that's where the elderly people are."

The design of the health center also makes patients visible from the houses that surround it. As several of the health staff explained, patients can access the center from

the front parking lot, from the inside entrance, or from a rear entrance that is adjacent to the playground. Because others can view the health center from their homes, it is easy to see who is visiting or working at the center. On numerous occasions I found myself sitting across the street from the center, talking with a tribal elder, and from our vantage point near the entrance to the reservation we could see everyone that came in and out of the reservation, as well as the individuals who came and went in the health center. It was not uncommon for this tribal elder to say, "Well I see Maria is there now so I better go get my blood sugar checked."

In addition to the location and design of the building, the internal layout of offices, meeting spaces, and examination rooms also made protecting privacy difficult or in some cases impossible. An individual entering from the rear, for example, was likely to be using the social services, substance abuse, or youth education programs. As Dr. Thomas explained, "We have an alcohol and substance abuse program, and a lot of people say they want to come from the back or from the side. So yes, privacy is a big issue."

Figure 29: Aerial view of the Community Health Center. Photo by Google Street View.

Once inside, an individual who was waiting in the reception area could tell if patients were coming from each of those three services, or in the case of the diabetes wing, they could see from the waiting area into the examination rooms. The director of the health center and facilities is currently completing a redesign of the internal layout of the building.

While patient privacy is a concern because of the accessible design of the Community Health Center, patient confidentiality has long been a concern as well, according to staff, because the community is small and many individuals know each other and are related to the center's employees. One community member who prefers to remain anonymous explained there was "a lot of talk" about patients. She said, "I guess people are afraid to go there also because if they go in there with some kind of

problem it'll be in the tribe within an hour; like everybody will know. There's no confidentiality. You've seen it. Everybody knows everybody's business."

When I asked Dr. Thomas about this issue he explained that when the health center was first in operation, "people wouldn't come in because they didn't want their cousin to know . . . it's a small community." Maria Perez, the Diabetes Program supervisor, expanded on this idea. "Because a lot of people think that. . . . Everything is supposed to be confidential, but a lot of people have the impression that it's not; that if they go, everybody is going to find out what they have or what they're there for. That's what I think a lot of family members think. They have that impression, you know. Since everybody knows each other there, and everybody knows the family you belong to – who's your parents, who's your uncle, who's your cousin – I think that's hard for them. Privacy is a big issue; a *big* issue."

Indeed, several staff members at the health center are related to each other or to patients by blood or by other types of kinship such as clan. This challenges how staff members interact. It put individuals in difficult situations because they may want to discuss patients with each other, but they cannot because the patients may be related to staff members and it could mean a Health Insurance Portability and Accountability (HIPAA) violation. Indeed, when Maria first began working at the community health center she was concerned that she did not know many individuals and was worried that she might meet with a patient and, not realizing that the individual was related to a coworker at the center, later divulge confidential information. As Maria explained, "You might be working with somebody's aunt or the mom and you don't even know; or

somebody's cousin, you know what I mean? **. . .** Sometimes it does make it difficult because if you want to talk about a case and about a patient, you really have to be careful." When asked for clarification she explained, "Like for example, I work with [name redacted], right? We don't work closely together, but we're in the same building. Sometimes I want to discuss [name redacted], her mom, so that makes it kind of hard. That would make it a little bit difficult because I do work with her and her mom is one of our patients, so that makes it a little bit hard. It's nothing bad that I want to discuss about here, it's just things that are of concern [about her diabetes]."

Maria was not the only individual to have concerns about privacy. Paul, the assistant director and a non-tribal member, also expressed concerns about privacy, though he believes there has been some improvement. "You know one of the other things that I think has improved, Sean, and this is not taking away from the tribe. Tribal members are great to be working in certain departments, but this is not one of them. You can have tribal members working in this department in certain positions. In certain positions you need somebody that's unbiased because everybody's related. So things have really changed when they started hiring counselors who are not tribal because people are comfortable coming in and talking about their secrets, you know, their trials and tribulations. Within the small community we need to be very careful about how we're delivering services."

Privacy issues will continue to be a concern at the tribe unless they are addressed with respect to both the structure and the staffing at the community health center. In the two years following my research the Pueblo did redesign and remodel the

interior of the center so patients in the waiting room could not see into the exam rooms (among many changes). This will certainly help with HIPPA issues, though additional research is needed to see if other privacy concerns were addressed and if these changes improve patient perceptions and access to care.

Location of the Programs Impacts Attendance

Maria recognizes the checkerboard reservation presents a challenge to providing healthcare, explaining that there are "a lot of obstacles because the tribe is scattered all over. . . not everybody in the diabetes program lives on the reservation. That's why it's so hard." Community members often mirrored Maria's statement, explaining that they only attend major events that are on "their" reservation [district] because they did not want to spend money on gas, at the time $4.25 per gallon, making a six-mile round-trip drive cost-prohibitive.

The management at the center is aware of the dual reservation challenge and is and exploring ways to address the issue.[53] As Paul explained, "Even though we have two staff stationed in the new reservation, these two programs have to be complemented with each other. This is where the fidelity of the programs has to be so, so important to the staff because whatever is being done over here has to replicate over there and vice versa so the kids are getting the same message and we don't get into that bind of competition and start the segregation of both reservations . . . the new from the old." Future research is necessary to determine whether this issue changes over time.

[53] For example, the Pueblo is considering moving all housing and tribal services to District 2.

Staffing Issues & Stress

Staffing is another structural issue that is impacting the ability of the diabetes program to expand into diabetes prevention. As Paul explained while discussing a new grant that the health center submitted to the state of Texas, staffing must increase in order to improve prevention services. "We requested two more staff be hired so that we could place two more staff in that location, but that's very limited staff. We're still working with a very minimal number of staff, which I would call even skeleton crew. I think in the future we're going to need a little more than we have to be able to provide quality of services that are needed and will be needed. Right now we're actually doing what we can and we're meeting those needs, but I think as time goes on that's really going to grow here, and I think to provide the quality and really have some changes occur, with the grant monies that are being provided, we're certainly going to have to improve the numbers – the staff and client ratio – to be able to really address the needs that need to be addressed."

Although hiring additional staff will likely improve prevention services, the health center also must address staff turnover. During my research, a primary care physician was hired and then left within six months, and a new hire was not made for nearly a year. Similarly, a karate coach who was very much loved by the tribe passed away and the program he led was not continued. While staff turnover is problematic, and the passing of karate coach was very sad and difficult, new staff must be hired to provide program continuity.

Another issue related to staff is patient tracking and the lack of adequate electronic medical records, one of the largest challenges in the diabetes program, if not the entire health center. To date, paper records are still common at most hospitals and private practices in the United States (Jha et al., 2009). Paper-based records are being phased out nationally to improve patient care as well as to reduce costs, a process that is both time consuming and expensive. Shifting to electronic medical records will improve the operational efficiency of health centers by at least an estimated 6% (Evans, Nichol, & Perlin, 2006).

At Ysleta del Sur Pueblo, paperwork is still used to track all patients and there is no single, comprehensive, and shared database for the primary care providers and Community Health Representatives to use when documenting patient interaction. In a two-hour interview dubbed "There has to be a better way!" Maria Perez, the Diabetes Program supervisor, explained that nine forms,[54] two excel spreadsheets (for each of the three CHRs), and two outdated databases are used to track patients.

All of the forms are used to collect information that is required by the Indian Health Service grant to the Special Diabetes Program for American Indians. Unfortunately, completing the forms, often in triplicate, means that the staff members have little time left over to meet with additional patients or to develop new prevention

[54] (1) The Adult PCC – Annual Update Form (in triplicate), (2) the Child PCC – Annual Patient Update Form (triplicate), (3) the IHS Diabetes Care and Outcomes Audit, (4) the DHHS/IHS Authorization for Use or Disclosure for Use or Disclosure of Health Information, (5) the Ysleta del Sur Pueblo Referral Notice (triplicate), (6) the Phone Contacts Form, (7) the Transport Form, (8) a Daily Activity Log, and (9) the Diabetes Audit Form.

programs. Recognition of this frustrates the Community Health Works and results in high levels of stress.

Research has shown that individuals with diabetes regularly become stressed, and stress, if unchecked, may cause additional health issues (Dressler, Oths, & Gravlee, 2005; Walters & Simoni, 2002). However, I have been unable to find any research that shows how stress impacts community health workers. In the examples given below I draw from observations in which community health representatives were impacted by stress resulting from their work.

On a warm day in April I walked into the Community Health Center to meet Maria to discuss the renewal for the Diabetes Program's grant. The moment I said hello I could tell something was wrong. Maria was resting her head in her hands and leaning on her tabletop. “Ay, Sean," Maria said as she lifted her head, "Let’s get to work." I could tell Maria was upset, and after asking if she was okay we continued. As we reviewed the grant I explained several of the specific terms that were used – risk, incidence – and Maria carefully linked each of these categories on the grant to a specific practice in her program. Suddenly, tears welled up in Maria's eyes and she began to cry. “I just can't take this Sean, why are they not working on the grant? I should be making home visits. I should be out there talking to people with diabetes. It just gets so stressful! I mean I'm doing everything I can but people still don't come in. Missed appointments, no shows so many forms.” I awkwardly reached to the shelf for a Kleenex told Maria she was doing a good job – her best – and that we would figure out the grant together. Fortunately, several months later the grant was renewed.

Maria was not the only member of the staff I observed becoming stressed from work. Diego, the male community health worker, was regularly seen walking briskly from one appointment to another. I rarely saw him take breaks to eat, let alone test his blood sugar level, a serious concern because he was diabetic. On one occasion in particular he walked into the Elders' Center to take a break; looking weak, he made a sandwich with the only food available – white bread and cheese. When I asked if he was okay he replied, "Yes sir, Mr. Bruna," as he often would, though it was obvious he was overworked from attempting to pack his day with patient visits and transports. Two years later, in 2012, Diego had a heart attack, and while reclining on his sofa, he told me, "I guess I need to take it easy and let others do the work."

Because the staff is stretched thin, individuals are pressed to complete tasks for which they may be trained, such as completion of complex federal grants, or they may be pushed into unhealthy situations. Diabetes staff, unlike other medical staff, are rarely provided training in ways to manage and reduce workplace stress, and unless they are resolved, these issues will continue.

Cultural Incongruence between Patient Care and Tribal Beliefs

The staff at the community health center also explained that there was friction between patient care and tribal beliefs. This friction stems from cultural incongruences between the care being offered and the cultural views of the patients. Staff addressed these issues in the following examples.

Cultural sensitivity, a common theme in American Indian healthcare, is defined as "the extent to which ethnic/cultural characteristics, experiences, norms, values,

behavioral patterns, and beliefs of a target population's relevant historical, environmental, and social forces are incorporated in the design, delivery, and evaluation of targeted health promotion materials and programs" (American Association of Diabetes Educators, 2012). As Maria explained, acting in a culturally sensitive manner was often in conflict with her duties as a diabetes educator. "When I first started, they told me you have to be culturally sensitive, you know? Yeah, you do, you have to be really careful what you say. . . . You have to respect different beliefs like their way of living. You know, their traditions. For example, when you hear 'Oh, women don't vote here.' You have to respect that. You can't say, 'Well, why?' you know, 'Why?' It's just their tradition. That's how I see it when they say culturally sensitive. You just have to be sensitive to their culture, to their traditions and their way of thinking. But sometimes you want to take them out of that [tradition], you know? Especially when it has to do with diabetes or cancer or any diseases like that."

Figure 30: Maria shows disapproval of the cakewalk. Photo by author.

Maria regularly shared moments where she felt paradoxes between her goals as a diabetes educator and as a respectful employee. For example, Maria was unhappy that the Community Health Center was sponsoring a "cakewalk" (Figure 31). A cakewalk, as she explained, was an event the health center held to bring parents and youth

together for a shared activity. Music played as youth marched in a circle, much like musical chairs, and when a child no longer had a place to stand they would leave to pick a baked good from a table full of pastries and cakes made of sugar and white flour.

Maria felt that in moments like these she was unable to question the event because it was a popular tradition among tribal families, and since she was not an enrolled member, she was unable to critique the practice for fear of retribution from the Tribal Council. This paradox limited her ability to provide patient education within the tribal setting.

While Maria wanted to take people "out of tradition," other health practitioners also questioned why certain practices were supported when they promoted ill health. As Maria explained in the stern and sarcastic style for which she was known, "Diabetics know about diabetes, but there's no prevention. It's like 'well, now that I'm diabetic I'm going to learn to eat right because I'm tired of taking all this medication. I just don't feel well.' But as far as prevention, it really doesn't happen. A lot of times nobody thinks about it until it happens, then we like to use the excuse we bake bread because it's part of tradition. We bake bread, right?" In this example Maria questions why the tribe promotes baking bread made from white flour, water, and lard, when it is one of the unhealthy foods that puts individuals at risk for diabetes. Much like Maria, she finds herself in a paradox, as she is unable to challenge a practice because she is not an enrolled member and may face retribution.

Mixed Healthcare Messages

The educational goals of the health staff are often lost or challenged by conflicting healthcare messages. For example, there are soda and candy vending machines in the auditorium where students meet for the afterschool program. The vending machines, also located at the Housing Department and formerly at the casino, are managed by a tribal member. Although they are a source of source of income, they are criticized because of where they are placed and what they sell.

Figure 31: Vending machines behind a row of garden tools.

Photo by author.

As Diana explained, removing the vending machines is a sensitive issue. "Like back there I know the vendor puts in what the kids will buy. . . . I mean if Amy wants to move her snack machine somewhere else where it'll make money, great, better for her. But if Mr. Montoya can get one from the vendor that puts not so much hot Cheetos and things like that, it won't hurt us if it doesn't make much money, but this way we all feel bad for [name redacted]. But this is our kids we're talking about. We see it in our adults and we don't want them to fall into this. I do feel bad."

In addition to the vending machines selling soda at the health center, many tribally sponsored programs also give mixed health messages, including operation of the Pueblo's smoke shops, and food at tribally sponsored events. Smoking causes many serious health issues and complicates diabetes care. According to the Centers for Disease Control and Prevention, heart disease is the leading cause of death among American Indians and Alaska Natives. In 2003 alone, heart disease caused 2,712 deaths in the Adult American Indian population, and strokes caused 552 deaths (Centers for Disease Control & Prevention, 2012). Despite these numbers, the Pueblo operates two smoke shops on the reservation, "where [the tribe] guarantees the highest quality of fresh tobacco products and the best customer service in El Paso" (Ysleta del Sur Pueblo, 2013b).

Figure 32: Tigua Smoke Shop, Inc.

Photos from Ysleta del Sur Pueblo (2013b).

The Smoke Shop, a tribally owned business that sells cigarettes and beer in a standard walk-in store and at two drive-up windows, is one of the Pueblo's largest sources of income. It accounts for an estimated 18% of the Pueblo's total revenue,[55] But it promotes health behaviors that increase the likelihood of heart disease,

[55] Income numbers are protected by the Pueblo and not available publically.

hypertension, and stroke (among many health issues) and negatively impact diabetes (Manson et al., 2011). To offset the negative messaging associated with the Smoke Shop, the Community Health Center's ASAP holds an annual "Smoke Out Festival" where the dangers of smoking are presented and discussed.

Finally, food options at tribally sponsored events, including those offered by the health center, present mixed messages about health and wellness. Snacks that are high in sugar are offered at small events and in the afterschool program (Figure 34), or at major events where vegetables are conspicuously missing. Consider, for example, the Employee Lunch, held each year on December 18 at the Community Health Center and paid for by the Tribal Council. In 2009, the buffet was one of several hosted by the Pueblo throughout the year.[56] Staff served large portions of ham, turkey, stuffing, mashed potatoes, gravy, corn, canned cranberries, soda, and tea, and they brought desserts to share. There was one basket of fresh fruit, though it was pushed to the back and I was the only one who picked an item from it.

[56] At the Halloween luncheon at the elders' center, for example, food options included *chilaquiles* (fried corn tortillas), Mexican rice, *frijoles de la jolla* (pinto beans), tostada chips, Velveeta dip, green chile salsa, cake, ice cream, and "marshmallow" salad. The food, although delicious, was also high in fat and sugar.

Figure 33: Afterschool snack of Gatorade, Cheetos, and bologna on white bread.

Photo by author.

The food provided at these events was in stark contrast to the choices and practices suggested by the diabetes prevention program. Missing are low-calorie or low-fat options, or any form of fresh vegetables, and the staff was serving large portions. Finally, only soda and sweetened tea were offered, difficult choices for individuals who did not want to consume sugar. To the Pueblo's credit, food options did change during the time I was there, and I noticed a strong effort to offer water, in addition to soda, at tribal meals, as well as "healthy salads" at the casino's snack shop.

With research predicting that 1 in 3 individuals will become diabetic in the next 37 years (Boyle et al., 2010), the health center must examine its practices and find ways to correct challenges to diabetes prevention. The challenges presented in this section – non-compliance, privacy, location of services, staffing issues, incongruence between patient care practices and tribal belies, and mixed healthcare messages – all negatively impact diabetes prevention efforts. Left unaddressed, the incidence of diabetes will continue to grow.

Part 3: Experimental Programs

Despite the many structural challenges the diabetes program faces, several experimental services and programs organized as part of the field research may prove useful as the health center shifts from management of diabetes to diabetes prevention. These experimental services and programs included the modification of the Healthy Diabetes Living Workshop to include skills-based activities, a Preschool Parenting Workshop to provide nutrition education, a Youth Salsa Garden to introduce youth to vegetables, and a Teen Nutrition Workshop to discuss healthy eating practices. These programs were designed and implemented individually, yet they work in tandem to provide diabetes prevention education to individuals spanning from young children to elders.

Healthy Living Diabetes Education Workshop

The Healthy Living Diabetes Education Workshop is the only diabetes course regularly offered at the Pueblo. The weekly classes were organized and hosted by Maria, the supervisor of the Diabetes Program, and held either in the conference room of the health center or in the Elders' Center, depending on room availability. I assisted the diabetes program from 2008-2010 by preparing materials or assisting with lessons. The classes were usually attended by six to eight senior women, though on occasion one or two senior men would also attend. On many occasions, middle-aged staff and community members, both diabetic and non-diabetic, would join, usually to ask specific questions or try the prepared snack.

The diabetes program used the “Balancing Your Life and Diabetes Curriculum,” developed by the IHS’s Division of Diabetes, which offers information and lesson plans about type 2 diabetes, diabetes self-management, and general healthy lifestyle practices. This comprehensive curriculum follows the National Standards for Diabetes Self-Management Education (Funnell et al., 2011) and provided Maria with weekly topics such as “Proper Diet and Serving Size” or “Foot Care for Diabetics.” To prepare, Maria and I would meet a day or two before the class, review the packet of teaching materials and discuss what teaching aids could be used to make the information more interesting and relevant to the participants. We would brainstorm about where we could find free teaching aids online or how we could make a current aid more interesting. For example, in a session on medications, Maria encouraged participants to make a Diabetes Pill Folder by taping samples of pills that a patient was taking to the inside of a manila folder along with the name and prescription; any additional medical information or questions could be added to the file, and when the patient visited their doctor they would have a record of medications and any questions or comments about procedures.

As a way to increase my involvement with the educational classes, I offered mini-cooking sessions in the classes in late 2008 and 2009. The foods I presented, such as Black Bean and Corn Dip or Mini-English Muffin Pizza, were easy to prepare, used locally available ingredients, and were low on the glycemic index. In addition to providing healthy educational content, these mini cooking classed provided a forum for me to

interact with individuals in the classes and to let them know that I was preparing to conduct research on diabetes management and prevention.

The elders who attended the classes told me they offered a reasonable education while also providing an opportunity to socialize and share life experiences regarding diabetic health. One elder explained, “These classes are good, and I enjoy them,” while another elder complimented the weekly discussion, stating, “We get to learn about everything, including medicine, not just diabetes.” Yet another explained, “I like the food and even made some for my family.”

The workshop was regularly attended, and when a gardening and potluck activity was included,[57] attendance nearly doubled from an average of 9 to 16. Because this workshop includes an activity that is enjoyed – gardening – it has the potential to become a well-attended and potentially very effective program.

Figure 34: Diego (right) waters a planter at the elders' workshop.

Photo by author.

[57] The food included corn enchiladas, white rice, leafy green salad, Jello, pinto beans, and macaroni salad. Eaten in moderation, these foods are an acceptable part of a healthy diet, though not ideal for a low glycemic diet.

Preschool Workshop

The preschool education class was developed by the Maria in 2008 to provide parents of preschool children with skills to make snack options that are healthier than sodas and potato chips, a common snack at the Pueblo. Individuals in the class met once a week for 3 weeks for hour-long sessions starting at 5:30 PM. In the class Maria discussed inexpensive food options and the parents were given “snack packs,” bags with sample snack items including goldfish, apples, juice boxes, and baby carrots. I observed the classes and gave Maria recommendations based on input from the participants.

Figure 35: Maria holds up a "Snack Pack" for use in the parent workshops.

Photo by author.

Although only seven parents attended the workshop, the event was seen as a success because it was the first diabetes prevention outreach program to parents and the first program held on the District 2 reservation. Because of staff constraints this class has not been held since, but it may be held again in the future.

Youth Salsa Garden

I was asked by staff in the afterschool program if I would like to help them develop a small youth garden, eventually called the Salsa Garden because of the tomatoes, jalapenos, and tomatillos that were grown in it (see Appendix E for details regarding budget and activities). Two staff in the Youth Intervention and Prevention afterschool programs thought that developing a small community garden would be useful because it would provide an activity to keep tribal youth busy, it had a connection with the diabetes program, and it would provide an opportunity to meet children and ask their parents if they would be interested in participating in the study. Furthermore, one staffer explained that this was something she was very interested in because many individuals in her family had type 2 diabetes. This program ran in 2008 and 2009 and hosted an estimated 50 students from age 6 to 15.

I helped the staff manage the garden each spring. Maria hosted a workshop regarding nutritious foods and vegetables in which youth drew large posters to show the plants they would grow and eat.

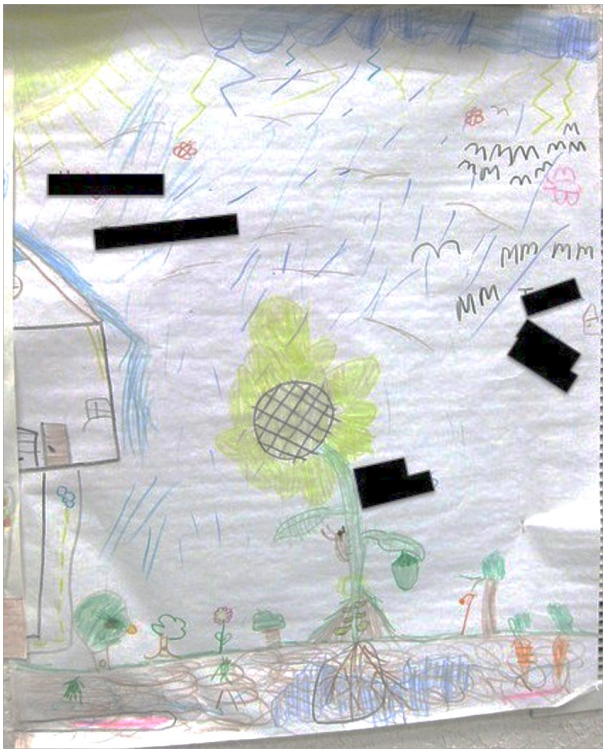

Figure 36: Drawing from the Salsa Garden Workshop.

Photo by author.

The names of the young artists are obscured.

This garden grew very well from spring into summer, and I often saw tribal youth at the garden on the weekends.[58] The garden appeared to have an impact on tribal youth, and although I was unable to interview children on the subject, many parents came up to me and expressed their support. I was told "This [garden] is good. We needed to do something different." Other parents also explained that because of the garden, they planted watermelon and tomatoes in their own backyards. This garden was ultimately folded into a program discussed in the following chapter.

[58] While parents encouraged their children to participate in the afterschool program, they did not provide consent for their children to participate as interview subjects in the dissertation research. As such, I did not interview tribal youth and they are not addressed as individuals.

Teen Nutrition Workshop

As discussions concerning the lack of diabetes prevention programs for youth continued between Maria and myself, it became apparent that teens needed some sort of program to complement the parent and youth workshops. Recognizing that we had an opportunity to provide a program *and* collect research data, Maria suggested we co-develop a program for teens in the afterschool program. Over the course of about two weeks, Maria and I worked together to develop the goals of and materials for the program. I was unable to attend the workshop owing to a family obligation so Maria led the workshop and collected the data.

The aim of the experimental workshop was to learn about the foods teenagers (age 14-19) were eating and provide education about healthy food options. Students met at the Wellness Center, a location they already used as the meeting place for the Youth Intervention and Prevention Program. The 14 students who attended were given a note card and asked to list their favorite three snacks, listing brand names where appropriate (see Appendix D for the names of the specific foods). Maria collected the cards and discussed each item, asking questions such as, "Is [food listed] a favorite food? Would you call this a healthy or unhealthy choice?" As a result of the small survey, Maria learned that chips (n=10, 28%), candy (n=9, 25%), and soda (n=6, 16%) were the top three snack foods eaten during afterschool hours. Only two children indicated eating fruit, vegetables, or other snacks that are low in sugar or fat.

After learning what the teens ate, we shifted to an educational phase, in which all participants viewed Sugarstacks.com (2009), a website that shows the amount of

sugar in foods, and discussed how much sugar was in the food they ate. After looking at how much sugar was in their favorite snacks, students then flipped through "Eat This, Not That" (Zinczenko, 2009), a book donated by the Tribal Education Program that suggested lower-sugar or lower-fat options for common foods. This book served as a discussion tool so Maria could provide nutritional education. Finally, in the last phase, students reviewed what they learned. After discussing healthy options, students took a short break and then reviewed what they learned by making "healthy meals" using assorted plastic foods. Students were split into groups of three or four and asked to make a sample breakfast, lunch, or dinner. One individual from each group explained why the meal was healthy, and the others discussed if they agreed or disagreed. Photos were taken of the groups and their foods, and they were invited to discuss any additional questions.

Figure 37: Students Select Plastic Foods and Create Meals.

Photos by Maria Perez.

