

AUGUST 31, 2016

Offering a Type 2 Diabetes Prevention Program to State Employees



As required by HB 1, Rider 14 | 84th Legislature, Regular Session, 2015

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Key Findings

Summary of national research

- 1 . Half of American adults are either diabetic or prediabetic.
- 2 . Nine out of 10 Americans with prediabetes don't know they have it.
- 3 . Thirty percent of overweight people have diabetes and 85 percent of diabetics are overweight.
- 4 . Eighty-five percent of people with type 2 diabetes have another chronic health condition by the time they are diagnosed.
- 5 . Sustained lifestyle changes after participating in a Diabetes Prevention Program can prevent or delay the onset of type 2 diabetes for up to 10 years.
- 6 . Eleven state employee benefit plans now offer diabetes prevention programs.

HealthSelect findings

- 1 . Thirteen percent of the ERS study population has diabetes .This group is responsible for 30 percent of HealthSelect costs.
- 2 . ERS estimates that there are 124,000 prediabetics in the study population. Without intervention, another 2,900 high-risk individuals could develop diabetes in 2016, costing the plan another \$12 million.
- 3 . HealthSelect spends \$12,877 a year for a person with diabetes, nearly three times more than it spends for a person without diabetes.
- 4 . The HealthSelect population is older and less healthy than that of other employer-based plans.
- 5 . Study group participants age 50 and older have a 1 in 4 chance of diabetes.
- 6 . Only 54 percent of HealthSelect participants with diabetes take their medication as often as they should.
- 7 . Four agencies have higher than average diabetes prevalence: HHSC, DADS, TDCJ and DSHS.
- 8 . If one out of 16 participants avoids getting diabetes due to Real Appeal, the plan will break even on its investment.

Actionable Findings

- 1 . Offer alternative diabetes prevention program settings.
- 2 . Encourage participants to stick with the program.
- 3 . Focus resources on high-risk individuals.
- 4 . Create incentives for biometric screenings.
- 5 . Promote Real Appeal at high-risk agencies.
- 6 . Continue “pay for performance” strategies.
- 7 . Explore complementary value-based plan design options.

I. Executive Summary

The 84th Texas Legislature directed the Employees Retirement System of Texas (ERS) to examine the growing problem of diabetes among state employees and consider offering a diabetes prevention program.¹ ERS found that 13 percent of the study population had diabetes, but they are responsible for 30 percent of plan costs.²

ERS worked with the Texas Diabetes Council and the HealthSelect of TexasSM (HealthSelect) third-party administrator (TPA) to identify and evaluate two diabetes prevention programs.³ On April 1, 2016, ERS implemented Real Appeal, an online program to help eligible participants lose weight and develop healthier lifestyles. In the first four months, more than 14,000 people enrolled in the Real Appeal program.

HealthSelect paid \$281 million in medical and pharmacy claims for diabetes in FY15. ERS estimates that 124,000 participants in the study population could have prediabetes. About 2,900 high-risk individuals could develop diabetes in 2016 without any intervention, potentially costing the plan another \$12 million this year. If one out of 16 avoids getting diabetes as a result of Real Appeal, the state will breakeven on its investment.

The Centers for Disease Control and Prevention (CDC) reports strong evidence for diabetes prevention through “intensive lifestyle interventions” focused on weight loss. A modest but sustained weight loss of 5 to 7 percent and 150 minutes of exercise a week can reduce a prediabetic’s chances of developing type 2 diabetes by 34 percent over 10 years.⁴



Finding:

Thirteen percent of the ERS study population has diabetes. This group is responsible for 30 percent of HealthSelect costs.



Finding:

ERS estimates that there are 124,000 prediabetics in the study population. Without intervention, 2,900 high-risk individuals could develop diabetes in 2016, costing the plan \$12 million.



Figure 1: What is diabetes?

Diabetes is a chronic incurable disease that affects how the body uses blood sugar (glucose), an important energy source for the brain and cells that make up muscles and tissues. High glucose levels result when the body cannot produce enough insulin or becomes insulin resistant.

Types of Diabetes

Type 1: The body does not make enough insulin. Often begins in childhood; caused by genetics, environmental factors, and a compromised immune system.

Type 2: The body cannot use insulin properly. Can develop at any age and many cases can be prevented. Risk factors include family history, older age, being overweight or inactive, and having high blood pressure or cholesterol.

Prediabetes: High risk for developing type 2 diabetes. Blood sugar is higher than normal but not high enough to be type 2 diabetes. Without intervention, prediabetes will likely develop into type 2 diabetes in 10 years.