This small workshop proved to be a success on many levels. First, this was the first diabetes education workshop for minors, and it proved to be especially productive in discussing nutrition with teenagers. In the days following the workshop I heard many students commenting on the experience, explaining that they had fun working with the

plastic foods and that it was interesting to see how much sugar was in each of the sodas they consumed. One parent that I met about a week after the workshop explained that his daughter was talking to him about the food choices he was making, a sign that the workshop was reaching beyond the individuals into the family setting. This educational workshop was also successful because it was the first time that Maria had incorporated data collection and analysis into one workshop. As a result, Community Health Workers and tribal health assistants could use the findings to ask their patients if they drank specific sodas or energy drinks on a regular basis, and then provide educational material to show that they were not the best choices.

Conclusion

The diabetes prevention program at the Community Health Center is working diligently to address type 2 diabetes, though more can be done to reduce incidence of the disease. For example, the structural challenges that hinder the effectiveness of the center, including compliance issues, privacy, stress, and mixed health messages, can all be addressed by the staff and attempts can be made to minimize their impact. While some of the changes may prove difficult, such as closing the Smoke Shop, the impact may resonate within the community. It is also apparent that the staff structure is hindering the input of Puebloan perspectives, and more can be done to ensure that the culturally significant views of local staff members are included in future planning efforts.

The Tribal Council and the staff at the Community Health Center are already addressing some of the challenges discussed in this chapter. In 2012, the Pueblo

partnered with the newly accredited Texas Tech University Health Sciences Center El Paso campus and residency program to provide primacy care services in the Community Health Center and to examine how best to integrate and expand the programs that are already in place. Having primary care physicians in-house should reduce the number of external referrals and will likely streamline the diabetes care program, as patients will not need to leave the reservation to have their diagnosis confirmed.

The tribe also completely redesigned the Community Health Center in 2012 to meet HIPPA requirements. The many extensive changes include a reception and waiting room, multiple exam rooms that are only accessible by a limited-access door, new rooms for patient education, and a larger, better-equipped testing lab that enables the health center to conduct enhanced screenings. Staff offices were also redesigned so that CHRs, among other staff, could cluster and easily communicate with patients.

In addition to changing the design of the health center, the health center can make other changes to improve patients' sense of privacy and trust. The health center could allow patients to choose the gender of their CHR, and if possible, their primary care provider. Furthermore, because there may be family or other kinship relationships between staff and patients, the center could embark on a patient education campaign that explains Health Insurance Portability and Accountability Act (HIPAA) regulations to the broader Puebloan community. In regards to the high number of non-compliant patients, the health center might examine this issue closely to determine what they can do to make visits easier for patients. They could use a poster media campaign that shows community residents in their homes making comments such as, "I had to take my

car into the shop so I called the CHC to reschedule. It was easy." Campaigns such as these may be effective because they use individuals and messages that come from within the Pueblo.

The Community Health Center, and the Diabetes Program in particular, serve a critical need at Ysleta del Sur Pueblo: the health and wellness of the community. Their patient care and maintenance programs are improving, and they are in a position to consider enhanced diabetes prevention activities that reach the broader population. Although health services are focused on individuals, prevention efforts should be directed toward the broader population in a manner that resonates with the community. In the following chapter I explore wellness opportunities that serve the entire Pueblo and propose coordination with religious practices because they may provide culturally significant forms of diabetes prevention.

Chapter 5: Communal Wellness Practices: Religious Pilgrimages, Dancing, and Gardening

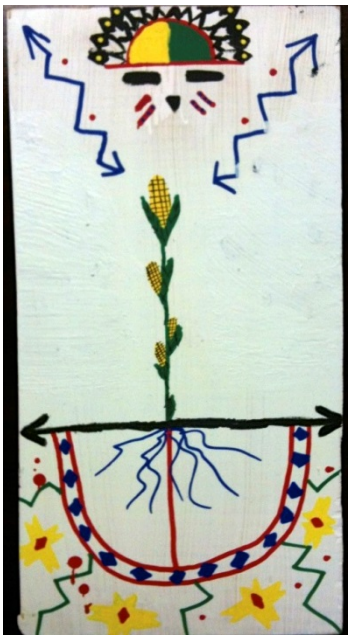

Figure 38: I'Ah (Corn); Community Garden Sign Painted by Tribal Youth.

Photo by author.

The previous chapter addressed individual biomedical practices at the Community Health Center that are utilized to prevent or manage diabetes; this chapter explores community-based communal practices. It is crucial to address individual agency, especially in regards to personal diabetes management skills such as blood sugar testing, but we must not underestimate the potential of communal prevention efforts in which large portions of the population are engaged in culturally congruent diabetes prevention activities in locations that are meaningful and significant. Chapter 5 explores practices which have taken place historically in the Pueblo community and which may prove useful for future diabetes prevention initiatives if they are linked in a culturally sensitive manner. I argue that because community-defined religious practices

such as religious gardens, pilgrimages, and dancing are accepted and practiced by large numbers of the Pueblo's population – across demographic boundaries – they have the potential to become successful components of diabetes prevention programs precisely because they resonate with local ideologies concerning health and wellness while still meeting the biomedical requirements for type 2 diabetes prevention.

Casino Era Wellness Pursuits

Ysleta del Sur Pueblo is responsible for the health and wellness of its members. As explained in Chapter 3, during the Pueblo's era of federal recognition (1960-1992), tribal leadership focused its attention on infrastructure and economic development. Individuals moved from the old Barrio de los Tiguas to the newly formed reservation and to housing built with Housing and Urban Development (HUD) funds. In 1993, following a boom in gaming revenue, the leadership was able to expand housing opportunities for the tribal members and hoped to improve wellness opportunities as well with the construction of tennis courts, an Olympic-sized pool, and a Wellness Center that contained a weight room and multi-purpose dance rooms. Tribal leadership anticipated that these community facilities would be used regularly, ultimately contributing to the health and wellness of the population. Though state of the art, these facilities were underutilized and were slowly scaled down beginning in 2009. In 2012 the pool

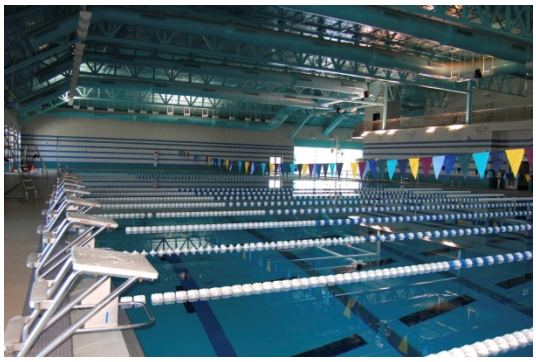

Figure 39: The pool in District 2.
Photo by Ysleta del Sur Pueblo.

closed and the space was converted into an entertainment center.

The Wellness Center and natatorium were the two largest buildings in District 2. The natatorium, referred to as “the pond” by some tribal members, was built with gaming funds. Costing approximately $21 million to construct and an annual maintenance budget of $350,000 to $400,000, it was the only Olympic-sized pool in the region. There were 10 lanes in the 50-meter heated pool, two large locker rooms, a large kiddie pool with a slide, a wheelchair ramp and lift, and bleachers for 1,000 spectators. A basketball court and bleachers, along with a large cafeteria and kitchen, provided additional opportunities and services.

The Wellness Center, located across from the pool, offered a weight room with stationary and free weights, treadmills, stationary bicycles, racquetball courts, a sauna, small offices and a conference room, a game room with a selection of arcade games and gaming systems, and a multi-purpose dance room. Community members also had access to an outdoor basketball court, a tennis court, and two volleyball courts. These outdoor facilities offered a shaded seating area and water fountains. Sports equipment such as basketballs and rackets could be checked out.

The facilities were underutilized and lacked programs for the Pueblo community. Though I visited the facilities multiple times during my field research, I only occasionally saw individuals use the basketball courts and weight room, usually just one or two at a time. The pool was popular during the hot summer months but empty the rest of the year. As one council member explained, “Summertime comes around and everybody is there because there’s nothing to do in the summertime, but after that then it’s like I can

go five or six days without seeing anybody touch that water, which is unfortunate having such a cool facility."

When health and wellness programs were offered at the facilities, participation was considerable at first but almost always tailed off as classes progressed. "I don't know how many times we've started the karate program here where we have 50 kids in the beginning; everyone gets a uniform, and then two months later you're looking at 10 kids, then two months after that, you know, it's just not worth it anymore," the same tribal council member explained. Some community members complained that few if any programs were offered. A mother said, "I take Zumba classes off of the reservation . . . about 12 miles away. It's a bit of a haul and I would be interested in taking Zumba if the wellness facilities offered it." Other members of the Pueblo explained that even if programs were offered, they might not use them. One woman in her twenties who lives in District 1 stated, "I've gone to the Wellness Center, but it depends who's there. The drive back is really long. Yeah, it's a really long drive and I don't like to do it so much; then there's traffic and it really depends who you go with."

To attempt to recuperate costs, the tribe began renting the facility for various non-tribal purposes. The cafeteria was rented to outside groups for large binational policy meetings and the pool was rented by the El Paso and Socorro school districts for swim meets. In 2010 the tribe opened the facility to the general public for a small fee and later began advertising in local newspapers (Flores, 2011). The continued operation of the facility, however, seemed unlikely. When asked about the future of the facility, a tribal council member explored possibilities. "If we close it, then there goes everything

we were trying to get forward on as far as health-wise. Yeah, we have the clinic, but people use it reactive, like 'I'm sick' instead of being proactive and 'I'm going to walk a mile every day at the Rec Center, or swim a couple of laps, or play basketball with a couple of friends.'" After a pause he continued, "I think that's one of the areas where you can tell we've been challenged as far as the closure of the casino. There's different things that probably were going on like walking programs and everybody gets these pedometers and stuff like that, because there was that money and you could just tap into the revenues and say well, these pedometers are X amount of cents, we can get a 30-member walking group and start walking." With the closure of the casino, these funding streams are no longer available.

By the end of 2010 it was apparent that the general population was not using the facility, and in response to the high operational costs the Pueblo leadership began to change the purpose of the facility from wellness to entertainment. Plans were drawn to convert the facility to a large entertainment center to house slot machines and concerts. Before plans were announced to the public, the Pueblo began hosting events to draw attention to the site, including a Fourth of July fireworks show costing an estimated $100,000. In September 2011 the Pueblo publically announced they were closing the facilities and embarked on a $3 million remodel to an entertainment venue with a capacity for 10,000 people and parking for 3,500 cars. By April 2012, the Pueblo announced a series of concerts (Pullin, 2012).

The programs and services that were developed during the casino era were never utilized anywhere near capacity. The pool and wellness facilities were designed by

an outside consulting firm to enhance the exercise opportunities for Pueblo residents, but they never considered local approaches to wellness. This may be why the facilities failed to attract members and ultimately closed. Ironically, the cost to maintain the pool, an estimated $40,000 per month, is slightly less than the estimated cost of care for four diabetic patients (Javitt & Chiang, 2013).

Communal Practices for Health and Wellness

In contrast, there are community wellness practices that *are* culturally accepted and *communal*. These include gardens, religious pilgrimages, and religious dancing. I call these activities *communal* rather than *community* activities because they are practiced and experienced simultaneously by groups of individuals rather than individually.

These activities, some of which have been practiced for many years, are linked to tribal identity, and as such are accepted as appropriate, even essential activities for the well-being of the community. In the current, post-gaming era (2003 to present), these activities align with the revitalization of cultural practices that is occurring at the Pueblo, including increased participation in religious activities, language training in Tiwa, and redevelopment of the urban setting to recapture a tribal a sense of place. Linking communal activities to the goals of the diabetes program, if done in a culturally sensitive manner and with the input of religious leaders, could result in an increase in accessibility to diabetes education, thus improving long-term prevention efforts.

The communal activities to which I refer take place on the religious grounds in District 1 and are linked to specific activities that I argue can serve as effective means for

diabetes prevention and education because they are embedded with the cultural, spiritual, and religious beliefs and values that are important to the Pueblo.

Because religious activities require the permission of select leaders to attend, the diabetes program staff would need to work with religious leaders and the Religious Council if they wish to develop wellness programs that involve religious activities. At Ysleta del Sur Pueblo, a variety of individuals control and regulate access to places of religious significance as well as the activities that take place on them. I came to know three types of individuals who had access to and the power of specific knowledge regarding religious practices (Minkler & Wallerstein, 2003): leadership that regulates religious knowledge, individuals that support and guide events, and individuals that maintain the grounds.[59]

Ysleta del Sur Pueblo's tribal government is composed of a council of elected officials. These council members, such as governor and vice governor, act as a governing body that approves administrative and strategic decisions for both short- and long-term projects. In addition to the elected council seats, the tribal Council also recognizes two lifetime positions, the *cacique* (chief) and *capitan de guerra* (war captain). The chief provides the tribe with long-term spiritual guidance and mentoring, and the war captain provides spiritual and religious guidance. The war captain has numerous duties that ensure religious events are enacted properly. For example, the war captain may open

[59] The tribal members with whom I spoke were very careful not to divulge information that should be kept private or that should not be included in a dissertation. Although I occasionally found myself surrounded by discussions concerning very specific religious titles, designations, clans, and related practices, I was instructed by the war captain not to document them.

and close events with prayer, ensure the necessary and appropriate religious officials are at events, ask that uninvited individuals are escorted away, or check to see that religious events are not recorded or inappropriately documented.

The war captain at Ysleta del Sur Pueblo is David Gally, known to tribal members as "Montaña." Montaña, an enrolled member of the Pueblo, cares deeply for the health and wellness of the community. As a pre-diabetic, Montaña is well aware of the health issues he and the tribal community face, yet he never gives up his positive outlook. In addition to his religious duties, Montaña meets with researchers who want to work with the tribe. In my first formal discussion with him, I learned about the importance of religion in daily life and how to discuss religious topics. Sitting in his office in the Tribal Council building, nestled in between stacks of archival disks, copies of documents, microfiche, 8mm films, audiotapes, and various Pueblo headdresses, Montaña and I discussed my research in the community.

In this first meeting I sensed that he wanted to know what I knew about the Pueblo and my perception of certain events. When our discussion shifted to the history of the Pueblo and the Pueblo Revolt, I explained that in the various books written about the Pueblo Revolt, none of the academic scholars asked the Ysleta del Sur Pueblo leaders what they thought.[60] Montaña explained, "This is a problem with academia. There is a cultural practice, I guess you would call it, where people say 'I don't know' or just don't say anything when an outsider asks about something relatively private." He

[60] I use the term *academic scholars* in contrast to *community scholar,* an individual who is exceptionally knowledgeable about his or her community, though not trained in an academic setting.

handed me a report written from the 1990s with underlined sections stating that the community was not prepared for research.[61] "That's their opinion," Montaña responded, suggesting that I think about public health's focus on "community capacity," or a community's skill and ability to complete academic research. Montaña pulled out another document, this time by J. Walter Fewkes, an anthropologist who published the names and descriptions of many religious activities at the Pueblo. "A lot of this should not have been written." As the conversation continued, I learned that Montaña was a religious leader at the Pueblo, though rather than restrict access to knowledge, he was helping me to gain the knowledge I needed to conduct research in way that would resonate with the Pueblo and respect the religious activities he was going to invite me to be a part of. What was also clear from this conversation was that I should ask Montaña questions regularly, as he would be there to steer me in the right direction or to discuss "my opinion." Indeed, at many subsequent events I would often discreetly ask Montaña if there was a place I should stand, if I was allowed to discuss the event in my research, or if photos were allowed.

Figure 40: Mixing bread dough by hand.

Photo by author.

While Montaña oversaw all religious activities, including access to religious topics, other individuals oversaw, guided, and led food preparation, maintenance

[61] I do not know the exact report I was handed, though I believe it may have been a land-use study for Hueco Tanks State Park.

of the religious grounds, and other activities associated with the events. These supporting community members play an important role at communal events. Prior to the annual feast day, for example, food preparation was coordinated by teams, split by gender, that oversaw various tasks in one of three zones: the food preparation area, the kitchen, and the outdoor *hornos* (beehive ovens). Six-foot tables and chairs were set up in the food preparation area for women to chop vegetables, clean seeds from dried red chiles and soak them in water, and prepare bread dough. In the kitchen, both men and women hand-mixed ingredients for bread, 25 lbs of flour at a time, and men prepared meat for *chile colorado* (red chile).

Figure 41: Cooling an oven with a water-soaked burlap sack.

Photo by author.

At the outdoor ovens, men worked in teams of six or seven to produce a steady flow of baked bread. One or more individuals oversaw each zone and ensured that activities flowed smoothly. Finally, the Pueblo grounds staff maintained the grounds, essential to ensuring the dance ground is safe for dancers, attractive (as defined by the Pueblo), and kept safe and secure when not in use. A team of six men formed the grounds crew at the Pueblo, and in addition to their work at other tribal properties, this group played a crucial role in development of the community gardens, discussed in the following section, as they assisted with selection of the garden's location, tilling of the soil, securing water rights, and expansion of the garden after the first season.

Each of the participants – the war captain, the food preparation staff, and the Pueblo groundskeepers –had important roles in development of the gardens utilized in my research.

Religious Places

There are many religious places in Ysleta del Sur Pueblo, in the surrounding mountains, state parks, and across international boundary with Mexico. Other, less-auspicious religious places are located on unassuming plots of land located between houses in residential areas. Places such as these may prove useful for diabetes prevention as they support practices that are endorsed by the tribe. In order for these places to be utilized, we must first understand the practices that take place on them, and their significance.

The Pueblo's primary religious dance ground, located in the Old Barrio de los Tiguas, is surrounded on three sides by homes and city streets and on the fourth by an irrigation canal. This layout is significant because it originally served as a central plaza for the pueblo, much like the plazas in the New Mexico Pueblos. Yearly, during the Feast of St. Anthony, and on other religious dances, meetings, or activities throughout the year, this place is especially active. In addition to the Tuh-Lah, or men's meeting house, the area also houses the beehive ovens used to bake the bread that is eaten at religious feasts, a long, rectangular, covered dance ground that is filled with lush green grass, a recently completed kiva, and a large cafeteria to serve several hundred people at a time.

The religious grounds are surrounded by chain-link fence and accessible only to

individuals with permission. For example, although anyone from the tribe is allowed onto the property, they must have a reason for being there. For example, facilities staff members have their offices and garage on the property, and I, as a researcher, had access to the community garden. Outsiders to the reservation are only allowed on the land with permission, as is the case during the annual religious feasts when the public is invited. I was not aware of this when I started my research, but I suspected it was an unwritten rule. Indeed, when family came to visit, I was tested by Diego to see how well I understood the rules of access. In mid-winter, I took my mother on a tour of the reservation. I drove up to the grounds to show her the area where the garden was located. Because I did not believe she was allowed into the property, we only peered at the garden through our car windows. Later that evening, I hosted a dinner with several community members in attendance, including Diego. Diego perked up when I mentioned that I took my mom to the property. He politely asked my mother, "Did Sean take you to see the garden?" and seemed relieved when my mother explained that I thought it would be inappropriate to go onto that specific tribal land without permission of the war captain.

Prior to the urbanization of the east side, the Lower Valley was an agricultural area connected by a series of roads and agricultural canals. The canals were built by the Pueblo community at some point after they came to the region following the Pueblo Revolt, and they hold both functional and symbolic meanings for the tribe. The canals distribute water throughout the Lower Valley into the various tribal fields and yards, and they connect tribally owned properties. I used the Franklin Canal, one of the main

canals, to commute by bicycle from my home to the tribal garden and to the Community Health Center. For the Pueblo, however, the canals serve a much more powerful and symbolic purpose, particularly in regards to the annual feast day; they serve as pilgrimage routes for Salida de los Santos.

Religious Pilgrimages

Each year in early June, community members gather at a small and inconspicuous residential lot about a quarter mile from the Pueblo's mission to hold the Salida de los Santos (Presentation of the Saints) pilgrimages.[62] If promoted appropriately by the Pueblo, this activity could align with the goals of diabetes prevention program because it is an excellent form of exercise.

A pilgrimage is "a journey to a special place, in which both the journey and the destination have spiritual significance for the journeyer" (Davidson & Gitlitz, 2002). The Salida de los Santos pilgrimage, as explained in a document put together by the war captain and distributed to the community,

> is a tradition dating back to the time when the area was primarily a farming community. On this day, the images of Saint Anthony de Padua are carried in the four directions by members of the Tribe for the blessing of the farm fields and houses in the area. Today, traditional routes are followed as the Santos are carried from house to house. Persons wishing to welcome the Santos into their homes may do so and receive a house blessing. In addition, offerings of money or food (canned or dry) are made to the Santos. The *limosna* (money offerings) are used to pay for the mass, choir, flowers, church decorations, and *vestiture* (ceremonial dress) of the San Antonio for the feast day June 13.They are also used to purchase food for the public community meal served that day. Food donated is given to needy families in the area.

[62] The specific location is near Old County Rd. and Whittier.

At this unassuming, yet deeply significant place, two canals intersect and stretch out in the four cardinal directions. Montaña explained that this was where the members of the Pueblo stayed when they arrived in the El Paso region following the Pueblo Revolt. Each year the residents of the Pueblo meet at this location to honor that night. They divide into four groups, either to walk with families or to pick a route that they enjoy or are able to walk, and process along the canals in the four directions. Pilgrimages such as Salida, as Yvette, a CHR, explained, are one of the most well-attended religious events at the Pueblo, and one of the few events in which community members participate as families, not individuals. Another individual walking the pilgrimage explained that different families lead the different walks and pass this responsibility to relatives, year after year.

The four routes extend into different neighborhoods, roughly in the four cardinal directions, and are known for the community they traverse as well as their varying difficulty. The southern route is called El Garrote (the club), and the walks take place along the neighborhood located near the Tuh-la. To the west is Ysleta 1, a densely packed residential area, and to the east is Ysleta 2. The route to the north is called San Jose, and it passes the San Jose Church toward the northernmost boundary of the Pueblo's original land grant. This is the route that I traveled two years in a row, and which I discuss below.

Preparations for Salida began on June 3, the day before the pilgrimages. Women gather in the Tuh-Lah and clean six-foot tables and chairs thoroughly with washcloths and solutions of diluted bleach. In the kitchen, meanwhile, food is prepared for the

participants of the pilgrimages, including breakfast burritos, brisket, assorted fruit, and an assortment of drinks such as water and Gatorade. On outdoor grills, fat cut from the brisket is grilled or fried for snacks to be eaten while the cooks are working.

Several individuals mentioned that, in 2009, temperatures were in the high 90s, and in 2010 they were expected to be well above 102°F. They encouraged me to drink plenty of water the day before and to eat a light meal. Two men explained that one year they had gone out drinking the night before the event and regretted it. "Man, last year I was drinking the night before and I had a terrible hangover, and it was the most difficult day that I'd had." I learned from others that this was not only a health warning but also lesson about the strict taboo against drinking at all religious events. Other individuals provided more tangible suggestions, urging me to dress in loose-fitting athletic wear[63] and to cancel any interviews or activities the day after the pilgrimage because I would be sore from walking.

On June 4, the day of the Salida, individuals arrived at Nakitu Street, the location of the Tuh-Lah, at 4:00am to prepare breakfast,[64] and individuals wanting breakfast arrived between 4:30 and 6:00am. At 6:00am, all individuals in attendance walked to the church for a short mass. Once we were at the church, Father Charles entered,

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[63] Unlike many religious events at the Pueblo, participants in Salida wear street clothing. Kathy, a CHR, instructed me to wear a hat and red bandana around my neck (red being the religious color), good walking shoes and running socks, a moisture-wicking t-shirt, jeans, and mid-length UnderArmor underwear to prevent chafing, all suggestions I was very glad to receive.

[64] Mayordomos, or sponsors, managing this event were exceptionally friendly and supportive. Rather than having to bike to the Tuh-La, I was picked up by Bear at 3:30am and we arrived to find freshly brewed hot coffee and a selection of Mexican pastries. Though I struggled to find words at that early hour, the individuals around me seemed cheerful and were able to joke without hesitation.

wearing his formal white regalia. Behind him entered the bishop. Each gave a prayer, and Father Charles smudged all in attendance with a special Pueblo-style smudge pot and an eagle fan.

After approximately half an hour, everyone made their way down the road to Old Country and Whittier Street, the site of two intersecting canals, with the traffic redirected by the Tribal Police. Montaña, the war captain, explained that I could take photos once we left the sacred site, but not while we made our way there, or at the site itself. Once there, Montaña gave a prayer and we divided into our four pilgrimage groups. I joined the San Jose group and followed three individuals who led us at a fast walking pace. Yvette, a coordinator in the afterschool program, carried a small statue of San Antonio and powered on ahead. An individual with a burlap bag flanked her on the right, and on her left an individual continuously rang a brass bell.

Figure 42: Walking next to the canal during Salida de los Santos.

Photo by author.

As we made our way along the canal and roads, we stopped at houses to invite both tribal and non-tribal members to the Feast Day, offered a blessing for their home, and collected donations of beans, canned goods, or cash. Between the clangs of the brass bell, Montaña told me that "that this walk was actually done to bless the fields

and the houses; that even up to 20-30 years ago the area was nothing but fields, so it was to bless the fields for good harvests and growth, to bless the houses."

As we weaved through the streets and canals, we came upon different plants, and Montaña occasionally pulled me aside to show me their use. "These are *garambullos,*" he explained. "Wolf-berries, I think." He handed me some quarter inch, round, grape-looking fruits that were growing on vines along the ditches. Soon, others circled around to hear what was being said and began to pick them off the vine. "We used to make jelly out of these and spread them on bread," Montaña explained before we continued on our way.

Figure 43: Holding garambullos.

Photo by author.

By 11:00am, it was already 92°F and the temperature was steadily rising. We continued walking, and at certain points, instructed by individuals with walkie-talkies, trucks would arrive with the tribal grounds staff to hand out water and Gatorade, and to shuttle individuals back and forth to use the restroom. For lunch we stopped to rest under two weeping willow trees that were planted by the tribe several years ago. Tribal pickup trucks arrived again and individuals handed out lunch, consisting of beef brisket burritos, an extra flour tortilla, a bag of Sun Chips, a granola bar, and a small baggie with either grapes or cherry tomatoes. Coke, Gatorade, or water was offered, but most individuals choose to drink both soda and water. Vegetarians were offered hash brown burritos instead of brisket.

After lunch we continued on what became a gruelingly difficult pilgrimage. The temperature peaked at 107°F, a record-setting day for the year. We continued on, and at one point I was passed the bell and asked to join the group. “Come on Mr. Sean, we have to pick the pace up!” Yvette encouraged as I walked alongside her, the bell slowly feeling heavier and heavier. Eventually, we reached what I am told was the midpoint of our route, a small agricultural hill where a farmer planted corn and red chile. Hidden behind a Wal-Mart and a convent, the field seemed out of place, isolated from the bustle of El Paso. A handful of individuals walked to the top of the hill and stopped at the last house on the route. They returned several minutes later, and the rest of the group slowly began to make their way back.

We returned to the Tuh-La a little after 3:00pm and were greeted by lines of applauding CHRs and cooks. “Thank you for your sacrifice!” Diego said to several individuals before shuttling them to tables for a meal of freshly baked bread, peas with red chile, spaghetti, beans with *chicharrones* (pork rinds), tea, and water. A new drink option, pineapple juice, watermelon juice, or lemonade, rounded out the selection and was handed out by the CHRs. In time, the three other groups arrived and also enjoyed freshly cooked meals.

This pilgrimage is deeply significant to Ysleta del Sur Pueblo because of the connection to the place and because it initiates the activities for the religious feast. However, in addition to its religious significance, this activity provides a valuable educational lesson for diabetes prevention and wellness. The event promotes physical activity and welcomes all individuals from the Pueblo to participate. In addition, the

food that is offered at the event is appropriate and healthy, the portion size is appropriate, and water is offered alongside the other beverages.

Religious Dancing

In this section I discuss the significance of religious dancing, describe dancing in general terms, and provide examples of dancing at a large and a small event. This activity is deeply significant to the pueblo and, if tied to diabetes prevention in a subtle manner, could prove to be a useful communal diabetes prevention and health education practice.

Pueblo dancing is one of the most important activities at a Pueblo, and it is deeply significant for the individuals who dance, those who help prepare for the event behind the scenes, and those who are spectators. Religious dancing is a process that unfolds over time and connects dancers with each other, their Pueblo origins, and spiritual realms in what may be called a ritual drama, or a "process which serves to unite humans with other humans, as well as humans with other-than-humans, the revealed with the unrevealed worlds, the visible with the invisible" (Frisbie, 1980, p. 3).

Eleven religious dances take place at the Pueblo on nearly a monthly basis.[65] The dances are Dia de San Antonio (St. Anthony of Saint Anthony of Padua) on June 13, Dia de San Juan (St. John the Baptist) on June 24, Dia de San Pedro y San Pablo (St. Peter and St. Paul) on June 29, Dia de San Santiago (St. James) on July 25, Dia de Santa Maria (St. Ann) on July 26, Dia de San Andres (St. Andrew) on November 30, two dances on

[65] Other dances take place throughout the year, and while they are not listed with these dances, they are still very important and significant for the community and the participants.

Christmas (December 25), Dia de los Santos Inocentes (Holy Innocents) on December 28, New Year's Day (January 1), and Dia de los Santos Reyes (Three Kings, or Epiphany) on January 6. The Dia de San Antonio, also known as the feast, feast day, or *fiesta* (celebration), is the most important and largest dance of the year for Ysleta del Sur Pueblo because it honors the Pueblo's patron saint, Saint Anthony.

The religious dance calendar is shaped by agricultural practices and is so significant that it regulates political terms for the Tribal Council. A dancer and member of the Religious and Tribal Councils explained, "On a farm you get everything ready in January and February. March comes around you get everything in the ground. By the time feast [day] comes around everything is already growing." Regarding political office, "Elections are New Year's Eve and you don't take office until January 6; that's the day of turnover. . . . Well, what happens on January 6th is the last dance that we have, so the whole ceremonial year is kind of closed. But it's closed for those who aren't reelected, and opened up for those who were elected, and that's when [the term] starts."

Dances are named after Catholic saints and involve a mix of Catholic rituals at the church in addition to the dancing. It is unethical to discuss specific dance practices, such as dance steps and *figuras* (formations*)*, in deference to privacy restrictions enforced by the tribe to protect their cultural knowledge. However, some general practices may be described.

The style of ceremonial clothing that the men and women wear at Pueblo dances has been used for centuries and has been documented in use at Ysleta since at least 1936, when a tribal delegation met President Franklin D. Roosevelt at the Texas

Centennial on June 12 (Cleofas Calleros Estate, 1936; Ysleta del Sur Pueblo, 2013). Unless dressed as an animal or a deity, the men are dressed in a brown fabric with red tassels, calf-height moccasins, and a woven belt.[66] In one hand they hold a red gourd rattle and in the other hand they hold a symbolic bow and arrow. Some men also wear rattles around their ankles. Women are dressed in a long skirt and a black or white shirt, a *manta* dress (literally "blanket"), and moccasins. Women hold two arrows wrapped in cornhusks. Both men and women wear red face paint: women wear circles; men, a line. The red paint is made from clay and water. Women and some men adorn themselves with silver and turquoise jewelry. If men have long hair, they pull it back into a ponytail with red yarn, and if women have long hair, they make two ponytails. Singers, sometimes called *chanters,* are all male and wear either the traditional regalia or brown pants with a ribbon shirt. Woven belts are tied at the waist. Chanters, like singers, pull their long hair into ponytails. Like the dancers, the men wear moccasins.

Figure 44: Traditional dance regalia on display at the cultural center.

Photo by author.

[66] Some individuals dress as buffalos or eagles for public or social dances. Regarding ceremonial clothing for the Pueblo dances, with induction to the All Indian Pueblo Council in 2010, tribal members are considering wearing white woven kilts instead of brown pants with red fringe. For a description of dance regalia, see Sweet's *Dances of the Tewa Pueblo Indians* (1985). At some dances men are also beginning to wear evergreen branches, a Pueblo symbol of life.

Dances at Ysleta del Sur Pueblo begin with tribal members meeting at the Tuh-la at or before dawn. Upwards of 80 dancers currently participate in the Feast Day dance (with upwards of 50 individuals providing support), whereas smaller dances may have only 20 dancers. Since completion of the kiva in 2009, members meet inside the kiva for prayer and, in some cases, dance before moving to the main dance ground. In general, a spectator to a public dance at the Pueblo would see a rectangular area with a group of men circled behind the Pueblo's red sacred hand-held drum, a sun painted on one side and a moon on the other. To the left and right of the men are two shoulder-to-shoulder rows of dancers, men on one side, and women on the other. At the four corners around the dancers stand four *capitanes* (captains) with pump-action shotguns. These individuals serve two purposes. While dances are taking place, they form a spiritual boundary around the dancers, and while dancers are in transit on city streets between one dance ground and another, they assist with traffic control, firing at or above cars if they do not stop.

Approximately 15 chanters (more, if available) sing while two or three individuals hold the tribe's sacred drum for another individual to beat. Songs are sung or chanted in a mix of Tiwa and Spanish and provide a rhythmic downbeat for the dancers. At given points in the song, the pairs of men and women come together and dance in a manner that represents planting. Men move as if opening the soil with a planting stick, and women follow with a motion of throwing seeds on the soil and covering the hole with a quick shuffle of their feet. Dancers complete sets of dances until everyone has completed dancing or a specific dance pattern has been completed. At Ysleta del Sur

Pueblo, some dances move back and forth between the traditional dance ground and a plaza in front of the Catholic church, and at designated moments the dancers form specific *figuras* (dance formations).[67] At lunchtime, usually around noon, dancers take a break and enter the Tuh-la's cafeteria for a communal meal. Dancers continue until dusk, at which point they complete their dances and ceremonies.

Individuals dance for many reasons and see it as a way to pray for others. Many individuals make a *promesa* (promise) in which they promise to dance and pray for another individual. When they dance, they "dance hard," which can be described as being committed to the dance and committed to others in a positive and loving manner.

All of the dances are deeply significant and have specific meanings, though it is inappropriate to discuss the meaning and significance in detail. In general terms, the four cardinal directions are always recognized, the air and land below, and a ceremonial center. The four directions represent the four seasons, tying the Pueblo in both time and space, and individuals honor the four directions when they dance, thus tying themselves to each other, the Pueblo, and the broader landscape.

Individuals participate in feasts as a way to pray, to honor their Pueblo identity, and to recognize membership at Ysleta del Sur Pueblo. By participating in the dance or assisting in the kitchen, individuals learn about cultural patrimony, language, and other specific practices that are not actively documented or learned in written form.

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[67] In a variety of dance *figuras*, dancers create various designs such as a four-pointed star which indicates each of the four directions. Historically, this formation has also been called *la estrella* (Spanish for "star") and Pa'huitla, the Tiwa word for star. Other dance formations have names as well, though for reasons regarding the privacy and sacredness of the dances, I was asked not to document them.

Participants support each other, rather than standing out as individuals, and in doing so create a profound experience that is shared by all involved.

Individuals sometimes request to have one of the smaller dances at their house. For example, if a saint is a special patron to a family, or if the individual wants to honor someone in their family with that saint's name, they may request the dance to be held at their home on the particular saint's day. In exchange, they may provide meals and water for the dancers.

Dancing requires an incredible amount of physical endurance. The smaller dances may last between 3 hours and 6 hours, but the larger ones can last up to 10 or 12 hours, as is the case with the St. Anthony Feast Day. To prepare, the best dancers run regularly throughout the year and practice dance steps on their own or with close friends; some minors practice by dancing weekly at the public dances at the cultural center. Prior to dances, community members gather for intensive practice sessions. Prior to the Fiesta de San Antonio, dancers gather for four one- to three-hour practice sessions.

Like the pilgrimage discussed earlier, religious dancing could serve as an effective means to promote the physical activity goals of the Diabetes Program, but only if it is linked in a culturally appropriate manner. Care should be taken not overstep or underestimate the religious foundation of the activities by implying that dancing is an activity designed to stay in shape, and not for religious and spiritual purposes.

Religious Gardens and Communal Food

As explained in Chapter 1, community gardens have been utilized by other American Indian diabetes prevention programs (Armstrong, 2000). These gardening programs are being used to complement or extend biomedical models for diabetes prevention, whereby individuals engage in gardening and learn about individual exercise and nutrition practices. At at Ysleta del Sur Pueblo, however, three experimental gardens were developed to complement the research process, and although the Pueblo diabetes program supported them, they were not designed to serve as central components of the diabetes program or as sites for diabetes education or interventions. Instead, they were built to support the research by serving as a place to meet participants, and as a way for me to give back to the community. As time progressed I learned that the significance of the Pueblo gardens was far deeper than I initially expected: unlike gardens that focus exclusively on production of healthy produce for nutritional education programs or to support biomedical education models (Lombard, Forster-Cox, Smeal, & O'Neill, 2006; Mihesuah, 2003), the gardens at Ysleta del Sur Pueblo were linked to a collection of integrated and deeply significant religious practices that may connect to diabetes prevention in a manner that has been missing from the medical programs utilized by other diabetes prevention programs, including the one at the Ysleta del Sur Pueblo. As a member of the Tribal Council said, “A lot of tribal members might not know that dancing is part of the [the agricultural calendar]. To involve and incorporate that information into a diabetes program and the whole community garden is just awesome.”

Three different gardens were developed at Ysleta del Sur Pueblo. The first was a

small “salsa garden” for tribal youth in the afterschool program, and the second was an above-ground garden at the Juanchido Elders' Center (both discussed in the previous chapter). The third and largest, the “Pueblo garden,” was located on the religious grounds. Below, I describe the activities that took place at the garden over a two-year period and discuss the implications for communal diabetes prevention.

The First Year of the Pueblo Garden

During research consultations with the health staff regarding the dissertation proposal, the director of the CHC and his staff learned that I taught an undergraduate anthropology course on community gardens at the University of New Mexico. I believed a community garden could serve multiple purposes, including providing an opportunity for me to meet new individuals at the Pueblo, a comfortable place to discuss diabetes with individuals, and a way for me to give something back to the community. The staff agreed, and we continued to explore the idea.

Over the course of four meetings in 2008 and 2009,[68] interested health center staff and community members came together to discuss my doctoral research, at that time in the proposal development stage, and development of the garden. Four individuals took the lead in planning the garden (though it was not uncommon for discussions to be held throughout the reservation with any interested individual, including members of the Tribal Council). Because the community garden fell under

[68] The first three meetings were held on November 19, 2008; December 12, 2008; and January 16, 2009. The final meeting was held on February 20, 2009, one week before the defense of my dissertation proposal.

research being guided by the CHC, Dr. Thomas, the director of the health center, and Maria, the supervisor of the Diabetes Program, both served on the committee. Eduardo Ramos, an interested community member who also served on the religious council, volunteered to assist in development of the garden and to serve as a community representative should any issues arise. I rounded out the core group.

Four possible locations were identified for the garden: (1) near the CHC and elders' center, (2) near the elders' housing area, (3) in District 2 near the Educational Center, and (4) near the kiva at the primary religious dance grounds. I initially proposed placing the community garden adjacent to the Educational Center or Community Health Center because it was close to where the majority of individuals lived. However, the majority of individuals we spoke with suggested placing the garden adjacent to the kiva in the religious compound for relatively easy access to water via the Franklin irrigation canal, located adjacent to the property, and because of security concerns and making sure the garden would not be vandalized. Furthermore, gardening tools were already on site in the Pueblo groundskeepers' garage. Other members also explained a connection between the garden and religious activities.

The garden team ultimately decided that the area adjacent to kiva was the best location and quickly developed a proposal (see Appendix F), complete with a modest budget of $450, which I agreed to fund, and a schedule of preliminary activities. The proposal was submitted to the Tribal Council on January 27, 2009, and was approved without discussion, most likely because all of the council members had learned about the garden from me or from others. Following approval by the Tribal Council, three

garden workdays were scheduled, and a garden-planning meeting was scheduled for February 20, 2009, so interested community members could learn more about the activities.

On Wednesday, March 18, a meeting was held in the CHC auditorium to confirm details. I was reminded to contact tribal facilities or the tribal police to ask them to unlock the gates to the grounds and the building so we would have bathroom access. I emailed Freddy Granillo, a groundskeeper who had an office in that area, and he coordinated with his staff. Later that day, the tribal records office sent an email to their membership announcing the workday on March 21.

Photo 1: Arial view of the location of the community garden.

Photo by Google Maps.

The day before the event, I prepared for the workday by confirming access to the garden site with tribal facilities and police, and I picked up supplies at various tribal departments and local businesses. Yvette from the Youth Prevention and Intervention Program (the afterschool program) loaned me a large cooler and a garden hose, and six shovels and a wheelbarrow were borrowed from the Tribal Housing Department. From Home Depot, I rented a small gas-powered tiller, and with my fellowship stipend I purchased a small saw and assorted tools to complement my own shovel, fork, pickaxe and hoe, a bundle of stakes and twine to mark off garden boundaries, and multiple bags of mulch and manure. For

snacks I purchased six cases of water, a large bag of apples, and a large bag of oranges. I also packed three large boxes of donated seeds.

Figure 45: Discussing the garden with tribal elder Eduardo "Ed" Ramos and Deloris Lawler.

Unknown photographer.

The morning of March 21, 2009, I loaded my Land Rover with supplies and arrived at the Tuh-Lah at approximately 7:30am (later I would be scolded by Becky, the mother of a study participant, for not asking her for her assistance and the use of her truck). Yvette, the employee who had loaned me supplies from the afterschool program, was the first to arrive and was shortly thereafter accompanied by eighteen other individuals. The individuals in attendance included both tribal and non-tribal staff, tribal elders, interested parents with their children, and several mothers with infants.

We began by discussing the location of the garden, and with the assistance of Eduardo, marked off a 24' x 24' section of land. After hand tilling as much of the soil as possible, we used the gas-powered garden tiller to mix the soil and added bags of organic matter and manure to enhance the nutrients in the soil. The process was difficult, and as I learned the following Monday, we accidentally cut the facilities department's telecommunications line. This worried me greatly but proved not to be an issue of great concern. The staff explained that they were "looking for the line" and that

we had actually provided them a service by finding it.[69] By about noon we had completely tilled the soil, and following Eduardo's suggestion, we decided to flood the area and give the organic matter two weeks to break down into the soil.

On April 2 a reminder was sent to the garden participants informing them of the planting on April 4 and was also posted on the Pueblo's online events calendar.[70] However, the event was cancelled because of high winds and dust, a common concern in El Paso during April and May.

Figure 46: Tilling by hand; the telecommunications line we cut is circled in red.

Unknown photographer.

Finally, on April 18, the weather was clear and we were able to plant the garden. Fourteen Pueblo staff, parents, and children arrived for the planning. We began the day with a blessing in both Tiwa and English of the air, the soil, and each other by the war

[69] I was worried about cutting the line and thought it would result in an expensive repair and would likely harm my relationship with the grounds staff and the Tribal Council. I was told "not to worry about it" by one individual and later was told that this issue was indeed discussed by the Tribal Council but that several individuals came to my defense.
[70] The online calendar stated: Time: 9:00 AM. Planting will take place if it is not windy. Bring a shovel, gloves, and a snack. For more information contact Maria Perez, CHC Diabetes Program Supervisor, or Sean Bruna. Free seeds may be taken home after the planting for family gardens. All Tigua families are welcome. Contact Maria Perez or Sean Bruna for information.

captain. Once the blessing was complete, each of us blessed the area where seeds would be planted with corn flour. After the blessing we selected seeds that were donated by a non-profit based out of Albuquerque[71] or that I had purchased from Native Seeds/SEARCH. Montaña went through the seeds and separated various plants that would not grow well in the looming summer heat. After some discussion, we planted squash, tomatoes, zucchinis, and jalapenos in somewhat clustered spots on the garden. Seeds that were not used in the garden were freely distributed to anyone who wanted to use them in their own backyard gardens. Montaña selected several packets of white corn while the children in attendance quickly grabbed varieties of melon.

Once the planting was complete, we watered the grounds thoroughly and went home. I stayed late to make sure the grounds and facilities were cleaned and properly locked.

The following week, on April 22, an employee from the Economic Development posted a story about the garden on the web page. Titled "Sowing the Seeds for the Future to Honor

Figure 47: Selecting seeds for planting. Unknown photographer.

[71] Seed and Light International donated some of the seeds. They learned about my research through the University of New Mexico's Research Service Learning Program, and the director of the group, a diabetic himself, donated the seeds because he supported diabetes research that combined local engagement and agricultural production.

Tigua History and Tradition," the post shared activities from the previous weekend and explained the significance of planting the garden on traditional grounds.

> Day broke on Saturday, April 18, 2009 with over a dozen volunteer community members attending to what is to become a community garden producing a plethora of organic vegetables, including squash, zucchini, carrots, spinach, tomatoes, a variety of lettuce and onions, chives, watermelon, chilies and even some herbs such as basil. "This project is significant because it brings the community together to accomplish a common goal in manner that is meaningful and honors the Tigua history," Dolores Lawler, garden volunteer said. "It is a testament that Tiguas want to carry forward tradition and a shared respect for growing food on tribal lands."
>
> The garden is located at the Tuh-lah property, adjacent to the Pueblo's kiva. The project is designed to encourage healthy living habits and outdoor activity with the nutritional benefits that an organic vegetable garden brings. "Its placement on traditional grounds sends a message of hope for a healthy future for the Pueblo with the continuation of Native farming techniques and reverence for our Tigua ancestors," Tribal War Captain David Gally said.
>
> The community garden was made possible with support from the Diabetes Prevention Program, the Community Health Center, and guidance from Sean P. Bruna, a PhD candidate from the University of New Mexico's Department of Anthropology, who funded the project with a Robert Wood Johnson Foundation Doctoral Fellowship and who is a key contributor to the development of the project.

Though the garden was open to the entire community, it was generally cared for by the facilities staff, many of whom have type 2 diabetes themselves, a pair of CHRs, and myself. I would water the garden about four times a week, and when the community health center was not busy, Diego and Diana would water it for me or pull weeds. We soon learned that using city water was very expensive, so the grounds staff started watering using a large irrigation pump and fire hoses. I would learn, however, that this process was illegal because the Tribe did not have water rights.

While watering, I spoke with the facilities staff, many of whom were also on the religious council, about the location of the garden. In late May, for example, while taking a break from weeding, I spoke with Freddy Granillo, the member of the grounds staff who ensured that I had access to the grounds for the first garden workday. “Everything is here and happens here . . . the estufas (beehive ovens), the dancing,” he said, before explaining that the grounds staff is responsible for the majority of the work that ensures the grounds are ready.

By July 2009 daily temperatures were well above 100°F. Weeds and grass grew in the garden, but the wet soil indicated that someone, possibly the facilities staff, was watering the garden daily. It was also apparent that vegetables were being harvested, though I was never able to learn by whom. The produce that did remain was offered, at the suggestion of Freddy, as communal food for the Kateri Tekakwitha, a tribal dance held on July 14.

Figure 48: Painting garden signs.

Photo by author.

Whenever possible, other programs were developed in tandem with the garden. For example, as part of the Community Health Center’s Tobacco Fair, a community-wide event to teach about the dangers of inappropriate use of tobacco, community members were invited to paint garden signs in Tiwa for the kiva garden or their own gardens. Using a vocabulary list provided by the war

captain, parents and their children painted signs for their favorite garden plants (see, appendix F)[72].

On July 25, 2009 (coincidentally, the Dia de Santiago), the heat was scorching the garden and I decided to harvest the remaining vegetables. In between breaks, when I watched the dancers, I clipped the remaining zucchini and gave them away to an elder who lived in the area. At the suggestion of a member of the grounds staff I pulled the remaining organic matter for compost and laid the garden to rest. As I struggled in the heat, I was amazed to see the chanters and dancers still dancing in the sun.

The Second Year of the Pueblo Garden

The garden project continued for a second year. On January 27, 2010, Montaña asked me to meet him in his Tribal Council office so he could share some good news. He first explained that the building next to the garden had been torn down, and that the tribal council decided to have a regular Pueblo garden. “With your expertise we can have a little garden,” he said several times during the conversation. He also explained that the tribe obtained water rights and would begin irrigating the land two or three times a month using a PVC system and a permanent pump. He also explained that the tribe wanted to incorporate traditional practices. Good Friday, or sometime after Easter Sunday, “maybe that's called Easter Monday”, he stated, and would be a planting day.

[72] The vocabulary list supplied included *P'ah* (squash), *Lafa pa* (watermelon), *I'ah* (corn), *B'iruni* (melon), *Chidi-shur* (green chili), *Sli'uh* (onion), *Paihuila* (tomato), *Taslar* (beans), and *Sli'ara* (celery).

Corn would also be planted, preferably the tribe's white corn that is used at every ceremony. The corn, he said, should be planted the first week of March.

Montaña explained that dances and prayers were held during the first week of March when the irrigation canals were opened. "The acequia madre," he said, pointing in the direction of the canal that ran next to tribal council offices, "was opened up to get water from the Rio. We can't do that anymore because of the border fence and other problems." He paused, gathering his thoughts. "But the church made us farm when we came down here. And by the 1800s there were many vineyards all over." He then went into his closet and pulled out a large photo portfolio. He began flipping through photos, stopping at several that showed oxen being used on the farms, and grapes being harvested and crushed into juice for wine. "See, we used ox for this work. And the church wanted the wine. We also have a wine, our drink . . . it's made with the corn and is called *tesguino.*" Montaña continued, "We would like to have other plants, like sage too. I bought a sage in Wal-Mart, but it is not doing so good. It does not grow very big, so maybe with your expertise, some soil testing and the sort, you can tell us how to improve the soil. Maybe we can bring manure from the ranch. We can bring in the BS for good use," he joked as we discussed additional details.

Talking about the garden spurred discussions of sacred plants and Ysletan practices. After a few minutes, Montaña carefully pulled out a tissue with a plant in it. He unwrapped the tissue to show a plant that was small and hardy, clearly a desert plant. "I was at a reburial at the Guadalupe Mountains with some Apache and I noticed he was gathering this plant and I asked him, 'So you all use it for this and that?' and he

said ‘Yes, we use it too for the same thing,’” and I realized that although were once fighting with each other, we used many of the same things. And he said ‘We were attacked from all directions. . . . from the east, north, west, and Tigua from the south. . . . it was hard, but we survived and lived.’ So this is Macush, or Macushi. I don't know what the scientific name is, but it grows in the Guadalupe Mountains or at Hueco, way high in the mountains in the shade and at high altitude. Sometimes it’s called Indian tobacco. Maybe you can find out what it is called?” The next day I followed up with an ecologist and learned that the plant was probably *Nicotiana bigelovii, N. attenuata, or N. glauca*, though exact identification would be difficult without seeing the plant.

The grounds staff expanded the garden to nearly half an acre on the March 1 and 2, 2010. I learned this when I drove by the religious compound one day and saw Bear and other facilities staff tilling an area with a Bobcat, a multipurpose tool. I joined them and, after several exhausting hours, nearly half an acre was tilled. When we were done, Bear joked in a booming voice, “I think we’re gonna have a good harvest!”

Figure 49: A half acre of tilled soil. Photo by author.

Later that night I sketched out a plan for irrigation, and the facilities staff purchased the supplies. We returned on Friday to add furrows and dug a trench for PVP pipe from the canal to the garden. The next Monday, we extended the irrigation lines so the tribe could also irrigate the

dance grounds. As a cold front moved in, we worked to place the PVC pipe during what was likely the final cold snap, and I learned that the tribe had finally secured water rights.

When the weather warmed, we planted a variety of seeds, including corn, and irrigated the garden at least once every two weeks. By April we noticed that while some plants grew incredibly well, others were having trouble, and that the water pooled in some areas without draining. Freddie explained that he thought it was related to the old house. He recalled from his youth that with owners of old houses would put down clay each spring to refinish the floor, and that adobe benches were built outside and also covered with clay. He believed that this process took place year after year and might be impacting the soil. After taking some soil samples we learned the soil's acidity was very high, and we attempted to rectify the issue with natural components.

Figure 50: Corn growing near the kiva. Photo by author.