Gestational diabetes occurs during pregnancy. Certain hormones can make cells more resistant to insulin, resulting in a high-risk pregnancy.

¹House Bill 1, Article I, Rider 14 (84R -2015) . Diabetes Type 2 Prevention Program for ERS Participants . *Out of funds appropriated above, the Employees Retirement System of Texas (ERS), shall, in consultation with the Texas Diabetes Council (TDC), assess the prevalence of pre-diabetes among the state employee population, and develop an economic analysis related to providing an evidence-based prevention program. If the economic analysis and prevalence data support it, ERS shall, in consultation with TDC and the ERS third-party administrator, develop and implement a cost-effective diabetes Type 2 prevention program for state employees. The result of this analysis and action taken by ERS will be included in a report to the Legislature and Governor on this program by August 31, 2016.*

²Study population includes all HealthSelect participants not enrolled in Medicare primary.

³As of August 31, 2016, United Healthcare is the third-party administrator for HealthSelect of Texas.

⁴Diabetes Prevention Program Research Group, “10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study, *Lancet* . 2009 November 14; 374(9702):1677-1686 . Doi:10 .1016/S0140-6736(09)61457

Scope of the Report

This report provides an overview of the current research on prediabetes and type 2 diabetes, analyzes the cost and prevalence of diabetes in the state employee population, highlights best practice solutions, and evaluates the potential costs and benefits to the State of implementing a diabetes prevention program.

Rider 14 directed ERS to study prevention of type 2 diabetes, so this report focuses on prevention programs, rather than diabetes management. (See *Appendix A* for more information about HealthSelect diabetes programs).

Study population

Rider 14 directed ERS to focus its analysis on state employees only, but this report expands that to about 411,000 HealthSelect employees, retirees, and dependents who are not enrolled in Medicare.⁵ Of this group, 327,000 are potentially eligible for Real Appeal.

Ninety-five percent of eligible employees and 50 percent of retirees enroll in HealthSelect, the basic health plan for state and higher education employees since 1992.⁶ HealthSelect is a self-funded plan, meaning that State and member contributions are pooled into an insurance trust fund, which is held and invested until needed to pay claims.

ERS contracts with a TPA – UnitedHealthcare – to build the HealthSelect provider network, process claims, provide wellness programs, and manage day-to-day operations.

Figure 2:

Study population included 411,000 non-Medicare primary HealthSelect participants

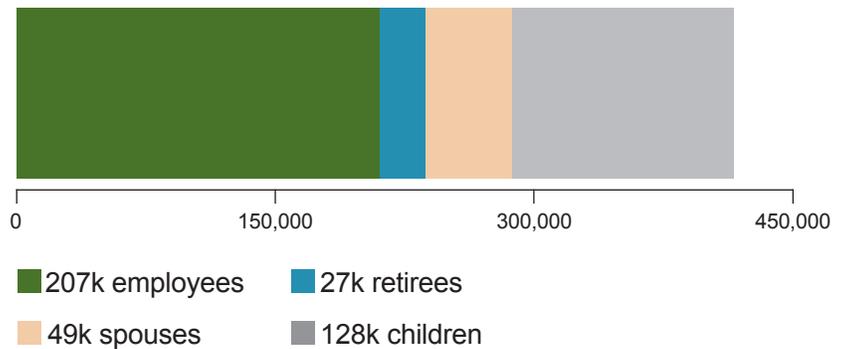
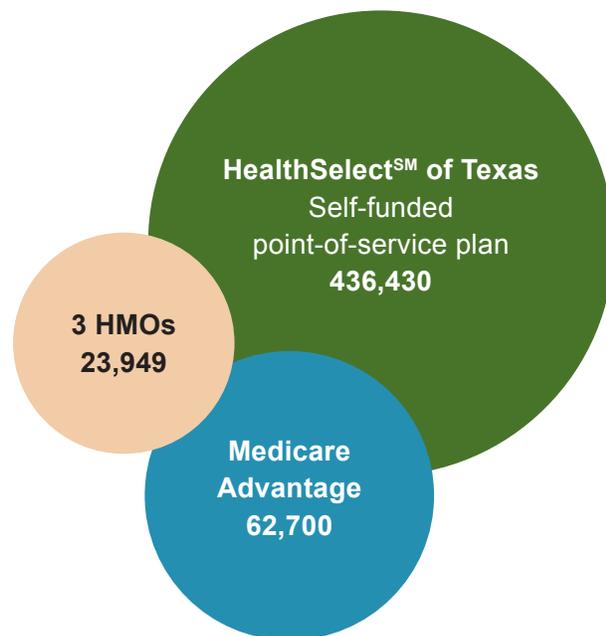


Figure 3:

95% of employees and 50% of retirees enroll in HealthSelect



⁵This report provides a cost analysis of all HealthSelect participants not enrolled in Medicare. This group had an average enrollment size of 411,000 throughout the year.

⁶HealthSelect covers employees, retirees and eligible family members of state agencies, higher education institutions (except the University of Texas and Texas A&M), Texas County and District Retirement System, Texas Municipal Retirement System, and the Community Supervision and Corrections Department.

II. Diabetes: A Growing National Health Crisis

National prevalence of diabetes and prediabetes

According to a 2015 study in the *Journal of the American Medical Association*, 14.3 percent of U.S. adults have diabetes and 38 percent have prediabetes. More than a third of the diabetics identified by a blood test in the study were previously undiagnosed. Over the past 30 years, diabetes prevalence has increased in every age group, in both sexes, in every racial/ethnic group, and by all education and income levels – in part due to increasing rates of obesity.⁷

The CDC reports that diabetes is the seventh leading cause of death in the United States. According to the Texas Diabetes Council, about 10.6 percent of adult Texans are diagnosed with diabetes and another 6.2 percent are diagnosed with prediabetes.⁸ This is just the tip of the iceberg, as nine out of ten Americans with prediabetes are unaware they have it.⁹

Diabetes disproportionately affects racial and ethnic minorities. Compared to non-Hispanic whites, the risk of developing diabetes is 1.2 times higher for Asian Americans, and 1.7 times higher for Hispanics and non-Hispanic blacks.¹⁰ Low-income populations also have a higher prevalence of diabetes.¹¹



Finding:

Half of adult Americans are diabetic or prediabetic.



Finding:

Nine out of ten Americans with prediabetes don't know they have it.



Finding:

Thirty percent of overweight people have diabetes, and 85 percent of diabetics are overweight.

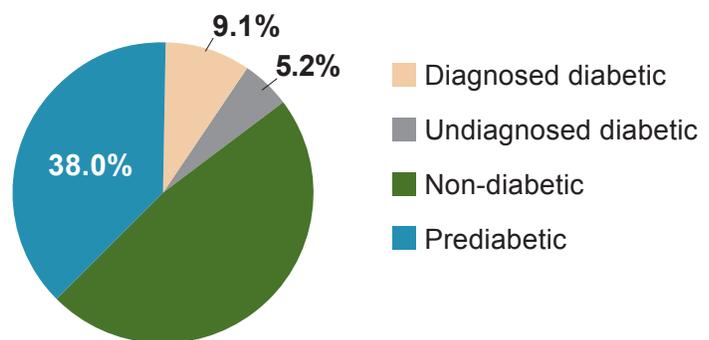


Finding:

Eighty five percent of people with type 2 diabetes have another chronic health condition by the time they are diagnosed.

Figure 4:

Half of American adults are diabetic or prediabetic⁷



⁷Menke, Andy, et al, "Prevalence of and Trends in Diabetes among Adults in the United States, 1988-2012," JAMA . 2015;314(10):1021-1029 .

⁸Texas Diabetes Council, "Statewide Assessment of Existing Programs for the Prevention and Treatment of Diabetes, Nov 2015 .

⁹Centers for Disease Control, "Prediabetes: Could it Be You?" [http://www .cdc .gov/diabetes/pubs/statsreport14/prediabete_infographic .pd](http://www.cdc.gov/diabetes/pubs/statsreport14/prediabete_infographic .pd)

¹⁰The CDC reports that 12 .8% of Hispanic/Latino adults in the US have diagnosed diabetes; 13 .2% of non-Hispanic black adult have diagnosed diabetes; 15 .9% of American Indian/Alaskan Native adults have diagnosed diabetes . Centers for Disease Control and Prevention, National Diabetes Statistics Report . U .S . Department of Health and Human Services . 2

¹¹Rabi, Doreen, et al . BMC Health Services Research . "Associaon of socio-economic status with diabetes prevalence and utilization of diabetes care services" . October 3, 2006

Risk factors for type 2 diabetes

Risk factors for type 2 diabetes include age (60+ years), obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, and physical inactivity . See *Appendix B* to take the CDC self-evaluation to find out if you are at risk for prediabetes.