While irrigating on May 7, Bear and I talked about how hard the clay was and that it would take years of work to make this area into a good garden. "I'll bring leaves when we pick them up in the reservation and mix them in . . . that will help." Jokingly, he added, "I think we made it too big." The clay, combined with increasingly hot days, brought the garden to an early

end. By June 4 we harvested what we could and discussed improvements to make in the following years. Several months after I left the field, I called Bear and learned that discussions concerning the garden were continuing, and new soil might be added to the area following construction of a new building adjacent to the garden.

When I left the field I wrote a memo to the health department, providing suggestions for future activities. The garden was not planted the third year because of construction in the area, though there was continued interest in amending the soil. In April 16, 2013, the tribe planted a new raised-bed garden near the educational center in District 2 and is considering gardening activities that link health and education.

Conclusion

Religious pilgrimages, dancing, and gardening could serve as activities that meet the goals of the diabetes prevention program. Unlike the Olympic-sized pool and gym that were built by external contractors during the gaming era, these long-standing and significant activities are practiced and supported by community members in specific places.

Dances take place throughout the year, and individuals participate as dancers, chanters, cooks, or event staff. With an estimated 80 to 100 dancers currently participating year-round, and 100 to 200 individuals providing support in kitchens, cafeterias, or on the dance grounds, there is an opportunity to align the wellness goals of the diabetes program with activities that are already in place and accepted by the community.

The location of the dances and gardens is significant. Historically, Pueblo dance grounds were the center of communities, both literally and metaphorically. Houses surrounded the dance grounds and activities were practiced on them as governed by the agricultural calendar. Ysleta de Sur Pueblo, though an urban pueblo, also had this design prior to becoming urbanized. The Tuh-lah was, and still is, surrounded by tribally owned homes. However, when the tribe received federal recognition and HUD funding, the center of the Pueblo shifted from the dance grounds of the Barrios de los Tiguas to the Community Health Center. With that change, the central focus of wellness shifted from communal activities, such as religious pilgrimages or dancing on the agricultural calendar, to the individual-centered practice of biomedicine. However, the dance ground, what one member of the Pueblo grounds staff calls "the heart of the Pueblo," is still strong, and, if tied with diabetes prevention in a culturally sensate and appropriate manner, has the potential to support physical as well as spiritual wellness for generations to come.

Chapter 6: Case Studies in Diabetes Management and Prevention

Figure 51: Ribbon Dance at the All Indian Pueblo Council Inauguration.

Photo by author.

Individuals at Ysleta de Sur Pueblo are resilient and innovative when it comes to managing or preventing diabetes. Given the diversity of individuals in this study, from adults to elders and from enrolled members to tribal descendents, it is not surprising that a variety of practices have been developed to manage or prevent the disease. This chapter argues that in order for diabetes prevention to take hold in the community in a sustainable manner, a variety of programs and practices should be developed for the diverse populations at Ysleta del Sur Pueblo.

I present findings from the Knowledge, Attitudes, and Behavior survey I conducted during my research. This survey shows that individuals with diabetes have a greater knowledge of the disease, and that individuals who have completed diabetes education courses have a slightly greater knowledge of diabetes than individuals who

have not. This finding is significant because it implies that individuals learn about preventative measures for diabetes after they already have the disease.

I then present case studies of three age groups at the pueblo: young adults, adults, and elders. The perspectives represent a diversity of ages, genders, and enrollment status. Presented in summary form, the comments show the wide range of views and actions relating to diabetes prevention and management. Topics discussed include ideologies and diabetes-related beliefs of each group, pertinent food and exercise habits (including religious dancing and gardening), and the ways in which individuals engage with the health center.

I conclude with a presentation of programs and activities that were suggested by each population and discuss the implications of the diverse perspectives shared by the three populations.

Diabetes Knowledge, Attitudes, and Behavior Survey

I conducted a Knowledge, Attitude and Prevention (KAB) survey to investigate community perceptions about diabetes. The assessment of diabetes knowledge is a critical component for the prevention and management of diabetes because it provides a measure of how well individuals and groups understand diabetes (Umurungi, Mitchell, Gervais, Ubalijoro, & Kabarenzi, 2008).[73] Surveys such as this are popular among health professionals because they provide an assessment that can be implemented in the

[73] Other useful components include medical records, patient interviews, and patient histories.

community and interpreted by the health staff rapidly and with ease. This knowledge is then used in the development of diabetes education material.

I developed the KAB survey with input from the Maria, the supervisor of the Diabetes Program, and the Tribal Community Health Representatives. At the health staff's suggestion, I drafted preliminary survey questions based on KAB surveys implemented in other American Indian communities (Fitzgerald et al., 1998; Taylor et al., 2005). Maria and I then drafted additional culturally specific questions based on preliminary ethnographic interviews and field research. These questions, specific to Ysleta del Sur Pueblo, asked about the use of home remedies, local beliefs regarding diabetes, participants' participation in local diabetes education courses, frequency of use of tribal wellness facilities, and participation in religious activities. The Diabetes Program supervisor and Community Health Representatives reviewed the survey, suggested modifications, completed practice surveys to see how long it took and whether the questions were culturally appropriate, and approved it. The 46 questions in the final survey asked for consent (n=2), demographic information (n=6), and about general prevention (n=14), diabetes management (n=17), and questions specific to practices at Ysleta del Sur Pueblo (n=7).

The survey had two goals. First, the diabetes program wanted to see whether patients with diabetes had more knowledge about diabetes prevention and management than those who had not been diagnosed with diabetes. This question would help diabetes staff determine whether their patients were receiving the information they needed to manage the disease. Second, the staff wanted to know if

individuals who participate in diabetes education at the Community Health Center had greater knowledge of diabetes prevention and management practices than individuals who had not received any education. This information would be used to gain a preliminary sense of the impact of diabetes education programs at the Pueblo.

The survey was emailed to the adult community via an email list managed by the Tribal Records Office; paper copies available at the Community Health Center were given to key participants if they requested them. Forty-four adults, both enrolled members and tribal descendents, began the online survey. Ten of the forty-four surveys were removed from the analysis because less than 50% of the survey was completed, resulting in thirty-four completed surveys. Thirty (88.24%) respondents were tribally enrolled, 22 (64.71%) were women, and 24 (67.64%). were employed either full- or part-time. Most of the respondents were not diabetic (64.71%), and few had ever attended a class offered by the Pueblo's Diabetes Prevention Program (17.65%).

Table 1: Demographics of Knowledge, Attitudes, and Behavior Survey Respondents

	all	**not diabetic**	**type 2 diabetic**
	(*n*=34)	70.59 (*n*=24)	29% (*n*=10)
Women % (*n*)	64.71 (22)	75 (18)	40 (4)
Men % (*n*)	35.29 (12)	25 (6)	60 (6)
Age % (*n*)	-	-	-
18-30	17.65 (6)	20.83 (5)	10 (1)
31-40	32.35 (11)	41.67 (10)	10 (1)
41-50	29.41 (10)	20.83 (5)	50% (5)
51+	17.65 (6)	12.5 (3)	30 (3)
Tribal Affiliation % (*n*)			
Enrolled	88.24 (30)	87.5 (30)	90 (9)
Descendent	8.82 (3)	8.33 (3)	10 (10)
Employment Status % (n)			
Employed by Tribe	35.29 (12)	33.33 (8)	40 (4)
Employed by non-tribal business	35.29 (12)	37.50 (9)	30 (3)

	all	**not diabetic**	**type 2 diabetic**
Not employed	14.71 (5)	12.50 (3)	20 (2)
Other	14.71 (5)	16.67 (4)	10 (1)
Diabetes status % (*n*)	-	29.41 (22)	64.71(10)
Family history of diabetes	79.41 (27)	75 (18)	90 (9)
Has attended any diabetes classes	17.65 (6)	0 (0)	60 (6)

Because so few individuals completed the survey, the results are simply descriptive, and further research is required. As discussed in the preceding chapter, when the CHC adopts electronic medical records the staff will have the capability to review much of this data without needing to implement a survey because it is already being collected during patient visits. This will improve the quantitative data and provide a more rigorous database for analysis.

As might be expected, diabetic respondents generally scored higher than non-diabetic respondents. Diabetic respondents scored slightly higher than non-diabetic respondents for all questions (60.63% correct for diabetic respondents vs. 57.64% for non-diabetic respondents) and also scored higher than non-diabetic respondents on prevention questions (77.14% correct for diabetic respondents vs. 70.18% correct for non-diabetic respondents). Some of the health staff were surprised by the small difference in scores, and it indicates that patient education for diabetic individuals could be improved.

Diabetic respondents scored nearly the same as non-diabetic respondents on diabetes management questions (44.12% correct for diabetic respondents vs. 45.10% correct for non-diabetic respondents). This small difference, and the low overall knowledge of management practices, is important. First, individuals with diabetes

should be very knowledgeable about the management of their disease. The low number of correct answers indicates that more needs to be done to improve diabetes education. The poor knowledge of diabetes management among non-diabetics is a concern because many non-diabetics live with diabetic individuals, or may become diabetic themselves. It is important for non-diabetic individuals to understand diabetes management so they can support diabetic family members on a daily basis, and so they know what to do in a diabetic emergency.

Individuals who received diabetes education at the Pueblo showed only slightly more knowledge about diabetes management and prevention overall than patients who did not receive any diabetes education at the Pueblo (63.54% correct for education vs. 59.31% correct with no education). This calls into question the effectiveness of the diabetes education. However, the small sample size may be influencing the results.

The survey provides some insight into the knowledge, attitudes, and behaviors of individuals at the Pueblo regarding diabetes. The small number of respondents impacted the results of the survey and calls for further examination of these questions once computerized medical records are implemented. To complement the survey, interviews were conducted with participants and organized into case studies. These studies, discussed below, are more in-depth than the survey and provide greater detail regarding diabetes-related beliefs and practices at the Pueblo.

Case Studies

Ysleta del Sur Pueblo is a diverse community, both geographically and demographically, and I include these case studies because they provide greater detail

than the survey. I met each of the individuals at various activities at the Pueblo, or through snowball sampling, and invited them to participate in the study. The 18 adult participants discussed in the following analysis (Table 2) are a selection of the diverse population at the Pueblo, and while they are not statistically representative, patterns did emerge when the respondents are divided into three age categories: young adults, middle-aged adults, and elders. Six adults are in the age range of 18 to 30, seven are 31 to 50 years of age, and five are at least 60 years of age. These individuals are men and women who are either tribal descendents or enrolled members of the Pueblo. In most cases I attribute quotes to specific individuals (using pseudonyms), though in some instances the respondents remain anonymous.

Table 2: Demographics of the Individual Participants in the Case Studies

Name	Age	Gender	Enroll-ment†	Diabetic Status	Employment	Residence
Young Adults (*n*=6)						
Gabriel Garza	20	M	D	not	Pueblo/Part Time	family
Carla Romero	21	F	E	not	Pueblo/Part Time	family
Clara Ramsay	22	F	D	not	Pueblo/Part Time	family
Anthony Vargas	23	M	D	not	Pueblo/Part Time	single
Luna Guzman	25	F	E	not	Pueblo/Full Time	single
Luis Vargas	25	M	D	not	Pueblo/Full Time	single
Middle Aged Adults (*n*=7)						
Cecilia Delgado	31	F	E	pre-	Pueblo/Full Time	family
Alicia Montanez	36	F	E	not	Pueblo/Full Time	family
Emilio Martinez	39	M	E	type 2	Pueblo/Full Time	family
Nicole Avila	41	F	E	type 2	gestational	family

Diego Flores	50+	M	E	type 2	Pueblo/Full Time	family
Felix Barrera	50+	M	E	type 2	Pueblo/Full Time	family
Juan Ramsay	51	M	E	type 2	Off Reservation/ Full Time	family
Elders (*n*=5)						
Sebastián Salcedo	60+	M	E	type 2	Retired	family
Violeta Santos	70+	F	E	type 2	Retired	family
Jim Montano	60+	M	E	type 2	Retired	family
Eduardo Ramos	70+	M	E	type 2	Retired	family
Adrianna Tapia	70+	F	E	type 2	Retired	family

† D = descendent; E = enrolled

Young Adults

Six young adults, age 20 to 30, constitute the first set of participants. The three males and three females live on the reservation, though only two are enrolled members. Four of the individuals were in college either full- or part-time, and two worked full time for the Pueblo. They live either with their parents or alone in rented homes on the reservation. Only one has severe health issues, and none of them is diabetic.

Gabriel Garza (Tribal Descendent, Male, Age 20)

Gabriel is a tribal descendent of Anglo and Ysleta del Sur Pueblo ancestry. His great-grandfather served at Fort Bliss, where he met and married his wife, an Ysletan who sold supplies to the troops. Gabriel, now 20 years old, is not concerned about the legal designation of not being an enrolled member, but he does think it is an issue that descendents are not able to access the health center. Gabriel attends the University of Texas at El Paso (UTEP) full time and commutes from his home in District 1 to UTEP in

the morning, and from UTEP to his work in District 2 in the afternoon. Gabriel is not diabetic, though he has family members who have been diagnosed with type 2 diabetes.

Carla Romero (Enrolled, Non-Diabetic Female, Age 21)

Carla, an enrolled member of the Pueblo, is 21 years old and is completing an undergraduate degree at UTEP. Because Carla lives in District 2, it not easy for her to use public transportation to commute to school, so she regularly drives to and from campus. Carla drives to school at about 7:30am. After six hours of classes she drives back for her part-time work at the Pueblo's Education Program. Carla leaves the center at about 7:00pm, goes home for dinner, and finishes any homework for the following day. Carla does not have any known health issues. She is not diabetic, though she has many family members who have been diagnosed with type 2 diabetes. She participates in religious dancing and pilgrimages, and on occasion she walks or runs around the reservation.

Clara Ramsay (Tribal Descendent, Female, Age 22)

Clara is a 22-year-old tribal descendant and part-time employee with the Pueblo's afterschool program. Clara attends UTEP full time and is one year from completing her degree in nursing. Not surprisingly, she had a perfect score on the diabetes knowledge, attitudes, and behavior survey. After graduation, Clara would consider working for the Pueblo or conducting health research that benefits the community. Clara is not diabetic, though she has many family members who have been diagnosed with type 2 diabetes.

Anthony Vargas (Tribal Descendent, Male, Age 23)

Anthony, 23 years old, is a tribal descendent who observed but did not participate in the Pueblo's religious activities. Anthony lives in District 1 and works part-time at the Pueblo's Education Program on District 2 of the reservation while completing his third year of an undergraduate business degree at the University of Texas at El Paso. Anthony's score on the KAB test was nearly perfect; he explained that some of the questions were difficult but with some thought they were easy to figure out. Anthony does not have any known health issues, nor has he been diagnosed with type 2 diabetes.

Luna Guzman (Enrolled, Female, Age 25)

Luna is a 25-year-old enrolled member of the Pueblo who works full time in a tribal administrative department. Although Luna lives on the reservation, she only uses the Community Health Center when absolutely necessary, preferring instead to use off-reservation facilities. Luna participates in a wide variety of community activities, including religious dancing. She believes that community participation is an essential component of community life and that tribal leadership should encourage community members to participate regularly.

Luis Vargas (Tribal Descendent, Male, Age 25)

Luis, like his younger brother Anthony, is a tribal descendent. Luis, age 25, works for the Pueblo full time as a computer lab technician and Instructor and therefore has health insurance through the Pueblo and is able to use the health center. Luis is obese, pre-diabetic, and suffers from complications brought on by other health issues. Despite these health issues, he keeps a positive outlook on life. Luis chants at dances but does not dance or participate in pilgrimages.

Case Studies: Young Adults

The six young adults defined health in terms of lifestyle behaviors, both positive and negative. Individuals who engaged in positive behaviors such as eating foods that are low in fat and sugar, exercising daily, and not drinking alcohol were considered healthy. Being overweight or obese was recognized as a negative factor, and both Luis and Carla commented that they previously had lost, or would like to lose, weight.

These young adults are aware of diabetes because many of their parents or older family members have the disease. Clara, for example, has been around diabetics her entire life, and was recently diagnosed as pre-diabetic. She explains, "Diabetes just runs in the family. You can be the healthiest person and still get it. That's why I try to do my best to prevent it as much as possible." She remembers when she learned that her father was diagnosed with diabetes. "I was first in denial but he got out of the slump and said he was going to take care of himself. . . . My dad's a good example because, well, I think my dad is the perfect patient. He knows there are consequences to

diabetes and he just doesn't – I mean you see them all the time – you see people losing limbs or toes. He wants to stay as healthy as possible for us, his family."

The young adults had very detailed knowledge about the causes and the individual-oriented prevention practices of type 2 diabetes. Like the other individuals in this 18-30 age group, Anthony stated that type 2 diabetes "runs in the family and there are certain factors that contribute to having diabetes. . . . If it runs in the family, I guess it might be hereditary; also like I said dieting, exercising habits, all those have to do with it." Anthony believed preventing diabetes is an individual activity, though he acknowledges that families play a role. "It's really an individual choice that people have to make as far as exercise, dieting, and their weight to be able to prevent it." When asked if family or communities play a role in prevention, he explained,

> Family. . . maybe, I guess, balancing meals, family activities where everybody can exercise together. It could be sports or something that they do every weekend, some type of physical activity that gets everybody going and out together. That way the whole family becomes engaged and it's not just one person trying to change their eating and exercising habits while everybody continues to eat fast food, reintroducing that negative aspect and all those risk factors of getting diabetes.

All but one of the young adults was very critical of the Community Health Center and the services it offered. Gabriel, like other descendents, is not able to use the community health center because he is not an enrolled member. However, he explained that even if he could use it, he would not. Instead, he would continue to use other medical offices because they are more professional. "It's not really, to me it's not like a credible place to go. It's like a Rent-A-Center, rent-a-health center. . . . I figure that they're underfunded. I think places outside of here have more ability to test for, you

know . . . different things." Gabriel goes to Physicians Hospital, located four miles north of the reservation. He explains that the hospital is, in his opinion, a more legitimate practice because rather than being an all-in-one facility, it focuses on primary care. As he explained,

> [Here at the CHC the doctors] share the same facilities for everything. And over there it is just a doctors' office, just for doctors or visits or whatever. As opposed to "everything is kind of rolled in."

Anthony had a similar concern, but he thinks descendents such as himself should have access to the Community Health Center even if the facilities need improving. When asked if not having access is a concern, Anthony replied,

> Yeah, actually that's a concern because for the descendants that don't have insurance they're left likely to be going up and getting those doctor's visits, going up for their checkups to check their glucose levels, to check their cholesterol levels. The more time that they spend away from the doctor and continuing their bad eating habits, their dieting habits and their exercising habits, the less likely that they'll be aware of something early on to help them go ahead and make that transition and start to correct some of those things.

Clara is also very critical of the Community Health Center's practices, particularly patient privacy. She believes that non-compliance is a major problem at the Center and is perhaps a result of the privacy issues (see Chapter 4). She explains, "I guess people are afraid to go there also because if they go in there with some kind of problem it'll be in the tribe within an hour; like everybody will know. There's no confidentiality. You've seen it, everybody knows everybody's business!" Despite this issue, Clara believes that the Community Health Center can address this issue and in time improve on diabetes care by providing more awareness about the disease and by proving more community

education on primary and secondary prevention. She explained that the Community Health Center could provide more primary prevention by

> showing what diabetes is and what it can do to yourself, your body, and your family. Then secondary prevention like screenings and things of that nature, also the tertiary prevention where the people already have diabetes so they can treat the family members with the diabetes. Also teach the family members who don't have diabetes. Showing them this is what can possibly happen if you get it. Just teaching, because a lot of people are unaware of what diabetes is. They don't know the consequences or things that can happen.

Luis, a descendent, is able to access the center because he is a full-time employee and thus offered healthcare by the Pueblo's employment office. Though he uses the health center regularly, he questioned the advice of the medical staff. Speaking about the doctor's recommendations, he explained,

> Some of the stuff she has told me, it kind of contradicts with the stuff that I've read before, like in *Men's Health* and stuff like that. You know, like she was saying about Splenda, not to use it, which I would have thought Splenda would have been better because it's no calories, no bad stuff. But she said that because it's artificial or I mean, it's not artificial, or it has preservatives, something like that she was saying. So, I don't know, but her concept is to eat more protein, whereas in my men's health book that I have it says not to eat that much protein, because more than likely we're eating enough of it. So, you know what I'm saying? So, to tell you the truth, I'm not really following her stuff.

All six of these young adults engaged in individual-oriented prevention practices, though the degree to which they participate varies. All of the individuals believed that one key to prevention is keeping a disciplined schedule. Gabriel, for example, is a part-time student, tribal employee, and an amateur musician. He keeps a very organized schedule and believes that individual discipline is one of the ways to prevent diabetes. As he explained, a person must

> always [have] a good diet, [have] maybe seven to nine hours of sleep a night, and exercise maybe once a day. . . . I mean, if you're up and down and

> everything is happening last minute, you of course have no time to plan when you're going to eat. . . . Or, it's more like an impulsive thing, like, 'Oh, I'm just going to go to McDonald's' and, boom, that's it. This is opposed to when I have a break from so-and-so, maybe I have enough time to stop by home [and eat].

One of the young adults was also very critical of communal food that is provided by the Pueblo at secular events. Gabriel, for example, believes the type and quality of the food people eat is important. In a joking tone he explained that people get diabetes at the reservation because they excessive amounts of Mexican food.

> The Indians around here aren't really Indians. I think they're Indians immersed in the Mexican culture. I think the food has a lot to do with it. The typical Mexican dishes: enchiladas, tacos, and a beer. You know, everything is fried or greased up in some sort of lard. It's really unhealthy, and Mexicans like to eat in excess. The quality of the food is also a factor. Nowadays all the foods are so loaded with sugar that you don't even know, you know? You can buy an orange juice and you think it's freshly squeezed orange juice and it's packed with all this kinds of syrups and crazy stuff and it adds up to a bunch of sugar, man! It really does!

Luis expressed a similar concern about the food and added that that one of the most difficult challenges to eating healthier foods is cooking single-serving meals.

> One of my problems, too, I mean I would like to cook and stuff, more, but it — what sucks is that they sell like, now at the stores they sell everything like in bulk. Like, for families, you know? They really don't sell single people's food, you know? Like, single-portion food is the way I see it. So, like, when I do make spaghetti, I make too much. . . . And you see, I don't like doing that, because like, I end up having it go to waste. That's why, and then like say like with my macaroni and cheese shells, I mean I know they're really fattening. I've seen like on the box, and stuff, so I'll make the whole thing and just so, since I don't even have a microwave, you know? I don't really like food left over, I just end up eating it all. And, that's where a lot of my weight gain comes to.

Clara, more than the other young adults, manages to eat healthier foods. She defines being healthy as "exercising regularly and eating well." To do this, Clara does not eat a lot of beef, preferring instead to eat chicken breast, turkey burgers, and leafy

green salads. She rarely eats wheat, but when she does she prefers whole-wheat pastas, bread, and tortillas.

Lack of easily accessible forms of exercise was a barrier for diabetes prevention for these six young adults. Clara, Luis, Gabriel, and Anthony live in District 1 and stated that the gym, located in District 2, was far away. Carla, who lives District 2, indicated that while the gym was close to her home, the hours were limited and it closed early.

All of the young adults participate in non-tribal forms of exercise such as walking, running, or bicycle riding, yet they still believe that tribal practices are important activities. Younger tribal members, both enrolled and descendents, were the only individuals who indicated they exercised outdoors (excluding dancing) with any regularity. All of the young adults walked, ran, or rode mountain bikes. However, insufficient lighting and Montaña traffic acted as a barrier to regular participation in outdoor activities. Carla, for example, explained that District 2 is "dark and creepy at night" and thus does not walk around the reservation or to the gym, after dark. Luna, who lived off-reservation, did not use the facility.

Because a gym is not easily accessible, this group of young adults participates in other forms of activity. Gabriel prefers to ride a mountain bike for exercise, an increasingly popular activity at the reservation. Because he lives in District 1, it is easy for him to bike to public transportation, his preferred mode of transportation to school, or to ride canals to the border fence. He does not dance in religious cerremonies, though he has participated in other capacities, such as playing music.

Clara exercises daily and can be seen walking with family members in the evening, running laps around the Pueblo alone in the afternoon, or participating in religious dances and other religious activities. Dancing is particularly important for Clara, as she explained,

> I think of it as a form of health because for me I do it every year. You look forward to doing it and it keeps you healthy. Some of the elders have been doing it forever, for years and years, they look forward to doing it every year. I think health is like a state of well being. You have to be body, mind, and soul.

Clara also added that it is important that other individuals at the Pueblo dance because "it is an effort." She added, "Because many people are extremely out of shape, they should not be told not to dance, they should be supported." To support dancing, a popular activity at the Pueblo, Clara thinks the tribe should prepare people for the physical exertion of the dances and pilgrimages by setting up walks or runs a couple of days a week, and perhaps offer health screenings. This is important, she explains,

> Because there are people who dance who are not in the best shape who you think should—well everybody should prepare. I prepare myself for June 13th. Possibly setting up some walks/runs a few days out of the week, so that people can participate to get themselves healthier, but also preparing themselves for the big day. Also having maybe the doctors at CHC and Maria teach about diabetes and how to prevent it or how to take care of it.

To review, these six young adults have detailed knowledge about the causes and preventative measures of type 2 diabetes. This group is critical of the Community Health Center, and though most of them prefer to use medical services elsewhere, all of them think they should have access to tribal healthcare. This group recognizes and practices individual-oriented prevention practices such as running or riding bikes, however, they also see value in participating in religious dancing.

Middle Aged Adults: Age 31–60

I interviewed four male and three female middle-aged adults between the ages of 31 and 51 in this study. I came to know all of these adults while working at the Pueblo, and all volunteered to participate in interviews. All of the adults were enrolled members and were thus able to use the Community Health Center. All but one of the individuals was married, and all lived in family households. All of the adults were employed full-time, and all but one was employed on the reservation. Four of the individuals were diagnosed with diabetes; one had gestational diabetes, one was pre-diabetic, and one is not diabetic. All but one of the adults has multiple health issues.

Cecilia Delgado (Enrolled, Non-diabetic female, Age 31)

Cecilia is an enrolled member of the Pueblo and participates regularly in religious dances to the best of her physical ability. Cecilia, age 31, works full-time for the Elders' Center and may return to school to complete a college degree. The KAB survey was very difficult for Cecilia because the language was highly specialized and because many of the questions seemed like "trick questions." Cecilia is pre-diabetic and obese, and has begun to walk daily. She participates in religious dancing and pilgrimages to the best of her physical ability. Cecilia is single and lives with her family.

Alicia Montanez (Enrolled, Non-Diabetic Female, Age 36)

Alicia is an enrolled member of the Pueblo and works full-time in the Educational Center in District 2. Alicia is 36 years old, a single mother of two children, and in her

words, “very organized and keeps a quick moving schedule.” Alicia has a college degree and participates in religious dancing and pilgrimages. She works diligently to exercise daily, eat what she considers to be a healthy diet, and is not diabetic.

Emilio Martinez (Enrolled, Diabetic Male, Age 39)

Emilio is a 39-year-old enrolled member of the tribe who is very involved with tribal cultural programs and religious activities. He has been on the Tribal Council, served as governor, and held senior religious leadership positions. Emilio is married and has two children. Emilio does not want his children to become diabetic and encourages them to participate in various types of activities, whether religious dancing or organized sports. Emilio has a trade school degree, is completing his associate’s degree at a community college, and plans to continue at UTEP to earn his bachelor’s degree.

Nicole Avila (Enrolled, Gestational Diabetes, Age 41)

Nicole is an enrolled member of the Pueblo. At age 41, she does not have type 2 diabetes but because she had gestational diabetes during her two pregnancies, and because many of her relatives suffer from complications from type 2 diabetes, she wanted to support this diabetes prevention research and insisted on being interviewed. Nicole is very knowledgeable about diabetes and scored 91% correct on the survey. Nicole lives with her family and occasionally participates in religious activities at the Pueblo.

Diego Flores (Enrolled, Diabetic, Male, Age 50)

Diego is an enrolled member in his fifties. Prior to becoming a Community Health Representative, Mr. Flores worked for the tribe in many capacities, including as tribal governor. Diego is methodological in his work and, as a diabetic himself, believes that he should be a strong and positive example. Diego lives at home with his wife, a Navajo woman; his two children are in college or working full time.

Felix Barrera (Enrolled, Diabetic, Male, 50)

Felix Barrera is an enrolled member of the Pueblo and has had type 2 diabetes for well over a decade. Felix works for the Pueblo's maintenance office and can be found working just about anywhere on the reservation. Because he works in a physically demanding job, he has to test his blood sugar level often throughout the day. Felix assists with preparations for religious activities and occasionally chants.

Juan Ramsay (Enrolled, Diabetic, Male, Age 51)

Juan is an enrolled member of the Pueblo. He is 51 and married to a Latina, so his children (including Clara, a participant in this study) are tribal descendents. Juan works for the City of El Paso's Public Facilities, where he manages irrigation canals off the reservation. Juan has type-2 diabetes, manages it very well, and earned a perfect score on the diabetes knowledge, attitudes, and behavior survey. Juan is dedicated to managing his diabetes; he regularly takes his lunch to work so he can eat a healthier meal, which is often a challenge in his workplace.

Case Studies: Middle-Aged Adults

All of the adults explained that they believe individuals are generally healthy in their youth or as young adults, but as they get older they begin to eat less healthy food. Cecilia, for example, believes that individuals are "born healthy," but during their early teen years they start to eat junk food and snacks and eventually get diabetes. As people enter their twenties they start going out more and do not exercise as much. Then, by their forties, everything "starts to go downhill," and that is the age group when you begin to see individuals being diagnosed with diabetes.

Figure 52: Enchilada fundraiser plate. Photo by author.

When asked if diabetes could be prevented or delayed, Sonya responded that she can't delay diabetes because she is "lazy," a term used primarily by young adults, and then replaced her answer with "genes [are] why people get diabetes." Cecilia, like three other middle aged adults, had a fatalistic view of diabetes, stating that everyone at the Pueblo will become diabetic and that she "can only think of a few elders that don't have diabetes."

All of the adults were aware of complications associated with diabetes, though some individuals were confused about types of diabetes diagnosis, including pre-diabetes. This confusion also translated into fear of

diabetes. As one individual explained, “I’d say if they put you on insulin, that’s it. You’re dying.”

All but two of the adults said they are currently in control of their diabetes or pre-diabetes because they visit the doctor quarterly, test their blood sugar levels multiple times throughout the day, and are careful with their sugar intake. The individuals with type 2 diabetes explained that such control did not come quickly; it took years to learn how to manage the disease. When Emilio was first diagnosed with diabetes, for example, he was given Avandament,[74] but after a year and a half on the drug his body was rejecting it. Now, he feels he has his diabetes under control.

> After a while I started getting the shakes. I didn't know why. My blood sugar was . . . well, the medicine was too strong. I felt bad like I was eating and eating, trying to get my blood sugar up. So I changed doctors and now I'm on small dose . . . 15 mg in the morning, but I've got to check my blood sugars at least three times a day.

This age group critiqued the food offered at community events, arguing that more healthy options could be made available. Nicole, for example, believes the Pueblo’s leadership can slowly improve local diets by introducing foods that are lower in fat, carbohydrates, and salt at tribally sponsored events. Nicole explained that at the employee luncheon she pushed for a new menu with options that were lower in fat, stating,

> Right away everybody was saying *chili colorado* (red chile) and gorditas. See, I'm not used to that for lunch, so I opened my mouth and I said “Come on, it's lunch.

[74] Avandament is a mixture of metformin and rosiglitazone, two oral diabetes medications that help regulate blood sugar levels. Avandament decreases the amount of sugar that the liver produces and the intestines absorb while making the body more sensitive to naturally produced insulin.

> Why can't we have a croissant, a salad, some fruit, something like that?" I suggested sandwiches because it's lunch, a light lunch. Everybody was like "you know [makes a scolding look]." Then Virginia came up with a option with veggies. This was at the beginning so people weren't speaking out so much. Everybody was more quiet. Then when she showed us a picture of what we'd get, everybody was like "Oh, yeah. That looks really good."

Frequency and type of exercise varies greatly with this population. Alicia, unlike the other participants, prefers to exercise off-reservation in group classes. As she explained, she now exercises daily, a "must-do" activity, because she was once overweight and feared her gestational diabetes would become type 2 diabetes. She practices Zumba and occasionally lifts weights or runs on a treadmill. She explained that keeping physically active is difficult, but her family supports her. "The hardest part," she states, "is juggling a family schedule." Alicia explained that her family often picks up her children so she can leave work at 6:00 and make it to the final Zumba class. When her children have afterschool activities she resorts to last-minute arrangements. For example, Alicia once asked her child's softball coach if it would it be OK if she left her daughter at the softball practice while she went to the gym, a practice that is frowned upon by the coaching staff. As she explained, "I didn't want to, but I had to work out."

In stark contrast to Alicia, Cecilia does not use the Wellness Center because the drive back from District 2 is "long and boring." Cecilia participated in religious dancing for the first time in a long time, in 2010. As she explained, "I haven't danced in years. We'll have to see how it goes," referring to the physical demands of dancing. "It's hard because of all the running that happens there. Then you're dancing from 6:00am to 6:00pm. It's been such a long time since I danced, but I liked it." Sonya said she dances because, "it makes me feel proud, but the running is going to be really hard. " "I think

we did at least 12 last year," she said referring to the various formations that require sprinting.

Other adults participate in dancing because, as Emilio explained, practices are "starting to come back." Discussing his role in the tribal renaissance that is underway, he explained,

> In fact, I'm working on a Buffalo song. . . . A buffalo chant is, to me anyway, a chant . . . my people used to honor the buffalo because when people got here in late 1680 until about 1780, about 100 years, there were buffalo. They just had to travel maybe 100 miles to the north to hunt buffalo. The reason we know that is we have a traditional ceremonial mask that is made from buffalo. . . . And in honoring the buffalo, we honor them with a song and in return he gives us ceremonial objects, I guess. Then we kind of honor him for sacrificing himself for the good of the whole Pueblo.
>
> I honor that through my songs; I sing my son the songs, and the old chants, because when I was small, younger, I used to dance for the feasts, religiously, every dance since I can remember, since I was about maybe 10 years old. I was very healthy, very fit. When diabetes came along, I'm like, "What?" I'd kind of gotten away from that, you know what I mean? So I'm teaching my son now: "You've got to dance, stay fit."

Many adults think that the community members would be healthier if they participated in religious activities. Speaking about the physical demands of dancing, Emilio explained,

> The Salida, the Fiesta, it's everything. It drains from the dancer to the elderly, the Mayordomo, everybody, it's a community event. Plus, not to mention the other small dances that we have. There's 12 dances throughout the year. We've got to stay fit, we've got to stay healthy, you've got to take care of yourself.

Emilio explained that individuals have the opportunity to participate in a variety of activities other than dancing. For example, in the two weeks leading up to the fiesta, a vast number of preparations must be completed, from cleaning the grounds and buildings to gathering mesquite wood for the ovens to preparing and cooking food for

everyone. The activities, as I learned, are physically demanding. To prepare for the dances, for example, Emilio suggests exercising regularly before the events.

Figure 53: Baking bread in an horno. Photo by author.

"[You have to be healthy in mind and body] because if you're not, you get sick out there. I've seen a lot of people, like, 'I don't worry, I'm not gonna walk [to get in shape],'. . . and they just dance the day of the feast, and BOOM, they are overheating.

To review, middle-aged adults have mixed awareness of the causes and preventative measures of type 2 diabetes. While the five individuals with type 2 diabetes generally had detailed knowledge, they believe that the knowledge was acquired after years of having the disease, implying, along with the survey results, that the Community Health Center can do more to educate newly diagnosed patients. Middle-age adults are also not exercising daily, a requirement for individuals with diabetes, or for those who wish to prevent the disease. Busy schedules, particularly among full-time working parents, are not conducive to exercise. Religious activates are an outlet for exercise, though these activities are not performed daily, and supporting activities, such as walking or dance practice groups, could provide additional outlets for exercise.

Elders: Age 61 and older

In the following section I draw from interactions and interviews with five elders. I met all of the elders at diabetes classes held at the Elders' Center. All are enrolled members of the Pueblo, and thus are eligible for the programs offered by the health center, and all have type 2 diabetes. All of the individuals are retired and live on a variety of personal or governmental retirement funds. All of the individuals live either with spouses or immediate family.

Eduardo Ramos (Enrolled, Diabetic, Male, Late 60s)

Eduardo lives with his spouse. He is an active participant in the Pueblo's Religious Council and participates in religious activities by providing guidance and support. Eduardo has been diabetic for "many years," and while he manages to control it most of the time, he occasionally has severe spikes in his blood sugar. Eduardo attends diabetes classes and outings, mainly for the social interactions, though he does believe that they are useful and necessary.

Jim Montano (Enrolled, Diabetic, Male, Late 60s)

Jim is a respected elder who lives at home with his spouse. Although it is rumored that Jim was diagnosed with type 2 diabetes several years ago, only recently has he acknowledged it. Jim does not participate in health education programs at the Community Health Center but he does utilize the dental and optometry services. Jim is

very active in religious events, and while he does not dance or sing, he leads cooking activities.

Adrianna Tapia (Enrolled, Diabetic, Female, Late 60s)

Adrianna lives alone, though she does have family who support and visit her. Adrianna was recently diagnosed with type 2 diabetes and is having difficulty managing it, in part because she has difficulty walking due to chronic knee pain. Adrianna uses the services at the Community Health Center regularly and enjoys attending the diabetes educational workshops, especially since they provide an opportunity for her to socialize with other elders.

Violeta Santos (Enrolled, Diabetic, Female, early 70s)

Violeta is an enrolled elder with type 2 diabetes. Violeta is in her sixties and was diagnosed with diabetes several months before we talked, and she is struggling to manage it. Violeta, a former teacher and artist, now teaches ceramics for the Pueblo's afterschool program. As she explained to her students in an afterschool session, "to be a good artist you need to take care of yourself. You can't hold a paintbrush or roll clay if you are not healthy."

Sebastián Salcedo (Enrolled, Diabetic, Male, Late 60s)

Sebastián is an enrolled elder who lives-off reservation with his spouse. Sebastián previously served as a member of the Tribal Council and is involved with many

of the current activities for elders. Now in his mid sixties, Sebastián has type 2 diabetes and does a very good job managing it. He agreed to participate in the study as long as it would benefit the Tribe in some way.

Case Studies: Elders

All of the elders in this study are diabetic. Many of the elders showed remorse about their diabetes diagnosis, lamenting that the greatest difficulty is the loss of independence. As explained by one elder,

> Some of the elders really came down hard with the diabetes stuff this year. [The doctors] tell us to be careful with our feet, and I just got a foot fungus. I went to a podiatrist and he gave me some ointment. It's so awful; we are no longer independent. You are going along and WHAMO!.

When asked to expand on the reaction to diagnosis, this individual explained that they immediately reflect on their past.

> Then you try and back track and think about what you did, what you might have done to cause it. You try and find what you did that may have caused it. You just don't know how serious this is until it hits you. You know, diabetes is a myriad of things. It's all sorts of things . . . watch your feet, keep them dry, cover them, wear socks always . . . and then all of a sudden, a fungus. You know, I think we all have to go to Lourdes for a dip in the holy water.

While some elders look back on their diagnosis with regret and thoughts of what they could have done differently, others ignore it. Jim, like other elders I encountered at the Pueblo, ignored his diagnosis. Jim was diagnosed with type 2 diabetes before I started my fieldwork, and for nearly two years he did not disclose it during interviews. To my surprise, during one impromptu visit to his home, Jim went to his room and came back with a glucometer, asking me "How long do these batteries last?" before using it for the

first time. After explaining this event with Maria, I was told that many individuals at the Pueblo choose to ignore their diagnosis.

After the shock subsides, many of the elders find solace in the Diabetes Prevention Program. Sebastián was one of two men who participated in weekly Healthy Living classes hosted by Maria. Sebastián enjoyed attending the classes; he goes for a snack and to socialize. While discussing a course that I helped organize, Sebastián explained, "You teach us a little bit here and there, you and Maria, and how to eat healthy, and different diabetes tips."

Sebastián is concerned about the health and wellness of other males at the Pueblo, and he regularly mentioned that tribal men need to take care of their diabetes, stating, "There are two men that participated! Only two! Men have heart attacks too and get diabetes too, and men can die too—why aren't more men here?"

Photo 2: Kneading bread for the Fiesta. Photo by author.

Sebastián thinks that over the years the classes have become shorter and are held less frequently. "Maria used to teach and have these classes every week. Then she started having them every other week, then not so often. Sometimes they were every Wednesday, then sometimes they weren't, but the scheduling was difficult."

Sebastián lives off-reservation and is surprised that more individuals from the reservation do not attend the classes. “It's not so easy for me to get to the Pueblo from where I live, but some people live very close and are not attending,” he stated. He explained that his sister lives on the reservation but never attends the classes. “She's diabetic, hugely non-compliant with her diabetes, and is not in very good shape.”

Like Sebastián, Violeta stated that the Pueblo can do more to support health education at the Pueblo, including adding herbal remedies and traditional healing to the educational classes. “All tribes use herbs for healing,” Violeta stated numerous times in interviews, mirroring comments by other elders.

Adrianna, like the other elders who live on the reservation, walks around the reservation regularly, though at times it is difficult because of high or low temperatures, or because her joints ache. Finding appropriate exercise for the elders is a challenge, and according to the health staff, unlike the elders that participated in interviews, most do not get out of their homes enough and are not getting enough daily activity.

All of the elders in this group participate regularly in religious activities, though given their physical limitations they now focus on food preparation rather than dancing. Though less strenuous than dancing, the food preparation activities are good sources of exercise, particularly for adults who have arthritis. Kneading bread dough make with 25 lbs of flour, for example, can take upwards of 15 minutes and requires non-stop motion. Many of the elders enjoy activities such as these and believe they are important duties.

To review, many elders at Ysleta del Sur Pueblo have diabetes and regret the loss of independence once they are diagnosed with the disease. Some elders participate in

the Diabetes Education classes, and among those that attend there is a sense that other elders from throughout the tribal community should participate as well. Many elders also participate in food preparation for religious events, believing they are a good source of age-appropriate physical activity while also an important duty that must be served in the community.

Conclusion

The residents at Pueblo at Ysleta del Sur are a diverse population and as such, programs for diabetes prevention and care should reflect the diversity. The variety of perspectives regarding knowledge about diabetes, the ways to prevent or manage it, and the possibilities for new programs highlights the difficulty diabetes programs face when considering new directions. The different groups in this study – young adults, adults, and elders – provide a starting point from which to consider new programs.

The six young adults in this study were either descendents or enrolled members. Because enrollment status is required to use the health center's services, not all of the individuals can access the Community Health Center. The young adults worked at least part-time, attended college, and with one exception did not have serious health issues. These individuals were aware of individual-oriented approaches to diabetes prevention, including contemporary forms of exercise such as bicycle riding, yet they also see value in participating in religious dancing. These individuals are also more critical of the services offered on the reservation, and as discussed in the conclusion, they offered many suggestions for new wellness programs.

The seven middle-aged adults were all enrolled members and thus were able to access the Community Health Center. All but one of the individuals was married and lived in a family household. All were employed full-time and only one did not have diabetes. These adults had mixed knowledge about diabetes and prevention, as well as the causes of type 2 diabetes, indicating that the Community Health Center might want to provide additional patient education. This group also had difficulty eating foods that were lower in fat and did not exercise regularly because they had successfully coordinated these activities with their work schedules and parenting responsibilities. Unlike the young adults, this group was more engaged in religious activities and strongly believed participation in these activities may provide a route to better health.

The five elders in this study were all enrolled members, had diabetes, and regularly used the Community Health Center. In addition to using the primary care services, the elders regularly attended diabetes workshops, including the Healthy Living Workshop discussed in Chapter 4. These individuals live on a variety of retirement and government-support funds, such as social security. All of the individuals live with spouses or immediate family. This population participates regularly in religious activities, usually assisting with food preparation, and may benefit from additional age-appropriate nutritional education and physical activity programs.

The differing perceptions and practices of various age groups at the Pueblo indicate that different groups have different needs and perspectives regarding diabetes prevention and wellness. While the small sample in this study is not representative of the community, the case studies do indicate that rather than providing a single diabetes

education program for all individuals at the Pueblo, different groups of people have different needs and issues. Tailoring activities to these groups, as a start, may have a greater impact on diabetes management and prevention.

CHAPTER 7: CONCLUSION

Type 2 diabetes is a serious public health concern for American Indians as well as the general US population. As explained in the introduction, individual-oriented biomedical care/prevention models are necessary for management of type 2 diabetes. And while individual-oriented biomedical approaches are important, this dissertation argues that researchers should also consider community-specific emergent models of prevention. As Ferreria and Lang explain, we need to examine "the diabetes epidemic with a broader semantic domain that extends well beyond the narrowly defined biologic and genetic condition into the realms of social relations, history, and the politics of Indigenous identity" (2006, p. 16). In doing so, diabetes prevention efforts become culturally specific and, potentially, more effective. Shifting along the research spectrum from individual-oriented biomedical models to culturally-embedded models to emergent models will not be easy as researchers will need to examine local cultural practices and select those that may prove suitable for integration with diabetes prevention programs. Community gardens have been harnessed in this emergent model, and undoubtedly countless other activities are culturally significant in American Indian and Alaska Native tribes and would be useful in this regard.

As researchers shift to consider local practices, care must be taken to recognize the historical political-economic conditions that set the stage for the present-day diabetes pandemic. Chapter 3 explored the history of Ysleta del Sur Pueblo and argued that five separate epochs from 1680 to the present impacted diabetes prevention and management. Drawing upon the historical and archival record, I showed how each

epoch contributed to the changing economy and, as a result, changes to diet and exercise. In epoch I, Dislocation and Resettlement (1680-1847), removal from the ancestral land was arguably the greatest factor impacting the native peoples of Ysleta because it forever shifted tribal relations, knowledge surrounding food and agricultural practices, and sovereign identity. Although the residents of the Pueblo were able to adjust to their new setting, the dislocation has continued to impact them to the present. In epoch II, Land Loss and Changing Food Practices (1848-1959), international affairs between the U.S. and Mexico resulted in the loss of tribal agricultural land, and a shift from an agricultural economy in the mid 1800s to wage labor in the early 1900s. As a result, the native food practices diminished while tribal members endured economic hardship. In epoch III, Federal Recognition (1960-1992), I examine the Pueblo's unique recognition process and explore how political movement and strategies deployed by Pueblo leadership affirmed its sovereignty, even though it may have hindered securing the business partnerships that would enhance local economic efforts. In epoch IV, Gaming Era of Boom and Bust (1993-2002), I show how the development of a casino in 1993 brought a boom in income, and subsequently a dramatic scaling back of services following its forced closure by the state of Texas. In epoch V, the Post-Gaming Era (2003-present), I examine how the tribe is actively revitalizing tribal practices and enhancing intertribal relations, offering new economic development opportunities, building appropriate housing, and developing locally accepted health programs.

The circumstances of this tribe's dislocation and subsequent epochs were unique to the community, but the act of dislocation and impact on diabetes is likely a shared

experience by other American Indian and Alaska Native tribes. By focusing on the dislocation, and the lasting impacts in the subsequent years, tribal and academic scholars are better prepared to understand how dislocation impacts health and wellness and what must be done to counter the impacts.

Shifting from the tribe's political-economic history to the present day, this research examined diabetes prevention and management practices at the Community Health Center. Since it opened its doors in 1992 the CHC has expanded to a staff of 25, 11 of whom directly or indirectly address diabetes prevention and management. Focused on individual models of care, the health center faces many challenges, including various issues regarding patient non-compliance, concerns about patient privacy, coordination of programs on a "checkerboard" reservation, staffing issues such as stress, and mixed health messages.

Although there are challenges, several experimental programs initiated during research described here may prove beneficial for future prevention efforts if they are reinstated as ongoing programs. The weekly Health Living Diabetes Workshop for adults and elders showed how local cultural practices, such as gardening, could be integrated into an individual-oriented curriculum. The preschool workshop for parents, also the first of its kind at the Pueblo, taught new parents to make healthy snacks that can be kept on hand. The salsa garden and related activities for tribal youth in the afterschool programs were well received and provided an age-appropriate setting for diabetes educators to work with youth. Finally, the teen nutritional workshop served dual

purposes: it helped the staff learn what junk foods tribal youth were eating and provided an age-appropriate way to discuss healthy food options with tribal teens.

While individual-oriented biomedical programs are useful and necessary for diabetes care and prevention, it is likely that emerging community-oriented models will provide enhanced possibilities for prevention and care. Many religious activities at Ysleta del Sur Pueblo are practiced across age groups and could become successful components of diabetes prevention programs because they resonate with local ideologies concerning health and wellness while still meeting the biomedical requirements for type 2 diabetes prevention. Unlike the swimming pool and gymnasium that were built during the casino era and did not resonate with community members, religious pilgrimages, dancing, and gardening do resonate with the community. These activities could link with the goals of the diabetes prevention program in manner that respects their religious foundation while also meeting the aims of diabetes prevention.

The final chapter of the dissertation recognized the diversity of members at Ysleta del Sur Pueblo and argued that in order for diabetes prevention to take hold in the community in a sustainable manner, a variety of programs and practices should be developed. A diabetes knowledge, attitudes, and prevention study showed that individuals who completed diabetes educational programs had greater knowledge about the disease than those who did not. Though the sample size was small, the survey did show some impact, and future research by the diabetes program could expand on this finding. This chapter also showed that each of the different populations in the study –

young adults, middle-aged adults, and elders – had different ways to prevent or manage diabetes and, as such, are likely to participate in different wellness activities.

When considered in unison, the chapters in this dissertation speak to the complexity of diabetes prevention and management at Ysleta de Sur Pueblo. The history of the community set the stage for type 2 diabetes. However, present-day activities in the community health center and throughout the tribal community have the potential to challenge the lasting impact of the disease. As I discuss below, the Pueblo is already making changes that will likely improve the health and wellness of the community, and additional changes will likely support these efforts.

Pueblo-Driven Changes and Recommendations

The Pueblo began making changes to health programs well before I left the field in August 2010. In a series of sweeping events, the leadership at the Pueblo initiated changes to the health facilities, staff, and associated programs. In recognition that the facilities at the Pueblo were not providing the privacy needed to address community health, the Pueblo completely remodeled the health center to accommodate privacy concerns. As explained during a tour by a new member of the staff, when a patient walks into the center they are now greeted by a receptionist and wait in a dedicated waiting room. And when guests arrive they must check in and out with the receptionist and wear a visitor's pass, a sign that privacy is taken seriously, even with a prior volunteer such as me.

When a staff member is ready to see patients, a nurse escorts them to a specific examination room, closes the door, and marks the door with a flag that indicates a

patient is in the room, a standard practice in the healthcare industry. With this set-up, patients only see each other in the waiting room, ensuring that their privacy is protected as much as possible. Other changes made during the remodel include shared offices to encourage discussion between health staff, additional rooms for patient education, and a laboratory. Rather than having separate offices, the diabetes program supervisor and her staff now share a large space so they can more easily discuss patient care. Furthermore, when blood sugar tests and screenings are requested, trained staff is on-hand to draw blood and screen it in-house. For more complex lab work, blood and urine samples are picked up twice a day by a local laboratory and records are delivered electronically to the center.

To complement the redesign of the health center, several changes have been made to the structure and number of the health staff. The Tribal Council removed the most recent director of the health center, and for the time being an interim director is managing expansion of the center and operations. The acting director is exploring ways to offer additional training for the staff and is hiring new individuals to lead and develop programs. A partnership with Texas Tech Medical Center - El Paso ensures that two doctors and two medical residents are available daily, and other support staff have been hired by the Tribal Council to oversee case management, outreach, and additional social services. According to a regional staffer in the Indian Health Service, the improvements to case management are among the best in the Southwest.

Finally, to improve the tracking of patients and community health, the Community Health Center is implementing use of electronic medical records. All staff

members are completing training in the use of electronic medical records, including associated HIPPA regulations for how to use and access the records. With electronic medical records in place, the Diabetes Program is now tracking meetings with individual patients with the assistance of wireless tablets and database management software. The staff anticipates that once the electronic records are completely implemented, patient case management will continue to improve. Furthermore, the electronic records will allow real-time community-wide analysis of specific health issues, greatly enhancing the CHC's ability to track health indicators or to work with researchers on specific health issues.