Stress also increases diabetes risk . Many studies link stress to poor health, but a new study by Rice University has identified the specific biological pathway of the chain reaction from anxiety to inflammation to type 2 diabetes.¹²

There is a close association between obesity and diabetes . Both conditions are characterized by high insulin levels.¹³ “Today, roughly 30 percent of overweight people have the disease, and 85 percent of diabetics are overweight .¹⁴

Researchers have even coined the term “*diabesity*” to describe the relationship between obesity, type 2 diabetes and resulting complications.¹⁵ Not surprisingly, the most important lifestyle change recommended for reducing one’s risk of type 2 diabetes is losing weight.

Comorbidities and complications

Comorbidity exists when an individual has two or more chronic diseases or conditions at the same time . Eighty five percent of patients with newly diagnosed type 2 diabetes had at least one comorbid chronic disease at the time of their diagnosis .The most common comorbid condition with type 2 diabetes is cardiovascular disease, another potentially preventable disease.¹⁶

Having more than one chronic condition negatively impacts your ability to self-manage your illness, your quality of life, and your emotional wellbeing . It also substantially increases healthcare utilization.

Adults with diabetes are two to four times more likely to die from heart disease or experience a stroke than adults without diabetes . Untreated, diabetes can lead to end-stage renal disease, vision problems, nerve problems associated with the digestive tract and reproductive system, and amputations.¹⁷

Indirect costs of diabetes

Diabetes not only takes a toll on diabetics and their families, it significantly affects worker productivity. Nationwide in 2012, the economic cost of diabetes was estimated to be \$245 billion .This includes \$176 billion in direct medical costs and \$69 billion due to reduced productivity (absenteeism, presenteeism, disability, and early mortality).¹⁸

Figure 5:
The most common comorbid condition with type 2 diabetes is cardiovascular disease¹⁶

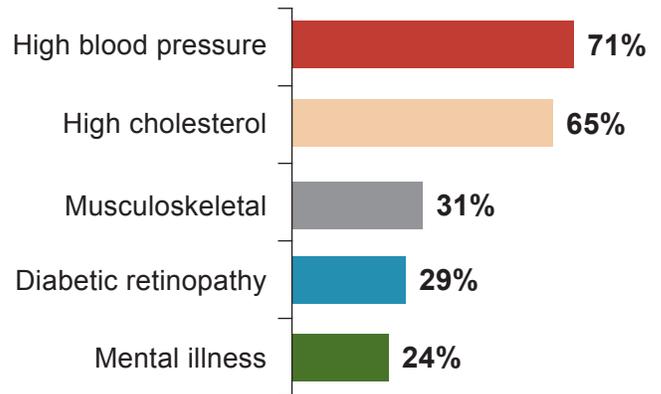


Figure 6:
Long-term complications of type 2 diabetes

Eyes	Cataracts / glaucoma / retinopathy
Kidneys	Kidney failure / end-stage renal disease
Feet	Peripheral neuropathy /amputation
Heart	Heart attack, stroke, vessel blockage
Brain	Alzheimer’s disease
Skin	Bacterial and fungal infections
Cancer	Liver, pancreas, and endometrial cancer

¹²Rice University. “Stress-diabetes link detailed in new study: Connection established between anxiety control, inflammation, and Type 2 diabetes .” Science Daily , 6 June 2016.

¹³Fung, Jason, “The New Science of Diabesity – Hormonal Obesity XI,” *Aetiology of Obesity, Health and Nutrition, Hormonal Obesity*, March 2014.

¹⁴Powell, Alvin, “Obesity? Diabetes? We’ve been set up,” *Harvard Gazette*, March 7, 2012.

¹⁵Golay, A . and Ybarra, J ., “Link between obesity and diabetes,” *Best Pract Res Clin Endocrinol Metab* . 2005 Dec;19(4):649-6

¹⁶Luijckx, Hilde, et al. “Prevalence and incidence density rates of chronic comorbidity in type 2 diabetes patients: an exploratory cohort study,” *BMC Medicine* 2012 10:128.

¹⁷Centers for Disease Control . *National Diabetes Statistics Report 2014*, page 5

¹⁸American Diabetes Association . “Economic Costs of Diabetes in the US in 2012, *Diabetes Care* 2013 Mar; DC_122625

III . CostAnd Prevalence of Diabetes In Healthselect

Although claims codes do exist for obesity and prediabetes, they often are unreported by providers . Therefore, estimating the prevalence of prediabetes in the HealthSelect study population is not an exact science .