The improvements at the Community Health Center provide an opportunity for the tribal members to receive regular primary care. The remodeling of the facility and the addition of electronic medical records have made it possible for the center to improve care management while ensuring patient privacy.

Considerations for Improved Community Health Services

The Pueblo can do more to improve diabetes prevention and care. As the number of enrolled members at the Pueblo continues to increase, the health center must also scale up to meet the needs of the community. The staffing requirements at the health center will need to expand and salaries will need to improve so they are competitive. Given recent trends in staff turnover, particularly in senior positions, the tribe may wish to explore enhanced recruitment strategies. Along with increasing the number of full-time staff, the tribe will likely need to build a larger heath center to accommodate more patients, as the current building is small. Furthermore, while the

remodel greatly improved operations, the present layout makes bridging and coordination of primary care services and social services potentially challenging.

It is important and relatively easy for the Pueblo to enhance the facilities and biomedical health services. A healthcare consulting firm could work with the Pueblo to learn more about community needs and project the costs for expanded services. What are more difficult to address, I argue, are the healthcare practices that are impacted by local cultural knowledge and beliefs.

Operations may improve with the inclusion of indigenous staff at senior levels. This is a sensitive topic, and the staff may wish to conduct a team climate inventory (Anderson & West, 1998) to investigate whether the health care teams are communicating effectively. Furthermore, the Community Health Center may wish to add a health service research position to examine health trends, liaise with external researchers, assist with grant writing, and design community-specific health interventions, such as the ones developed during this research. To provide guidance and input from the tribal community, the Community Health Center may wish to develop a Health Center Advisory Group or Health Center Community Board composed of 6-10 individuals who are interested in improving community health practices. Community boards can provide useful information regarding patent care and may also engage the community in long-term health planning efforts (Bruna-Lewis, Cacari-Stone, Wilger, Cantor, & Guzman, 2014).

New programs were introduced in this dissertation research, including educational health programs for tribal youth and adults. With proper funding and

planning, these programs could become regular activities with positive, long-term impacts. This research showed that sub-populations in the community enjoy participating in different types of exercise, and the tribal health staff could meet with these groups to develop targeted activities for each group.

Many health issues other than diabetes impact the reservation. Obesity continues to become more prevalent and is likely causing other health problems. Community Health Representatives and primary care providers may wish develop nutrition-centered patient education initiatives. To support weight loss programs, tribal housing and grounds could explore ways to make fresh and affordable produce available in the community, including sales from produce trucks or hosting a local market.

Smoking negatively impacts diabetes and causes many health issues, including cancer, and the Pueblo can do more to prevent smoking on the reservation. Though the Smoke Shop is a source of income for the tribe, it sends a mixed message to tribal youth. Furthermore, the casino, now an entertainment center, still allows smoking on-site, likely impacting the health and wellness of casino employees.

Confidentially and privacy, though greatly improved with the remodel of the center, still need to be aggressively addressed within the community. Internally, the CHC leadership can work to train staff on HIPPA regulations while also limiting access to electronic medical records. At the same time, the staff could embark on a community media campaign that informs patients about the changes at the CHC and about their rights as patients. A local campaign, perhaps using a poster of a tribal member and the

tribal doctor in an exam room with the text “HIPPA means the CHC respects my privacy,” may begin to improve understanding of privacy issues.

It may also prove worthwhile for the Community Health Center to explore expanding hours to evenings and Saturdays so individuals with full-time jobs can utilize the services and educational programs. This may prove particularly beneficial for health education programs, which are currently available only on weekdays after lunch.

Finally, the issue of descendents and care is one that is particularly challenging. Descendents are members of the tribal community; they live and work in the community, and participate in local activities. However, because of their enrollment status they are not allowed to access any healthcare services. It is likely that the health of individuals is lowered because they are unable to access medical services, and this is potentially minimizing the impact of health education messages to mixed-enrollment families. By welcoming descendents into prevention activities, at a minimum, long-term wellness efforts might improve.

In addition to my recommendations for changes at the Community Health Center, participants in this research provided a variety of generationally specific recommendations. Given the built environment and community practices, individuals in this study gave numerous suggestions for programs and practices to make it easier for patients to exercise and make healthier food options. Young adults and elders both suggested that the Community Health Center could offer cooking classes to meet their specific needs. Young adults asked for classes that focused on cooking single-serving

foods, while elders asked for classes that taught how to modify meals to make them low in sodium and fat.

Young adults and adults both suggested that they would be more likely to use a gym if one were located in each Pueblo district, and if a variety of classes were offered to tribal members. To support the gyms, young adults suggested the Pueblo organize outdoor activities twice a month so participants could hike, mountain bike, kayak, or rock climb. Young adults, in particular, were willing to pay a small fee to support each event. Young adults also suggested building a mountain biking trail that connected the two reservations, the local canals, and the border fence. To support this they also suggested the Economic Development Office develop a small bike shop that could be run by tribal youth. Individuals from all age groups suggested regular walking groups as a way to help individuals get in shape before religious dances and pilgrimages. To supplement the walking groups, CHRs could offer regular foot exams and provide nutritional counseling. Finally, individuals from all age groups suggested providing different food options at secular events. Having less fatty foods, one individual suggested, would provide an example for others to learn from.

The Ysleta del Sur Pueblo Community Health Center has expanded over the years to become one of the largest departments at the Pueblo. One of the strengths of the center is its ability to regularly adapt and expand to new circumstances. In the coming years it is likely to become one of the exemplary departments on the reservation.

Implications of Research for American Indian Communities and Anthropology

This dissertation directly connects with broader debates in anthropology regarding health research with native peoples as well as long-standing topics in anthropology. As an anthropological study of type 2 diabetes, this research questioned who, how, and where we discuss diabetes. Rather than focus on biomedical studies that exclusively address medical professionals and patients within a clinical setting, this research moved outside the clinic to include staff who are not usually considered in health studies: grounds staff, tribal leaders, and religious leaders. By including these individuals the research explored new topics and shed light on new and potentially effective means to prevent diabetes.

In addition to incorporating populations that are usually not included in diabetes prevention research, this research utilized a new set of research technologies. Rather than focusing on glucometers, testing strips, and pedometers, this research drew on traditional religious knowledge, shovels, and irrigation pumps. These research technologies may fall out of the skill set of most researchers, but by not shying away from them, I had the opportunity to form partnerships with the individuals who used them and move the research in a potentially more useful direction.

In part because of the new research partners and new research tools, new and novel diabetes prevention programs may develop at Ysleta del Sur Pueblo and may serve as a model for other tribes. The next challenge for the tribal health center is to change tribal health policies and internal structural practices that may deter innovative health programs. While the tribal has funding sources for diabetes education, there is a

tendency to isolate and ”silo” programs across the reservation. This may hinder new diabetes education programs, particularly if they shift outside the clinic and link with religious or economic development programs, each of which has separate budgets. My hope is that with concerted effort, medical discourses and structures can become permeable so they can incorporate community knowledge and practices.

Finally, as healthcare practices shift from the health centers to the community, care must be taken to safeguard that healthcare policies do not overstep their boundaries regarding privacy or in regards to religious practices. For example, healthcare practices are increasingly moving towards preventative care, especially following enactment of the Patient Protection and Affordable Care Act (2010). As prevention becomes more prominent in community life, it may be beneficial for the CHC to approach new community programs, particularly those that link prevention efforts to religious practices, cautiously and with regular input from tribal and religious leaders.

This dissertation contributes to scholarly work regarding the Southwestern Pueblos by reopening professional relationships. Research with Pueblos has slowed in recent decades, undoubtedly because of concerns regarding the disclosure of traditional knowledge. In contrast to some previous research (including some studies conducted at Ysleta del Sur Pueblo), I approached this project as a partnership between the Pueblo and myself. I began by recognizing that the Pueblo owns the data and has the right to decide how it is used and published. By acknowledging their research sovereignty, agency, and power, I believe this dissertation was conducted in a more ethical manner and one that will support a lasting research partnership. It is my hope that this

approach will continue to develop across the subdisciplines of anthropology, all the while opening new discussions regarding how we conduct research, and why.

Future Generations of Health Care

On April 16, 2013, the Ysleta del Sur Pueblo Environmental Management Office, the Empowerment Department, and the Traditional Council closed the gardens that were part of this research and coordinated efforts to plant three new community gardens. The gardens, as explained in a flyer distributed to the community, were to support and continue the Pueblo's ancestral traditions. Located at District 2, the *Ki Kai Namu Sheuri Community Garden* (Green Mother Community Garden) aims to teach tribal preschool students and teens about gardening practices and related vocabulary. The nearby P'a Kitu (Pumpkin Village) is intended to provide an educational setting for parents and children to interact, and the Iye Kitu (Corn Village) planted in District 1 will provide corn for ceremonial purposes. These gardens were placed in their respective areas to make them accessible so children and families can visit them on a daily basis. Like the experimental gardens initiated during my research, they aim to connect present activities with future wellness efforts.

In October 2013, I returned to the Pueblo to arrange a series of community presentations and to tour the remodeled and fully operational Community Health Center. As I walked up and down the halls on my guided tour I was told about the improvements in each room or about the new approach to patient care that each particular member of the staff was using. A new excitement seemed fill the offices and I could sense a renewed pride and ownership. I noticed that two of the individuals I

spoke with were wearing their dance moccasins, a local indigenous version of the "casual Friday" dress code one might see at other offices. "We wear them so we can dance down these halls," one of the individuals joked. I laughed and was reminded of the emergent model of care and prevention, in which local indigenous perspectives are harnessed for prevention and wellness. Dancing in the halls of the Ysleta del Sur Pueblo Community Health Center seemed fitting, and perhaps indicative of future emergent wellness practices.

Appendices

Appendix A: Research Updates

UPDATE DIABETES PREVENTION RESEARCH

Prepared for: Members of Ysleta del Sur Pueblo
Ysleta del Sur Pueblo Tribal Council
Community Health Center
Prepared by: Sean Bruna, MA
Date: February 2010

Overview: Progress and Timeline

The research currently titled, "Community-Based Participatory Research of Type 2 Diabetes Practices at Ysleta del Sur Pueblo" being conducted by Sean Bruna is on track. Data collection will complete in August of 2010, at which point Sean Bruna will need to return to Albuquerque (UNM) to complete data analysis and write-up of the dissertation and Tribal Reports. Consultation will continue throughout the analysis and write-up period, as is standard with community-based research, to ensure sensitive or sacred tribal data is not publically reported, and to ensure that reporting is guided and interpreted with community input and direction.

Next Steps

The next several months are critical for completion of this project. Working with the Local Research Team, Sean Bruna will spend mornings and weekends at the Tuh-Lah Pueblo Garden, afternoons and evenings meeting with research participants, reviewing tribal archives, or participating at the CHC Garden, and evenings transcribing interviews, writing observations, running statistical reports, and writing drafts of various sections of the dissertation.

In addition to continuing with on-on-one aspects of the research interviews, Sean Bruna will focus attention learning about the local agricultural history, food history, and culturally significant practices in order to explain how the historic context set the foundation for diabetes. By understanding past events, positive changes can be made in present and future programs.

Perhaps most importantly, the next several months, Sean Bruna will work with community members to help lay a foundation for the enhanced Pueblo Garden and will also assist with various smaller programs that promote positive health and diabetes prevention.

Supplemental Information

Research Approval Date

Sean Bruna began consultations with Ysleta del Sur Pueblo prior to moving to El Paso, Texas. Research was approved by the Ysleta del Sur Pueblo, followed by the University of New Mexico Department of Anthropology, and finally the University of New Mexico Institutional Review Board. Activities that took place before the Institutional Review Board approval are consultations, pre-research, or preparation for research.

Entity	Approval Date
Ysleta del Sur Pueblo Tribal Council	2-2-2007
University of New Mexico Department of Anthropology	2-27-2009
University of New Mexico Institutional Review Board	9-17-2009

Research Funding

This research is funded by a $12,000 Dissertation Fellowship from the Robert Wood Johnson Foundation Center for Health Policy at the University of New Mexico. The fellowship funding is used for all of Sean Bruna's expenses while in El Paso, including room & board and research expenses.

Community Directed Research: The Local Research Team

Research has been guided by various community members, which together form a Local Research Team – a group of individuals that helped formulate the research methods and goals, participate in various aspects of the research process, and will assist in future interpretation of the data.

Approval to participate in this research team as a UNM IRB approved researcher required completion of a free, online research ethics course offered by the University of New Mexico. Dr. Thomas, Director of the Community Center, and Maria Perez, Diabetes Program Supervisor, both completed and passed this very challenging course.

Because this course was so difficult, members of the Local Research Team have been participating in a modified and limited form: they guide and lead this research and activities, but they cannot interview participants. They will, however, assist Sean Bruna with analysis and interpretation of data. Sean Bruna encourages community members to contact him if they would like to complete the course and become more actively engaged Research Team Members. Sean Bruna may be reached at (505) 610-0667 or at sbruna@unm.edu.

To help facilitate the coordination of activities that the Local Research Team participates in, Sean Bruna is posting relevant material at **www.seanbruna.com/ydsp** and purchased a membership at "BaseCamp", a project management program. Please contact Sean Bruna if you would like to view the project management site.

Current Number of Participants by Research Population

This research is focusing on three populations within the Pueblo (Tribal Council, Community Health Representatives & Staff, and tribal community members) to shed light on the range of perceptions concerning type 2 diabetes and propose culturally appropriate interventions and policies which will bring awareness to diabetes and related health practices.

The following is a demographic breakdown of consenting participants (consenting participants are individuals that have signed participation consent forms). All but two groups are sufficiently participating: non-diabetics and minors. Non-diabetics are being invited to participate and minors will participate in groups throughout spring and summer.

Participant Type	Target Number of Participants	Current Consenting Participants	Current Pending Participants
Diabetic	6	5	2

Non-Diabetic	6	6	2
Non-Diabetic ("High-Risk")	6	2	
Health Staff	5 (plus others as necessary)	6	-
Tribal Council (Past & Present)	All that wish to participate	2	-
Supporting Staff	n/a	3	-
Minors age 15-18	20	0	-

Data Collected to Date

This dissertation research employs community-based participatory research (CBPR) to examine socio-cultural practices and health policies that effect type 2 diabetes prevention and management at Ysleta del Sur Pueblo. CBPR engages local community members in the research development, research and data collection, and analysis/interpretation of findings. This project is in the "research and data collection" stage.

Five primary methods are used over the course of 12 months:

(1) participant-observation
(2) surveys
(3) interviews (both semi-structured and structured)
(4) focus groups (talking circles)
(5) 24-hour food recalls

The methods employ a variety of public health and ethnographic research methods that draw heavily on the strengths of both qualitative and quantitative research. By triangulating the data from each method, Sean Bruna is able recognize the historic conditions that shaped the diabetes epidemic and to consider local policies, community prevention programs and cultural factors that may reduce incidence of the disease. Current progress on these methods is listed in the following chart.

Data Type (Method)	Number Collected
Preliminary-Research Survey: Diabetes Knowledge Attitudes & Behavior	49
24-Hour Food Recalls	Up-to-date & ongoing
Interviews (Loosely Structured)	Up-to-date & ongoing
Interviews (Structured)	Pending transcription of 1st interviews
Participant-Observation of Selected Appropriate Community Events	Up-to-date & ongoing
Focus Groups (Talking Circles)	None held to date

Post-Research Survey: Diabetes Knowledge Attitudes & Behavior	Pending close of research

Participation and observation of selected appropriate events provide important data for this research. Participating in activities (such as garden planting) or observing community events (such as the Red Ribbon Week and Religious Dances) Sean Bruna is better able to understand community life, including the strengths and challenges presented that influence the opportunities and limitations for diabetes prevention. Below is a selection of community events where Sean Bruna has participated in or observed community activities:

- ASAP/CHC Pilot Garden (Spring 2009)
- Tuh-Lah/Kiva Pilot Garden (Spring 2009)
- Elders' Center Pilot Garden (Spring 2009)
- Health Living Diabetes Workshops (2009)
- Special Diabetes Grant for American Indians (2010, Writing & Revision)
- Red Ribbon Week Attendance Reporting (2009)
- CHC Bicycle Repair Day (2009)
- Food Handlers Training Certification (2009)
- ASAP Summer Program Activities (Various, Summer 2009)
- Tobacco Free Fair & native Food Cooking Contest (2009)
- Various Community Health Center Meetings (2008-2010)
- Co-Authored Small Youth Garden Grant with ASAP (for Spring 2010)
- Religious Dance Activities (not for activities themselves, but to better understand the cultural importance of community participation, agricultural timelines, and Pueblo ways of life.)
- Garden Development and Planting (2009-2010)

Data Analysis

Data analysis has already begun, though in a limited manner. Nvivo 8 is being used to assist with qualitative analysis and SPSS is being used for Quantitative analysis. Preliminary findings and policy suggestions will be discussed in future monthly reports.

UPDATE MARCH 2010

Community-Based Participatory Research

DIABETES PREVENTION RESEARCH

Prepared for: **Members of Ysleta del Sur Pueblo**
Ysleta del Sur Pueblo Tribal Council
Community Health Center

Prepared by: **Sean Bruna, MA**

Date: **March 31, 2010**

Projects

March was a very productive month for the diabetes prevention research and development of the Pueblo Community Gardens. March winds, sun, and rain supported the 2nd annual planting of the CHC-ASAP Youth Garden and the 2nd year of planting at the Pueblo Garden, located jut south of the Kiva.

Salsa Garden

The CHC-ASAP Youth Garden has been themed as "Salsa Garden" and planted with Jalapeno, Onions, Chives, Cilantro, and Tomato. More than 50 ASAP students participated in the planting, outdoor games, and BBQ on their spring break. In addition to planting, a drip and sprayer watering system was installed at the garden to simplify watering. Future projects including naming the garden and placing Tigua-language signs to identify each plant.

Families are invited to participate in the care of the garden and are welcome to add any updates or additional plants! For more information, contact the ASAP program.

Pueblo Garden

The Pueblo Garden, supported by the Tribal Council, has been enlarged to over ½ an acre and is now supported by water rights and irrigation. Council and facilities staff

were instrumental in enhancing the garden's infrastructure, including water rights, irrigation piping, labor, and design guidance.

Special thanks to [Redacted], [Redacted], [Redacted], [Redacted], and [Redacted] and Sean Bruna (Pictured below) for their hard work installing an irrigation system.

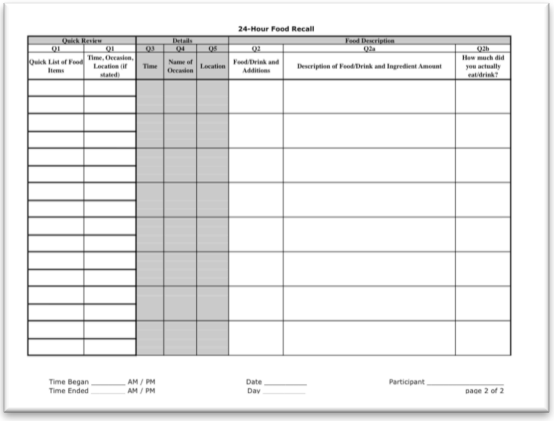
The garden, and adjacent Tuh-Lah is watered by an irrigation pump (shown above) approximately every two three weeks.

Diabetes Research

Research continues, and the Ysleta del Sur Pueblo Community Health Center, in partnership with Sean Bruna, a PhD. Candidate from the University of New Mexico, would like to congratulate Tonya Garcia of Mesilla Park, winner of a flat panel TV. Ms. Garcia entered the raffle after completing a survey about diabetes practices.

To learn more about the Community-Based Diabetes Prevention Research, including the **Pueblo Garden**, contact Maria Perez, **Diabetes program** supervisor at the **Community Health Center**, or visit the diabetes research webpage.

Sean is also continuing his interviews and food recalls with community members. The food recalls (shown below) help us learn what community members eat during each season, and may provide useful information when developing future nutrition education programs.



24-Hour Food Recall

Quick Review		Details			Food Description		
Q1	Q1	Q3	Q4	Q5	Q2	Q2a	Q2b
Quick List of Food Items	Time, Occasion, Location (if stated)	Time	Name of Occasion	Location	Food/Drink and Additions	Description of Food/Drink and Ingredient Amount	How much did you actually eat/drink?

Time Began _____ AM / PM
Time Ended _____ AM / PM

Date _____
Day _____

Participant _____

page 2 of 2

Next Steps
Garden activities

Planting will continue at each garden throughout April, as will various enhancements to each location. This season is already looking pretty warm, and additional care will be needed in the garden. Community members are invited to the garden and welcome to plant their own vegetables and fruit, or help with the garden enhancements including an compost bin.

Research Activities

Sean Bruna is still seeking a handful of participants for the diabetes prevention research. Both diabetes and non-diabetics, including minors age 15-18, are included in the study to learn a wide range of perceptions concerning diabetes and diabetes prevention. Sean will continue to conduct a second round of interviews to follow up on knowledge gained during the first round. He will also work closely with the ASAP Program and Youth Council to ensure that minors, age 15-18, are included in the study in sufficient numbers.

To participate, please contact Sean Bruna at (505) 610-0667 or via email at sbruna@unm.edu

Projects

Although April showers did not arrive, garden plants did sprout and begin to grow with the warming sun.

Salsa Garden

The CHC-ASAP Youth "Salsa Garden" is has been developing nicely, and thanks to the TLC of Becky Senclair and ASAP youth, the garden has started to flourish. May will be a very important month for this garden as the temperatures will rise, grass will start to grow, and critters may want to snack on the veggies.

Parents are encourage to participate in the garden and share in the mid summer "salsa" harvest.

A tomato and sunflower (shown above) grow in the rich soil and warm sunlight.

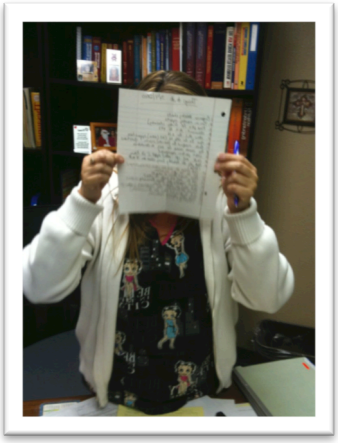
Pueblo Garden

Thanks to an enhanced irrigation system and nutrient rich canal water, the Pueblo Garden is sprouting and starting to grow in selected areas. Shown below are gourd plants and corn, safely sprouted. "I think we are going to have a good harvest," said Frank Gomez after examining the rows of corn., shown below.

In order to promote seedling growth, conserve water[Redacted] Sean Bruna experimented with **"pit farming", a technique used by native peoples** throughout the southwest. Pit farming pools the water in pot shaped bowls filled with amended soil, and provides an ideal growing condition for new seeds. One pit (shown below) shows how this technique can be used in the most hardened clay soil.

Nearly ½ acre, the garden is already displaying some unique personality, with sections that include clay, soil, and sand. A compost pile will be built later this spring to make certain that additional nutrients are added to the soil in the coming years.

Diabetes Research



April was a very productive month for the diabetes prevention research. Thanks to many wonderful volunteers, Sean completed several food recalls and interviews, with study participants. The interviews help him understand the real-life challenges that diabetics face *and overcome* on a daily basis when controlling their diabetes. Sean also interviewed Pueblo staff, such as Maria Perez (shown at right), diabetes supervisor, to learn about diabetes and related issues.

Sean also began an **environmental scan and analysis of supermarkets that are visited by tribal members**. The supermarket scan will examine what foods and quality of foods are available, along with a selection of price. As he is learning, many local supermarkets offer cheap and unhealthy snacks and often run out of important vegetables.

For example, Wal-Mart (Alameda and Border Highway) often runs out of produce, Big-8 offers a variety of cheap, though unhealthy drinks, and snacks are unavailable at most local gas stations. **Running Bear** (not shown) provides a good example by offering fresh fruit for those that want a healthy snack on the run.

Sean also participated in and observed many wonderful community events this spring, which promote health and wellness at the tribe. Two events in particular, the Sexual Abuse Prevention Month Luncheon and Elders' Center Birthday lunch, show how

much can be accomplished when a community comes together to address health issues. The Sexual Abuse Prevention lunch spread awareness by educating and providing literature, while the Elders' Lunch renewed friendships and honored tribal elders. Way to go YDSP!

Next Steps

Garden activities

May is an important month for the tribal gardens as the temperatures begin to rise, winds pick up, and soils need amending with organic nutrients. Weeding will continue, and with the help of a few more volunteers, the garden will continue to flourish for a high summer harvest.

Research Activities

This May, Sean will complete the 2nd round of food recalls and welcome a few additional participants to the study that wish to tell their stories about health and wellness. Working closely with the ASAP Staff, Elders' Council, and Youth Council as partners, Sean will gather additional information about snacks, the types of food eaten in the past, and possibilities for youth targeted diabetes prevention in the future.

To participate, please contact Sean Bruna at (505) 610-0667 or via email at sbruna@unm.edu, or contact Maria Perez at the CHC at (915) 858-1076 or via email at [redacted].

Projects
2nd Annual Tobacco Free Fair

Many individuals participated in the **2nd Annual Tobacco Free Fair**, hosted by the Community Health Center. Sean Bruna participated in the fair by hosting a "Garden Sign" painting activity where kids and parents could paint a sign for their home garden or for one of the experimental tribal gardens. While waiting for their signs to dry, parents could read brochures with tips on health eating and exercise.

Five youth and adult artists donated their signs for use in either next years CHC Youth Garden o r the Pueblo Garden.

Salsa Garden

The CHC-ASAP Youth "Salsa Garden" is getting HOT HOT HOT. Rising temperatures in may have helped the garden grow and help is needed to care for and maintain the garden.

Unfortunately, the garden was vandalized. Tomato cages were broken, plants were town out, and sunflowers were added to a compost pile. Thanks to the quick thinking of boys and girls, the cages were repaired and the garden continued to grow.