Data reported throughout this report applies to 411,000 non-Medicare primary HealthSelect participants . Within that group, there are 327,000 participants age 18 to 75, who are potentially eligible to participate in a diabetes prevention program such as Real Appeal.

Using the JAMA study statistic cited on page 4 of this report – 38 percent of adult Americans are prediabetic – ERS estimated that 124,000 of prevention-program eligible HealthSelect participants may be prediabetic.¹⁹

Diabetes is a costly concern for HealthSelect

Thirteen percent of HealthSelect non-Medicare primary participants were identified through claims as having a diagnosis of type 1 or 2 diabetes . This group accounts for 30 percent of total HealthSelect spend.

HealthSelect spending on people with diabetes is 2 . times higher than spending on those without diabetes. This compares to a 2 .3 diferential at the national level.²⁰

Those with diabetes have 44 percent more emergency room visits and more than twice as many hospital stays. They stay in the hospital longer and have more hospital readmissions . One long-term evaluation metric for diabetes prevention program could be whether ER utilization has changed for participants in the program. Musculoskeletal conditions are the only other chronic health concern with such a significant financial impact on the plan.



Finding:

HealthSelect spends \$12,877 a year for a person with diabetes, nearly three times more than it spends for a person without diabetes.



Finding:

The HealthSelect population is older and less healthy than that of other employer-based health plans.



Finding:

Study group participants age 50 and older have a 1 in 4 chance of having diabetes.



Finding:

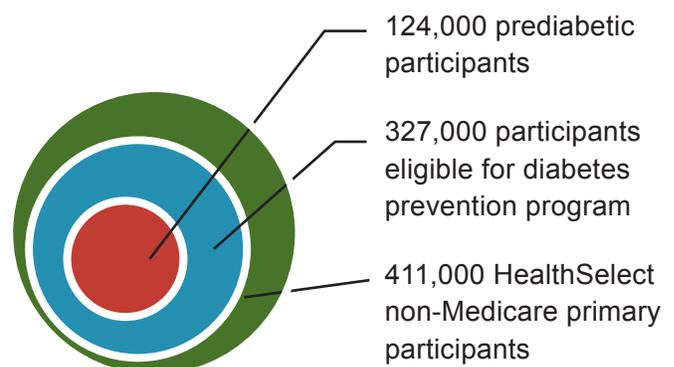
Only 54% of HealthSelect participants with diabetes take their medication as often as they should.



Finding:

Four state agencies have higher than average diabetes prevalence: HHSC, DADS, TDCJ, and DSHS.

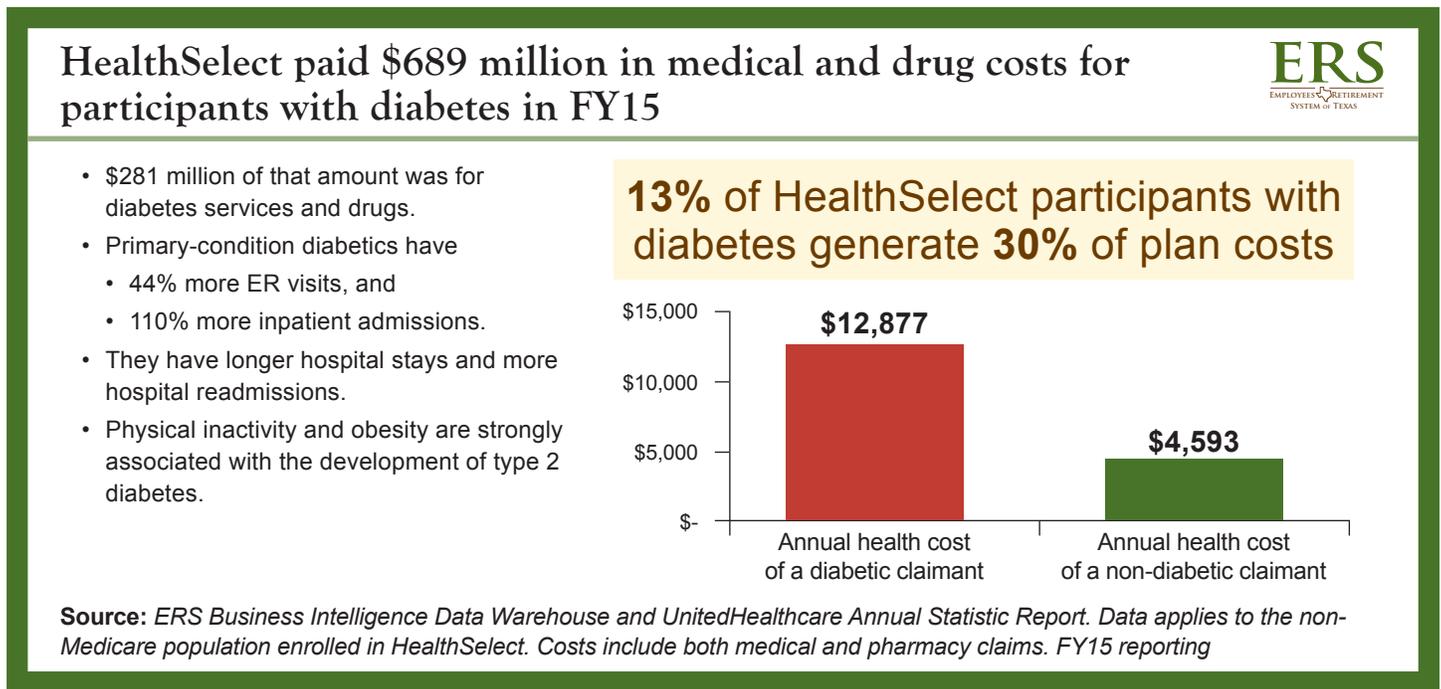
Figure 7:
Potential prevalence of prediabetes in the HealthSelect study