Pueblo Garden

Though the Pueblo Garden did begin to sprout, the we started to notice that due to the poor quality of the soil, the grounds will need reconstruction in order to grow a full harvest in coming years. After a second soil test, we learned that several factors were likely causing slow and stunted growth: high salinity and pH, poor organic content, and leeching from the "old house" that was located on the property. We hope to save some of the plants for a harvest and are considering long-term solutions, including grant funded programs.

In summary Symptoms that we did not encounter last year:

- Yellowing leaves- stunted growth (or very very slow growth)
- Clay (high concentration where the house was built); water pooling in clay area
- Sections of garden look like concrete
- Increased white tops on the soil after irrigating (salt)

Primary Diagnosis

Lack of organic matter: The land has not been farmed on for over 100 years and was covered by a house that may have had a packed or clay floor, fall, or seating wall. After a few discussions/interviews I've learned that clay and other materials was used in old houses to make floors, walls, and outdoor seating areas. Each year, new clay was added (archives v2p96 & interviews). This provided a deep foundation of clay in the vicinity. This meant that natural fertilizers (leaves, etc.) were not mixing in with the soil each fall and winter.

Concrete-like soil: We did not see this last year so I started thinking about what happened to the land. When the old house on the property was leveled, the left over sand used in construction of the Kiva was spread out over the entire area. When we tilled the soil we mixed the clay & construction sand -- essentially creating a soil structure similar to concrete.

pH level is too alkaline/high (salty): Salt is problem here in west Texas. Irrigation, which we were not doing last year, pulls the salt up from the ground and as the water evaporates the salt is left behind. Salty soil is an issue in this area and causes the symptoms we are seeing. Ironically, one of the reasons why this area was settled was because of salt; there was a salt lake about 100 meters south of the church (archives,

v3p116), and salt was "leeched" from the surrounding soil by flooding/irrigating. For farming, salt was once naturally removed from local fields when the Rio would flood the area and then drain away. When the river was no longer able to naturally flood because the US set the US-Mexico boundary (which also cut reservation land in 1/2) salt started to build up.

Action: Several steps were taken, including adding sulfur to lower the ph and adding compost to sections of the garden. We do hope that some of the plants will continue to grow and produce fruit before the high summer heats makes growing extremely difficult.

Diabetes Research

May was again productive for research, as Sean continued to complete interviews, food recalls, and observations before the busy Fiesta schedule begins. Sean also interviewed various tribal staff and community leaders to learn more about the **Tribes economic history**, present day programs, and future directions. Economic histories are important to know when developing diabetes prevention programs because they show what opportunities individuals and communities had (or have) to eat healthier and live high quality lives. Sean hopes to learn more about the tribal history in coming months.

Next Steps
Garden activities

June will likely be the last month of the CHC Youth and Pueblo Garden as temperatures will peak over 100F, making growing difficult. Soil will be monitored and gardeners will meet to discuss **how the gardens can transition from experimental programs to full-time health promotion gardens, complete with education programs, measurable goals, and timelines**.

June will also bring the Fiesta, an activity that the author of this report is honored to observe.

Research Activities
Sean will continue to collect data in the forms of interviews, stories, food recalls, and participation throughout the month of June in preparation for return to Albuquerque in July (details regarding the next stage of this research will be provided in the June end of month update).

To participate, please contact Sean Bruna at (505) 610-0667 or via email at sbruna@unm.edu, or contact Maria Perez at the CHC at (915) 858-1076 or via email at redacted.

UPDATE JUNE 2010

Community-Based Participatory Research

DIABETES PREVENTION RESEARCH

Prepared for: Members of Ysleta del Sur Pueblo
Ysleta del Sur Pueblo Tribal Council
Community Health Center

Prepared by: Sean Bruna, MA

Date: July 6, 2010

Cleaning Bread Tins, June 2010.

Projects
Community Participation and Diabetes Research

June 2010, **Sean Bruna participated in a variety of community events** leading up to the Pueblo's Feast Day, St. Anthony. All of the events, such as Salida de los Santos (authors feet shown at left) or baking break (shown at right) brought the Pueblo community together to share with others and renew bonds as they prepared for the dancing and Feast Day.

In addition to participant observation, data collection also included ongoing (and near completion) **work on an environmental scan of local supermarkets, convenience stores, produce markets, or other locations where tribal members purchase groceries**. The data gathered examines available foods in fresh, canned and frozen forms, in addition to availability of other healthy foods such as whole wheat breads instead of white flour breads,

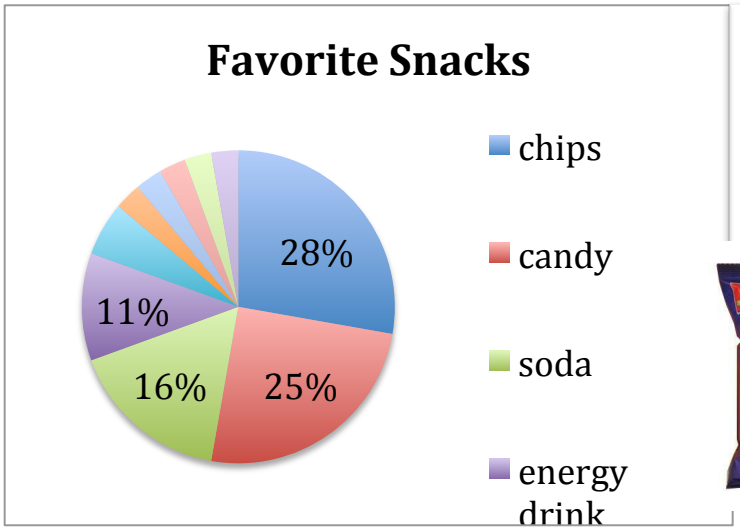
This data will help us understand the opportunities tribal members have to purchase healthy foods. Furthermore, it may show how far members have to drive to shop at a supermarket, an important factor in healthy food decisions. Farmers markets and produce marts, such as the now closed market shown at left, are not available in the Lower Valley and tribal members must drive several miles to purchase produce.

Empowerment Center Youth Nutrition Workshop

On June 21, Maria Perez hosted an experimental **Youth Nutrition & Education Workshop** for the Tribal Youth Education and Empowerment Program. The goal of this workshop was to educate tribal youth about health snacks in a fun and informative manner while also gaining insights into their favorite snacks and meal preferences. Students discussed unhealthy and healthy snacks, reviewed "Eat This, Not That", and award winning book about snacks, and shared ideas about healthy meals.

Fourteen (14) individuals age 14 to 19 participated in the educational workshop. The tops four "snack foods" listed by participants were **chips** (27.8%, n=10), **Candy** (25%, n=9), **soda** (16.67%, n=6) and **energy drink**s (11.11%, n=4) (Please see the chart below).

Maria Perez and the Community Health Representatives will continue to offer these programs in the year to come in order to promote positive eating decisions among tribal youth.



Salsa Garden

The CHC-ASAP Youth "Salsa Garden" has been producing an abundant number of cherry tomatoes throughout June and will likely continue to produce them well into the fall. The other veggies – jalapenos, onions, and cilantro – have either been harvested or dropped their blooms in the 100+F temperatures. The watermelon is expected to continue growing for a late summer treat. **A Salsa Harvest is being scheduled late Summer, so check back with the CHC if you would like to participate**.

Below are photos from February 1999 (left) and July 2010 (right). The Pueblo Grounds staff has worked throughout this year to make the Park a welcoming area for kids and families. Not shown are new playground and additional shade.

The garden will continue to need capable hands as it closes out for the summer**. If you are interested in working in the garden in the coming year, please contact Paul Hidalgo, Becky Senclair, or Maria Perez at the Community Health Center.**

Pueblo Garden

After nearly 6 months without rain, the Pueblo Garden was treated to its first showers in late June. All other times, the garden was watered by canal water using a pump (shown at the right) or with city water from a hose or sprinkler.

Selective plants continued to grow in the Pueblo garden, most notably **squash and large Armenian cucumbers** (held at left my Councilman Gomez). Other plants, including tomatoes, jalapenos, and corn, grew with limited success, likely due to the poor quality of the soil. **Plans are under way for a "soil restoration project" so that the ground can recover from more than 100 years without cultivation.**

Next Steps

Return to Albuquerque: Data Analysis and "Write Up"

At the end of July, Sean Bruna will return to the University of New Mexico, in Albuquerque, NM, to begin data analysis and preliminary write of policy reports for the Tribal Council and dissertation for the University. Maria Perez, Sean Bruna, and a group of local community members will work together to review research data and assist Sean with writing up reports for the Pueblo. If you are interested in **participating, please contact Sean Bruna at (505) 610-0667 or via email at sbruna@unm.edu, or contact Maria Perez at the CHC at (915) 858-1076 or via email at** [redacted].

Appendix B: Research Timeline

UNM indicates University of New Mexico
YDSP indicates Ysleta del Sur Pueblo

Date	Activity	Location	Product	Notes
6-8/2005	Archival Research	Washington, DC.	Archival Documents	Archival research at the Smithsonian's National Museum of the American Indian and National Museum of American History
8/29/2005	Consultation	El Paso, TX		Meet Jim Montano for 1st Time. He suggests diabetes as an issue and research topic.
4/16/2006	Consultation	UNM	Problem Statement	Email research problem statement to Dr Thomas, Director of Community Health Center, my after meeting with Jim Montano & Other elders.
6/13/2006	Consultation	YDSP		Visit YDSP Feast day and met with Dr. Thomas. Dr. Thomas showed me around and I met with several people. Following the visit Dr. Thomas explained that people do not like to talk about some health topics or to be surveyed.
10/5/2006	Consultation	YDSP		Dr. Thomas explains that I must first propose research to the Tribal Council; that the Tribal Council is the review board. This would need to be done before proceeding.
10/6/2006	Consultation			Dr. Thomas emails to relay informal message from Tribal Council: the research must benefit tribe.

10/27/2006	Consultation			Dr. Thomas emails a structure for the pre-proposal, detailing what the Tribal Council would like to know.
1/16/2007	Pre-proposal		Preliminary Research Proposal: Visitation rights	I request to continue meeting community members and develop proposal.
2/1/2007	Presentation	YDSP		Research proposal submitted to Community Health Center and Dr. Thomas presents it to the Tribal Council.
2/6/2007	Proposal Topic Preliminary Approval	YDSP	Pre-Proposal: Visitation Rights	Preliminary approval granted with comment that final proposal must be approved and must benefit the tribe.
5/21/2007	Consultation	YDSP		Referral by Dr. Thomas to S.W. Tribal Epidemiological Center to discuss the project and methods.
6/12/2007	Pre-proposal	UNM/YDSP	Pre-Proposal: Research Topic	Preliminary research request emailed to Dr. Thomas, who then presented it to the tribal council.
6/13/2007	Consultation	YDSP		Dia de San Antonio. Walk Circle with Dr. Thomas and Diego
6/13/2007	Consultation	YDSP		Visit to meet Dr. Thomas and to watch Dia de San Antonio dances.
8/4/2007	Consultation	YDSP		Consultation with Diabetes Staff
8/17/2007	Consultation	ABQ		Consultation with S.W. Tribal Epidemiological Center
11/2/2007	Visit	YDSP		Community Health Center Tour

11/29/2007	Consultation	YDSP		Dia De San Andres, Ysleta del Sur Pueblo, Tour the Pueblo with Diego Torrs, Community Health Representative.
12/6/2007	Pre-Proposal		Pre-Proposal	Preliminary research request letter reviewed by Dr. Singer and approved by my committee.
12/10/2007	Pre-Proposal		Pre-Proposal	Submit 2 research briefs for Diego to review prior to giving them to council
1/10/2008	Consultation	YDSP		Met Dr. Thomas and the staff to discuss the research in general terms.
2/26/2008	Consultation	ABQ		S.W. Tribal Epidemiological Center reviews proposal and gives feedback
6/13/2008	Consultation	YDSP		Visit YDSP to discuss methods.
8/3/2008	Consultation	YDSP		Dr. Thomas explains that the CHC is planning a Behavioral Risk Factor Surveillance System (BRFSS) survey and that the community may not want to be "researched or studied again". I meet with Maria and Dr. Thomas to discuss the aims of the research.
8/4/2008	Consultation	YDSP		First mention and discussion concerning community gardens.
8/18/2008	Move to El Paso, TX	YDSP		*Move to El Paso / Ysleta del Sur Pueblo*
8/2008	Introduction	YDSP		Diego explains “field research” to community members
9/12/2008		YDSP		I email Dr. Thomas additional information about community gardens, including the gardens I

				worked with as Faculty in the UNM Research Service Learning program
10/1/2008		YDSP		At suggestion of committee and individuals at the tribe, I request to volunteer with the pueblo and begin paperwork, including fingerprinting and background checks.
10/13/2008	Community Introduction	YDSP		Introduction to broader community at Red Ribbon Breakfast
11/19/2008	Team Meeting	YDSP		1st Team Meeting, primarily health center staff
11/30/2008	1st Religious Event	YDSP	Community Event	Attendance at first religious event: Dia de San Andres (St. Andrew).
12/1/2008	Team Meeting	YDSP		2nd Team Meeting to discuss garden
12/15/2008	Team Meeting	YDSP		3rd Team Meeting to discuss garden
12/16/2008		YDSP		Draft of Garden proposal written and given to Maria for review
1/5/2009	Volunteer placement	YDSP		Placement in after school programs at the Community Health Center
1/16/2009	Team Meeting	YDSP		Community garden planning meeting.
1/27/2009	Garden Proposal Approved by Tribal Council	YDSP	Garden Proposal	Community Garden Proposal submitted to tribal council
3/4/2009	Research Proposal Approval	UNM	Dissertation Proposal	UNM Departmental Research Proposal approval approximate date
3/21/2009	Garden Tilling	YDSP	Garden Tilled	Till and amend garden soil.
4/18/2009	Garden Planting	YDSP	Garden Planted	Garden Planting
6/4/2009	Pilgrimage	YDSP		Participate in Salida de los

				Santos Pilgrimage
6/13/2009	Religious Events	YDSP		Assist with Feast Day activities.
7/25/2009	Garden Closed	YDSP	Garden Closed	Garden closed and cleaned
9/17/2009	IRB Approval	UNM	IRB	IRB Approved
9/18/2009	Formal interviews, food recalls and survey's begin.	YDSP	Research	With IRB approval granted, formal data collection begins.
3/1/2010	Garden Expanded	YDSP	Garden Tilled	Garden Expanded to 1/2 acre
7/31/2010	Return to ABQ	UNM	Depart Field	Depart El Paso / Ysleta del Sur Pueblo and return to Albuquerque
2/14/2011	Co-present Talk	UNM		Co-presented with Maria Perez and Diego Flores (CHR) at CBPR Monthly Series

Appendix C: Flex Team Composition

Department	Title, Name	IRB	Proposal Development	Garden	Data Collection	Analysis
Albuquerque Tribal Epidemiological Center	Director, Dr. Romero		x			
Community Health Center	Director, Community Health Center*, Dr. Thomas	x	x	x	x	x
Community Health Center	Supervisor, Diabetes Program*, Maria Perez	x	x	x	x	x
Community Health Center	Female CHR, Diabetes Program, Clara Mendoza		x		x	
Community Health Center	Female CHR, Optometry, Kathy Madrid		x			
Community Health Center	Female CHR, Dentistry, Diana Maldonado			x		
Community Health Center	Male CHR, Health Center, Diego Flores		x	x		
Pueblo Grounds	Director, Emilio Martinez			x		
Tribal Council	War Captain, Tribal Council, David “Montaña” Gally		x	x		

Tribal Council & Pueblo Grounds	Tribal Council, Pueblo Grounds, *Ivan "Bear" Lorenzo*			x		
Economic Development	Economic Development, Pat Riggs		x	x		
Tribal Records	Tribal Records, Zeke Garcia		x		x	
Tribal Elder	Male Tribal Elder, Eduardo Ramos		x	x		
Elders' Center	Director, Liz Acosta			x		
Youth Programs	Coordinator, Becky Senclair		x	x		
Youth Programs	Coordinator, Yvette Sierra		x	x		

Appendix D: Teen Workshop Findings

The following snack foods were selected by the 14 teens that attended the workshop on June 21, 2010. The brand names and type of food are on the left chart, and the number and percentage of food preferences are listed on the right chart.

Brand	Type
Budweiser	alcohol
Baby Ruth	candy
Kit-Kat	candy
M & M's	candy
Mexican Candy	candy
Reeses Cups	candy
Snickers (2)	candy
Sour Worms	candy
Sweet Tarts	candy
Chips	chips
Funyuns	chips
Hot Cheetos (5)	chips
Hot Fries	chips
Lay's Chips	chips
Takis (2)	chips
Starbucks	coffee
Dunkin' Donuts	donuts
5hr. Energy shots	energy drink
AMP Energy Drink	energy drink
Red Bull	energy drink
RockStar energy drink	energy drink
Hamburgers	hamburger
Snickers Ice Cream Bar	ice cream
Pizza (2)	pizza
Coke (3)	soda
Dr. Pepper (2)	soda
Root Beer	soda

Food Type	Times Mentioned	%
chips	10	27.78%
candy	9	25.00%
soda	6	16.67%
energy drink	4	11.11%
pizza	2	5.56%
Alcohol	1	2.78%
coffee	1	2.78%
donut	1	2.78%
hamburger	1	2.78%
ice cream	1	2.78%

Appendix E: ASAP Garden Budget & Supporting Documents

The following is a budget provided to the Community Health Center for development of the salsa garden. It is provided here so that other diabetes programs may consider the cost of developing programs.

Item	Cost	Quantity	Total	Notes
Flower Planters				
Flower Planter	-	6	-	Need input from facilities: what will they look like, who will maintain them?
Bag of Soil for Planters	1.47	6	8.82	1 pubic foot (1bag) estimated
Flowers (6 pack)	2.99	12	35.88	
Flowers (Assorted seeds)	1.99	3	5.97	
		Total	**50.67**	
"Salsa Garden"				
Garden Signs	0	3	0	Made from scrap wood and teach about recycling
Paint (3 assorted colors)	0	3	0	Use left over paint and teach about recycling
Paint Brushes	0	3	0	Use personal paintbrushes
Drip Line Kit	21.32	1	21.32	Drip line can also open discussions about saving water.
Extra Compression Elbows	1.78	2	3.56	elbows make it easier for the tubing to continue around corners
Garden Edging	0	0	0	Edging is not essential and not included
Seed Starter Flat (76 pack)	1.79	1	1.79	starter set can be placed on window sill as a pre activity
Seeds	0	0	0	seeds donated
Top soil	1.63	4	6.52	topsoil to replenish what was lost.
Tomato cages (rabbit	26	1	26	Tomato cages made out of rabbit guard are sturdier and less likely to

fencing)				get bent when hit by a ball, as was the case last year
Tomato Cages (1x2x8 post)	0.77	3	2.31	
Box of Staples	0	1	0	Sean has a box of staples
		Total	**61.5**	
Additional Costs				
Water	10	**11**	110	cost of watering is unknown, though I estimated $10 per month when I consider my house garden. Water saving (collecting water from the roof) could be explored as part of an environmental program?
		Total	**$110**	

Appendix C: ASAP Garden Activities

Various inexpensive activities were developed by the ASAP staff. The items below were inexpensive activities offered in conjunction with the Salsa Garden.

After School Program Garden Activities
Ysleta del Sur Pueblo

Time: Approximately 1 Hour Inside, 1 Hour Outside, ½ Hour Clean Up and Review
Overview: Teach how plants grow, how to respect plants, start plants, and start a garden
Materials: Each Table needs 1 Egg Carton, Zip Loc Bag for each child, Napkin, Water in a bowl, Stapler, Newspaper, Permanent Marker (Sharpie), Crayons, Seeds (beans; other seeds decided in groups and leads will get), Soil (can send group members to get soil for group)

NOTE: NEED TO SELECT A BREAK TIME

TALK and LEARN IN A BIG CIRCLE

1) Remind Class about the gardens they grew
    a. Today we will learn about plants, seeds, how plants grow or "sprout" and start our garden
2) Where plants come from:
    a. This is a tomato (grown up plant).

b. This is a tomato plant (teenager plant).
c. This is a tomato seed and sprout (baby plant).
d. How do plants grow from seed to fruit or vegetable? Sprout and grow with water… with sun soul and water they grow until they can be harvested

3) Respecting plants at all ages
   a. *Why do we respect plants?* (ask class why plants are important and should be respected): They provide food, they hold down dust, why else? Ask your parents and grandparents why they should be respected.
   b. *Plants should be treated gently. – pass around plant* and each group touch it, smell it, look at it.. hear it. How does it smell, feel, look like, sound like?
4) <u>(GOOD TIME FOR BREAK if Needed) Break into groups via tables</u>
5) Activities:

   Activities may be divided up by age or all can do with appropriate leadership

   Inside:
      i. Seed in a bag (seeds need water to germinate or "sprout")
      ii. Seed in a "newspaper pot" made out of newspaper
      iii. Seed in an egg crate

   (GOOD TIME FOR BREAK)

   Outside:
      iv. Garden Planting by groups
6) Clean Up Inside and Outside
7) Regroup in a big circle
   a. What did we learn today?
   b. What was your favorite part? Why?
   c. We may not see seed sprouts for 10 days! So be patient!
   d. Saturday family is welcome at the Tuh-Lah for larger gardens and free seeds!

<u>ACTIVITIES</u>

Seed in a Bag to watch it sprout (good for very young)

What you need:
1. Zip Loc Bag
2. Napkin
3. Seed (Bean)
4. Water

Directions:
1. Write Your Name and Today's Date on Zip Loc Bag
2. Spray napkin or dribble water to make it wet
3. Place bean seed in middle of napkin and fold in half
4. Place in Zip-Loc Bag and Seal

    a. Remoisten when necessary
    b. Remove from paper and plant once sprouted

Seed Starts in Egg Crate (good for very young and teamwork)

What you need:

1. Egg Carton
2. Soil
3. Seeds

Directions:

1. Decide what seed to start (lettuce, beans and radish are good)
2. Poke holes at bottom of each egg holder
3. Cut top off of egg carton and place at bottom (catches extra water)
4. Add soil
5. Add Seeds
6. Water
7. Cover with plastic wrap
8. Place in warm place

Plant a seed in a newspaper pot to plant in garden once it sprouts

What you need:

1. One vertical sheet of newspaper
2. Stapler
3. Soil
4. Seeds
5. Small Cardboard box (e.g. shoebox) to hold pots

Directions:

1. Decide what seeds to start (lettuce, beans and radish are good)
2. Tear one sheet of newspaper.
3. Fold in half
4. Fold in half again
5. Fold in half again
6. Fold into thirds and unfold
7. Turn and Fold in thirds (the other way) and unfold
8. Draw a “Tic-Tac-Toe” board on the lines
9. Cut the horizontal lines to the middle square
10. Fold small sides in and surround with remaining sides
11. Staple into a cube
12. Fill with soil and seeds
13. Place in box and water lightly
14. Cover with plastic wrap
15. Place in warm place to germinate

Garden Planting

1. Remove extra sand if necessary
2. Wet down the soil slowly so t soaks in
3. Divide the area into zones for plants. Try to keep plants at arms reach and leave room for growth and expansion. Remember,

a. Beans and tomatoes grow tall
b. Some plants grow in bushes while others are in rows
c. Some plants grow out (watermelons and cucumbers)
d. Follow rules on packages and be sure to add a few "extra seeds"

Be sure to plant radish, beans, jalapenos and onions as they grow easily.

4. Plant seeds and "starts" in each zone
5. Write names of plants and dates on popsicle sticks & place in dirt
6. Water lightly
7. If desired, make a fence out of twine

ASAP Spring Break – Gardening Afternoon

CHC Auditorium & Playground • Monday, March 15, 2010 • 12-noon - 4:00pm

General Considerations

- Plant "Vertical" Plants" Rather than plant items that require a lot of room (such as the watermelon that grew out of control), plant veggies that grow vertically. I suggest a "salsa garden" where tomatoes, chile and onion are the sole focus. Rather than use tomato cages that bend when hit, build sturdy tomato supports.
- Select a Harvest Date: Specific harvest dates can then be selected to correspond with Friday movies (for example) and the group can make and eat salsa together.
- Simplify Watering: Add am inexpensive drip line so that watering is as simple as turning on the tap.
- Youth Leadership: Select and "Garden Managers" to develop and oversee the garden (with supervision)
- Name the Garden: Name the garden and plants in Tiwa to tie into cultural practices.

Spring Break Gardening Activities

- Preparation Activities:
  - Activities: Garden Student-Manager Training, Home Depot Student Shopping Trip, Seed "Start" Planting, Garden Plant Tiwa Naming activities ?(perhaps on a Saturday?)
  - Staff: Emilio Martinez (Language)(?), ASAP Staff, Sean

- Spring Break Activities:
  - Staff: Mr. Loera for blessing (?), ASAP Staff, Sean
  - Activities: Painting Signs, Preparing Soil, Installing Watering System and Plantings

Spring Break Activity Breakdown

Activity	Sub-Activity	Goal	Age	Supplies	Notes
Flower Beds	Plant Flowers in Planters	Add plants and color to the	All Ages	6 Planters Soil for	Plant flowers in

		CHC grounds? Promote responsibility? Activities for ASAP youth programs?		Each Planter Flowers Water Can	6 large planters (one for each table/age group)
Salsa Garden	Various Planting Activities (See below)	Plant a garden that encourages Tiwa nation building, responsibility, and is easy to maintain			
	Paint Garden Signs (one for each section/plant)	Encourage Tiwa Language	All	4 Premade Signs Paint in 4 colors	
	Prepare Soil -Remove grass -Mix in refresher bags of soil -mix in organic fertilizer if necessary		All Ages		
	Add Drip Watering Lines -Cut major pieces -Cut smaller lines -Place drip lines -add garden edging (?)		Older students		Older students as this requires cutting
	Plant Veggies (one in each section) - tomatoes, jalapenos, onions - cilantro (may have trouble in that location)		All Ages		Place "harvest date" popsicle stick based on when they will be ready

Supplies

Item	Cost	Quantity	Total	Notes
Flower Planters				
Flower Planter	-	6	-	Need input from facilities:

				what will they look like, who will maintain them?
Bag of Soil for Planters	1.47	6	8.82	1 pubic foot (1bag) estimated
Flowers (6 pack)	2.99	12	35.88	
Flowers (Assorted seeds)	1.99	3	5.97	
		Total	**50.67**	
"Salsa Garden"				
Garden Signs	0	3	0	Made from scrap wood and teach about recycling
Paint (3 assorted colors)	0	3	0	Use left over paint and teach about recycling
Paint Brushes	0	3	0	Use personal paintbrushes
Drip Line Kit	21.32	1	21.32	Drip line can also promote teaching about saving water.
Extra Compression Elbows	1.78	2	3.56	elbows make it easier for the tubing to continue around corners
Garden Edging	0	0	0	Edging is not essential and not included
Seed Starter Flat	1.79	1	1.79	Starter set of 76 pods can be placed on window sill as a pre planting activity in Mid February.
Seeds	0	0	0	seeds donated
Top soil	1.63	4	6.52	topsoil to replenish what was lost.
Tomato cages (rabbit fencing)	26	1	26	Tomato cages made out of rabbit guard are sturdier and less likely to get bent when hit by a ball, as was the case last year
Tomato Cages (1x2x8 post)	0.77	3	2.31	
Box of Staples	0	1	0	Sean has a box of staples
		Total	**61.5**	
Additional Costs				
Water	10	**11**	110	cost of watering is unknown, though I estimated $10 per month when I consider my house garden. Water saving

				(collecting water from the roof) could be explored as part of an environmental program?
		Total	**110**	

Questions
Is there a budget?
Will parents attend the opening planting?
Other activities that day – should we get a guest speaker? Maria to talk about healthy eating?
Other options:
http://www.irrigationdirect.com
http://www.dripdepot.com/111
Basic Drip Irrigation Kit for Vegetable Gardens, Price: $47.35

Appendix E: Garden Exit Memo

To: Mr. Montoya, Acting Director, CHC
Cc: Mrs. Lopez, Diabetes Program Supervisor, CHC
Re: CHC Youth Garden Memo
Date: June 30, 2010

Dear Mr. Montoya,
In late May you asked that I prepare a short memo discussing the CHC Youth Garden and what can be done to continue the garden as a program. The CHC Youth Garden and the Pueblo Garden are both active parts of the diabetes dissertation research and I will provide a detailed write up and policy report when I present my findings to the Council (I will explain the reporting process in a forthcoming memo). Until that time, there are steps that can be considered by ASAP staff to prepare for future youth gardening programs. Below I outline several recommendations for the Youth Garden that may be implemented in the coming months:

Scale Down the Size of the Youth Garden
Gardening is labor intensive and I suggest moving the garden out near the sheds and limiting the size to a 3' x 6' raised bed. The increase in sunlight and smaller size will make the garden easer to manage. The current space can then be filled with easy to manage landscaping.

Develop Culturally Appropriate Youth Programs
The Youth Garden, like all gardening at the Pueblo, is at its most fundamental level linked with Pueblo cultural and religious practices. Future programs should explore how

agricultural practices and nutrition are linked to local cultural practices. In the short term, programs could explore "Health Eating and Healthy Tiguas" and in the long term, deeper cultural significance.

Support the Garden with Funding and Staff

Gardening has emerged as a powerful culturally appropriate way to promote wellbeing and health. I suggest supporting future gardening programs with an education program, measurable goals, staff, and budget. In the short term, ASAP can consider possibilities such as hiring a part time student manager to develop short-term programs in conjunction with diabetes program efforts.

In the long term, I suggest securing large health intervention grants that both build staff capacity and provide health data. I've started exploring long-term program intervention and research grants, and I believe the Native American Research Centers for Health (NARCH) Grants are an excellent opportunity for the tribe. (Both gardens would fall under a NARCH program). I am happy to participate in the development of a future NARCH grant, if requested. NARCH Grants:
http://www.ihs.gov/medicalprograms/research/narch.cfm

Appendix F: Garden Proposal

Community Garden
for
Good Health & Diabetes Prevention

Request Made By:

Dr. George Haddy, Director, Community Health Center
Ms. Ana Lopez, Diabetes Program Supervisor, Community Health Center
Ms. Liz Acosta, Elders Program Coordinator
Mr. Refugio Ortiz, Community Member
Sean Bruna, PhD. Candidate, University of New Mexico

Submitted to Tribal Council for Review on January 27, 2009.

Table of Contents

Overview

We are writing to request use of land for two community gardens to promote exercise and healthy eating for all members of Ysleta del Sur Pueblo. The land requested is for a primary garden near the Kiva and Tusla, and for a smaller herb garden at the Elders' Center.

The community gardens are part of the diabetes prevention dissertation fieldwork which is conducted by Sean Bruna, a PhD. student from the University of New Mexico (Proposal approved by Dr. Haddy and the Tribal Council February 6, 2007).

The Community Health Center supports the garden as a way to promote healthy practices for both mind and body. The garden will provide an opportunity for both individuals and groups to maintain their own garden plots for vegetables, herbs, and flowers. Departments are encouraged to use the site for programs or to work with Sean Bruna and the CHC to develop their own programs.

Why Develop a Community Garden?

The proposed Ysleta del Sur Pueblo community garden has a focus on health and diabetes prevention. Diabetes comes at a huge social, cultural and economic cost. Individually, diabetes can cause serious medical complications or shorten a person's life span by 15 years. Socially, diabetes can add stress to a family and community, especially when it is not understood or prevented. Economically, diabetes is burdensome to families and communities; the average annual medical care cost for a person with diabetes is $13,243, while the average annual medical care cost for a person without diabetes is $2,560.

Fortunately, diabetes can be prevented or delayed.

The community gardens hope to provide a location for individuals and groups to consider healthy practices in a fun and relaxing environment. This garden is a collaborative project created and owned by members of the community; all residents of the Pueblo will share both the maintenance and rewards of the garden. Three obvious benefits of the community garden are the beautification of an empty space, strengthened sense of community, and awareness about nutrition and exercise. But the impact of a community garden can reach much further, including:

* Urban Revitalization & Raising of Property Values
* Reducing Hunger
* Enhancing the Local Environment
* Generating Money
* Supporting Cultural Projects
* Providing Sites for Education, Exercise and Community Engagement

In sum, the garden will provide an arena for community members to gather and interact for positive change.

Community Consultations & Selection of Location

Three meetings were held to discuss community interest, viability, and purpose of the community garden. In addition, Sean Bruna spoke to community members at events to gauge interest in a community garden and related programs. Community members suggested five possible locations, though various concerns limited the viability of each location. The locations considered were:

(1) Near the Elders' Center and Community Health Center
(2) Near the Elders' Housing Area
(3) Near the "New Pueblo" in field across the street from the Library
(4) Near the Tusla & Kiva

Five concerns and suggestions were brought up to Sean Bruna's attention, each of which narrowed the options for a location:

(1) Fence & Security - Prior gardens and plants near the Elders' Center and "New Pueblo" were torn up. If a location has fence already, the garden can save money.
(2) Linking Other Activities – The location needs to be tied in with other important sites, cultural practices, and related activities.
(3) General Accessibility and Elder Accessibility – The location needs access routes for individuals in wheelchairs, using canes and crutches, or for individuals that have difficulty bending over.
(4) Soil, Sun and & Shade – All locations have good soil for several types of plants. The location needs access to shade as well as sun (especially in summer months).
(5) Food Preparation & Workshop Areas – Health & cultural programs need tables and chairs, kitchens to prepare plants, hold cooking classes, make snacks, or to prepare plants for community sharing and other uses.

Land Requested

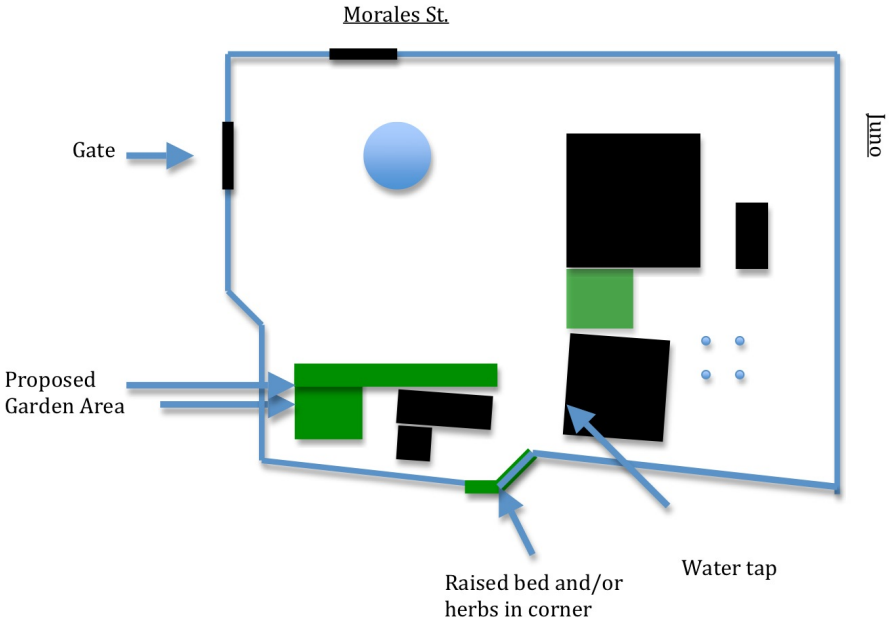
After holding meetings with various staff and community members, we believe the most viable location for a community garden is next to the Tusla and Kiva. This decision was made for the following reasons:

(1) the concerns presented by community members directed us to the location,
(2) because the area is enclosed by a fence,
(3) it is linked to other important activities,
(4) it is handicap accessible,
(5) has sun, soil and shade, and
(6) has access to food preparation and classroom-like areas.

In addition to a primary garden, we propose an additional raised flowerpot or "container garden" for Elders to use year round at the Elders' Center.

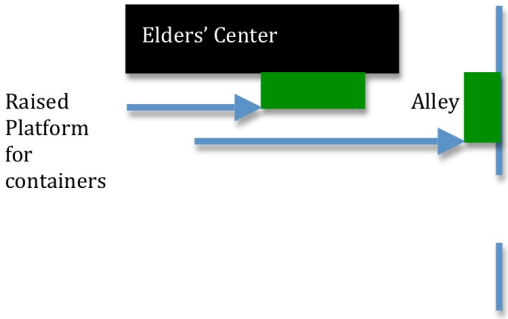
Maps of the Proposed Gardens

Primary Garden Near Kiva and Tusla (Maps are not to scale)



Elder's Center Container Garden

Raised platforms will allow seniors to garden without bending over. Vegetables, herbs, and flowers may be brought inside the Center during the winter so that they can continue to grow year round.



Proposed Budget

Item	Cost	Quantity	Total	Category Total
Raised "Trough" Planters				**$94.00**
1"x8"x10" (sides)	$7.00	6	$42.00	
2"x8"x10" (bottom)	$11.00	4	$44.00	
1 Box 3" Screws	$8.00	1	$8.00	
Scrap Wood (Legs)	$0.00		$0.00	
Corner Braces (from Recycled Metal)	$0.00	24	$0.00	
Raised Platform (Elders) Boards	$11.00	2	$22.00	
Compost Bin				**$0.00**
Compost Bin Recycled Wood)			$0.00	
Tools				**$60.00**
Shovels	$10.00	2	$20.00	
Hoe	$10.00	2	$20.00	
Rake	$10.00	2	$20.00	
Heavy Equipment				**$2.00**
Tiller	$0.00	1	$0.00	
Tiller Fuel	$2.00	1	$2.00	
Assorted Items				**$290.00**
Garden Hose (100 FT)	$45.00	1	$45.00	
Flower Pots	$8.00	15	$120.00	
Mulch	$15.00	5	$75.00	
Seed Packets	$0.00	200	$0.00	
Tomato/Bean Wire	$35.00	1	$35.00	
Stakes	$0.50	30	$15.00	
	Cost:		**Total Cost**	**$446.00**

Income: Sean Bruna (300 estimated)
Housing Dept. (Pending)

Cost Comparison:
Cost of treating the complications of diabetes averages $13,243/patient per year.

Next Steps

1) Move vigas from garden area closer to Kiva.

2) Sean Bruna will work with Ana Lopez to develop a Parent-Child Health Education and Diabetes Prevention Curriculum and will work with other departments to develop curriculums if they are interested.

3) The community garden web page needs a name for a web address. A contest may be held in the future to think of a name.
   The current address is www.unm.edu/~sbruna/ydsp

4) Pending Council approval, the following dates were selected for upcoming events (please save the date; Sean Bruna will make flyers for upcoming events and work with CHC to distribute)

   Garden Planning Preparation Meeting
   Friday, February 20, 1:30 PM – CHC Auditorium
   Planning Meeting to prepare for following garden work weekend

   Garden Work Day
   Saturday, February 28, 10:00AM - Tusla & Kiva Area
   All invited to look at land, map out garden and prepare soil.
   Bring tools and gloves if you have them (fork, hoe, shovel, pick, etc.)

   Garden Planting
   Sunday, March 22 - Tusla & Kiva Area
   Events and Activities to be determined

Contact Information

Dr. Haddy, Director, Community Health Center
ghaddy@ydsp-nsn.gov
915-860-6131

Ms. Ana Lopez, Diabetes Program Supervisor, Community Health Center
alopez.chc@ydsp-nsn.gov
915-860-6131

Mr. Refugio Ortiz, Community Member
915-860-2469

Sean Bruna, PhD. Candidate, University of New Mexico
sbruna@unm.edu
(505) 610-0667

Additional Resources

Links for information about community gardens

http://www.communitygarden.org/learn/
http://www.mindspring.com/~communitygardens/
http://www.hungrylobo.com/garden.htm

Articles

(Attached) Diabetes on the Navajo nation: what role can community gardens and agriculture extension play to reduce it? Primary author: Lombard

(Attached) Editor's Commentary: Decolonizing Our Diets By Recovering Our Ancestors' Gardens. By Mihesuah

Indians' Water Rights Give Hope for Better Health
NYTIMES, by Archibold
http://www.nytimes.com/2008/08/31/us/31diabetes.html?_r=1&ei=5070&emc=eta1&oref=slogin

Photos of an urban community garden

http://picasaweb.google.com/abqpatch/BarelasCommunityCenterGarden#

Garden Flyers

Garden Signs

Photo 3: *Paihuila* (tomato)

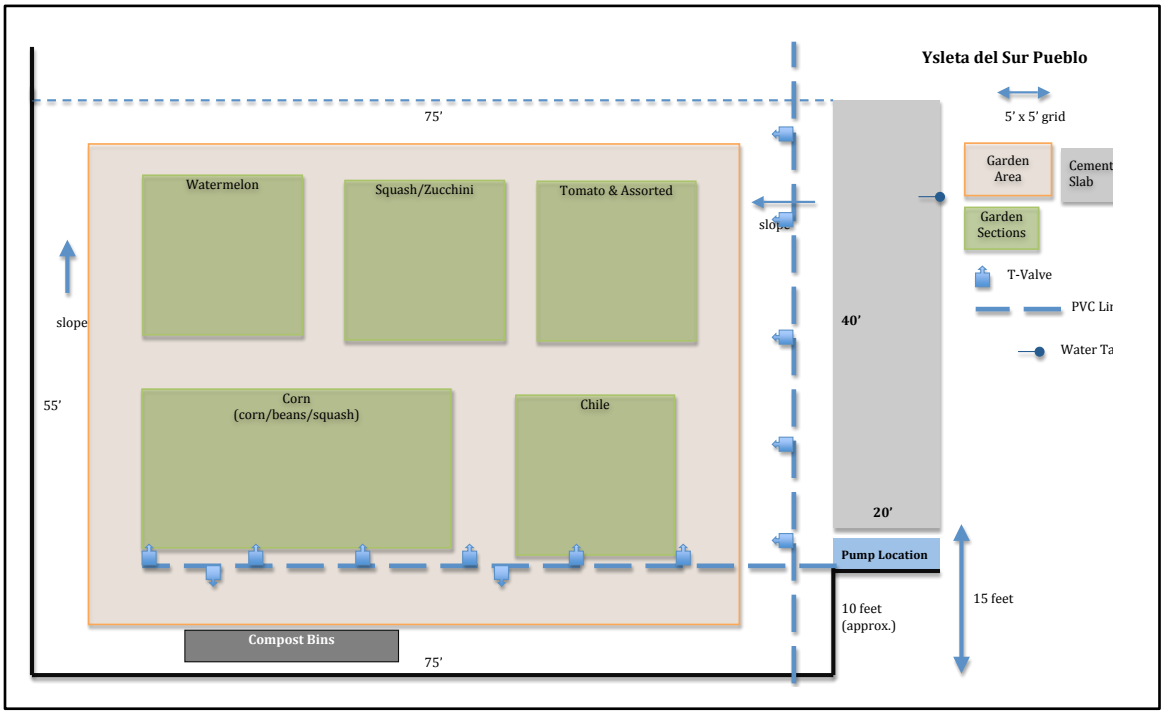
Photo 4: *Childi-shur* (green chile)

Photo 5: *I'ah* (corn)

Photo 6: Lafa'pa (watermelon)

Expanded Garden Design for Second Year

In the second year of the garden, a PVC watering system was added to make it easier to water the garden (indicated in blue). The green squares indicate sections for different plants.



Appendix G: Knowledge, Behavior and Attitude Survey

Knowledge, Behavior and Attitude Survey (Paper Copy)

Yellow highlight indicates correct answer.

Ysleta del Sur Pueblo Diabetes Prevention Survey

Welcome to the Ysleta del Sur Pueblo Diabetes Prevention survey. This survey will take approximately 15-20 minutes to complete

Name: _____

Today's Date: _____

1. Have you (or you and your parents/guardian) read and signed a consent form?

- ◯ No
- ◯ Yes

If Yes, enter your name here: _____

2. Do you understand the consent form and agree to take this anonymous survey?

- ◯ Yes
- ◯ No

Welcome to the Ysleta del Sur Pueblo
Diabetes Prevention Survey

Please answer the following questions by circling the best answer.

3. The diabetes diet is:
   - The way most people eat
   - A healthy diet for most people
   - Too high in carbohydrate for most people
   - Too high in protein for most people

4. Which of the following is highest in carbohydrate?
   - Baked chicken
   - Swiss cheese
   - Baked potato
   - Peanut butter

5. Which of the following is highest in fat?
   - Low fat milk
   - Orange juice
   - Corn
   - Honey

6. I am currently
   - employed by the tribe.
   - employed at a non-tribal business.
   - not employed.
   - other

7. Which of the following is a sugar free food?
   - Any unsweetened food
   - Any diabetic food
   - Any food that says sugar free on the label
   - Any food that has less than 20 calories per serving

8. Glycosylated hemoglobin (hemoglobin A1) is a test that is a measure of your average blood glucose level for the past:

- ◯ Day
- ◯ Week
- ◯ 3 to 4 months
- ◯ 6 months

9. Which is the best method for testing blood glucose?

- ◯ Urine testing
- ◯ Blood testing
- ◯ Both are equally good
- ◯ None are good

10. I am

- ◯ an enrolled tribal member of Ysleta del Sur Pueblo.
- ◯ a tribal descendent of Ysleta del Sur Pueblo.
- ◯ Other:

11. What effect does unsweetened fruit juice have on blood glucose?

- ◯ Lowers it
- ◯ Raises it
- ◯ Has no effect

12. Which should not be used to treat low blood glucose?

- ◯ 3 hard candies
- ◯ ½ cup orange juice
- ◯ 1 cup diet soft drink
- ◯ 1 cup skim milk

13. For a person in good control, what effect does exercise have on blood glucose?
    - Lowers it
    - Raises it
    - Has no effect
    - Has no effect depending on the individuals age

14. Infection is likely to cause:
    - An increase in blood glucose
    - A decrease in blood glucose
    - No change in blood glucose

15. Do you use, or know individuals that use herbs, plants, or home remedies to manage diabetes?
    - Yes
    - No

    If yes, please list examples of the remedies:

16. The best way to take care of your feet is to:
    - Look at and wash them every day
    - Massage them with alcohol every day
    - Soak them for one hour each day
    - Buy shoes a size larger than usual

17. Eating foods lower in fat decreases you risk for:
    - Nerve disease
    - Kidney disease
    - Heart disease
    - Eye disease

18. Numbness and tingling may be a symptom of:
    - Kidney disease
    - Nerve disease
    - Eye disease
    - Liver disease

19. Which of the following is usually not associated with diabetes:
    - Vision problems
    - Kidney problems
    - Nerve problems
    - Lung problems

20. Does a serving of beer or wine will help manage blood sugar levels?
    - Yes
    - No
    - Other

21. Signs of ketoacidosis include:
    - Shaking
    - Sweating
    - Vomiting
    - Low blood glucose
    - I do not know what ketoacidosis is

22. If you are sick with the flu, which of the following changes should you make?
    - Take less insulin
    - Drink less liquids
    - Eat more proteins
    - Test for glucose and ketones more often

23. If you have taken intermediate-acting insulin (NPH or Lente), you most likely to have an insulin reaction in:
    - 13 hours
    - 2 hours
    - 12 hours
    - More than 15 hours

24. You realize just before lunch time that you forgot to take your insulin before breakfast. What should you do now?
    - ◯ Skip lunch to lower your blood glucose
    - ◯ Take the insulin that you usually take at breakfast
    - ◯ Take twice as much insulin as you usually take at breakfast
    - ◯ Check your blood glucose level to decide how much you should take

25. If you are beginning to have an insulin reaction, you should:
    - ◯ Exercise
    - ◯ Lie down and rest
    - ◯ Drink some juice
    - ◯ Take regular insulin
    - ◯ I do not know what on insulin reaction is.

26. Low blood glucose may be caused by:
    - ◯ Too much insulin
    - ◯ Too little insulin
    - ◯ Too much food
    - ◯ Too little exercise

27. If you take your morning insulin but skip breakfast your blood glucose level will usually:
    - ◯ Increase
    - ◯ Decrease
    - ◯ Remain the same

28. High blood glucose may be caused by:
    - ◯ Not enough insulin
    - ◯ Skipping meals
    - ◯ Delaying your snack
    - ◯ Large ketones in your urine

29. Which one of the following will most likely cause an insulin reaction:

- Montaña exercise
- Infection
- Overeating
- Not taking insulin

30. Type II diabetes can be prevented or delayed?

- True
- False
- Depending on family history, only
- Depending on age, only

31. To help prevent diabetes, doctors suggest exercising:

- Every day
- Twice a week
- Three times a week
- Monthly

32. To help prevent diabetes, doctors suggest exercising for how long?

- 10 minutes
- 15-20 minutes
- 45 minutes
- One hour or more

33. To help prevent diabetes, doctors suggest the following types of exercise:

- Walking quickly
- Running
- Dancing
- Any of the above

34. My family has a history of diabetes (i.e. mother, father, brother, sister, elder grandparent):
    - Yes
    - No
    - I do not know.

35. To help prevent diabetes, doctors suggest eating meals that are mostly:
    - Fruits and vegetables
    - Protein
    - Starch
    - Beans

36. Which of the following is the healthiest drink while exercising or dancing:
    - Water
    - Kool-Aid
    - Diet Soda/Coke
    - Regular Soda/Coke

37. Being diagnosed with “Pre-Diabetes” or as "Pre-Diabetic" means I will eventually have diabetes?
    - True
    - False

38. I will have diabetes if someone in my family already has diabetes:
    - True
    - False

39. Children cannot have type II diabetes:

- ◯ True
- ◯ False

40. “Susto" or "gusto” can cause diabetes?

- ◯ Yes
- ◯ No
- ◯ Other:

41. I have attended a diabetes class or workshop offered by the Diabetes Program?

- ◯ Yes
- ◯ No

42. In the last month I used the wellness center:

- ◯ Daily
- ◯ Weekly
- ◯ Every other week
- ◯ Never
- ◯ Other:

43. My favorite three places to go shopping for groceries are (check three that apply):

- ☐ Wal-Mart (Wal-Mart, Super “Blue” Wal-Mart, or Neighborhood Wal-Mart)
- ☐ Pro’s Ranch Market
- ☐ JR's Produce
- ☐ Running Bear
- ☐ “Joes” at Alameda & Candelaria
- ☐ SNAP or Lone Star Market
- ☐ Other:
- ☐ Super Target (Joe Battle)
- ☐ Lowes Big-8
- ☐ Produce Stand (Socorro)
- ☐ San Elizario Market
- ☐ Zeke’s
- ☐ Dollar General

Additional Comments:

44. I am:

- ◯ Male
- ◯ Female

45. How old are you?

I am [ ] years old.

46. Do you have any questions or comments about diabetes, diabetes prevention, or diabetes related practices at Ysleta del Sur Pueblo?

Please type questions or comments here:

47. Do you participate in spiritual or religious activities, services, or dances?

- ◯ Yes
- ◯ No
- ◯ Sometimes

If yes or sometimes, please list or explain which:

48. Please check all that apply:

- ☐ I am a Type I diabetic.
- ☐ I am a Type II diabetic.
- ☐ I have/had gestational diabetes.
- ☐ I am "pre-diabetic".
- ☐ I am not diabetic.
- ☐ I do not know if I am diabetic or not diabetic.
- ☐ Other:

49. Do you have any additional comments? If yes, please list them below:

- ○ No
- ○ Yes

Comments:

50. OPTIONAL:

If you would like to receive a copy of the dissertation, school reports, and tribal briefs once this fieldwork is complete, please fill out your contact information below (your name and contact information is not linked to the survey).

First Name

Last Name

Phone

Email

Address

City

State

Zip Code

Please return this form to Sean Bruna, personally, or mail form to:

Sean Bruna
226 New Haven Drive
El Paso, TX 79907

Thank you for your time!

Your participation will assist Ysleta del Sur Pueblo with diabetes prevention efforts. If you have questions about diabetes or diabetes prevention, please visit or call the Community Health Center at:
Ysleta del Sur Pueblo Community Health Center
9314 Juanchido
El Paso, Texas 79907
Phone: 915-858-1076

Here are some useful links to learn more about diabetes and diabetes prevention:

Ysleta del Sur Pueblo Diabetes Prevention Porthole
http://www.ysletadelsurpueblo.org/html_pages.sstg?id=7&sub1=77&sub2=115%20

National Diabetes Education Program

http://www.ndep.nih.gov/

Indian Heath Service Division of Diabetes Treatment and Prevention
http://www.ihs.gov/MedicalPrograms/diabetes/

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