¹⁹Thirty-eight percent of the 327,000 HealthSelect participants eligible for Real Appeal equals 124,000 potential prediabetics.

²⁰American Diabetes Association . "Economic Costs of Diabetes in the US in 2012, Diabetes Care 2013 Mar; DC_12262

Figure 8: FAST FACTS: Diabetes in the HealthSelect population



The HealthSelect population is higher risk compared to private-sector plans

Because the HealthSelect population is aging and a majority is female, they have a 38 percent higher demographic risk for poor health than UnitedHealthcare’s public and private sector book-of-business nationwide.

The average age of the HealthSelect study population is 47 . More than half (57%) are women and 2 percent enroll their dependents in the plan . Seve out of 10 of the highest cost HealthSelect claims are dependent claims .The two most expensive groups for the plan are spouses, and participants age 55 to 64.

Although the HealthSelect retiree population has been growing the fastest, retirees who have Medicare-primary were not included in this analysis for two reasons . Its difficult to evaluate the true medical cost of that population because Medicare pays their claims first (HealthSelect pays secondary) .Also, Medicare-primary participants are not eligible to participate in Real Appeal.

In addition to a higher demographic risk, HealthSelect participants also have a 10 .5 percent high claims risk than other employer-based plans in UnitedHealthcare’s book of business . Higher risk mean higher costs, especially when it comes to spending on diabetes and related comorbidities and complications.

Figure 9: HealthSelect demographic risk is higher than other employer-based plans (based on age and gender, compared to UnitedHealthcare’s book of business)

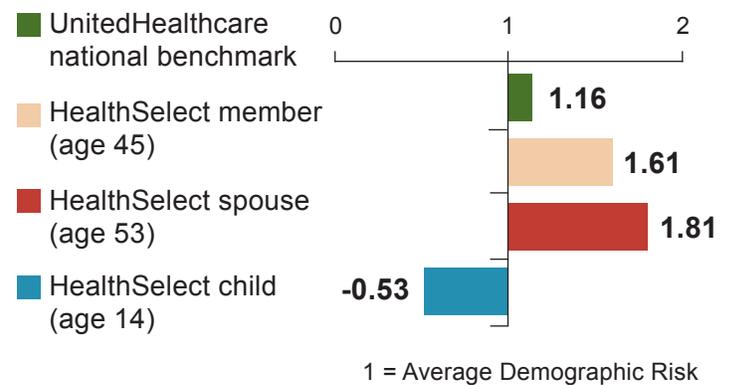
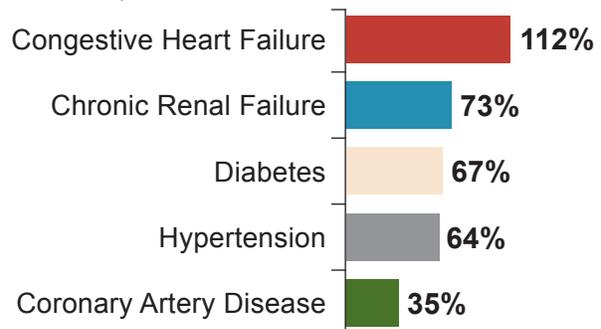


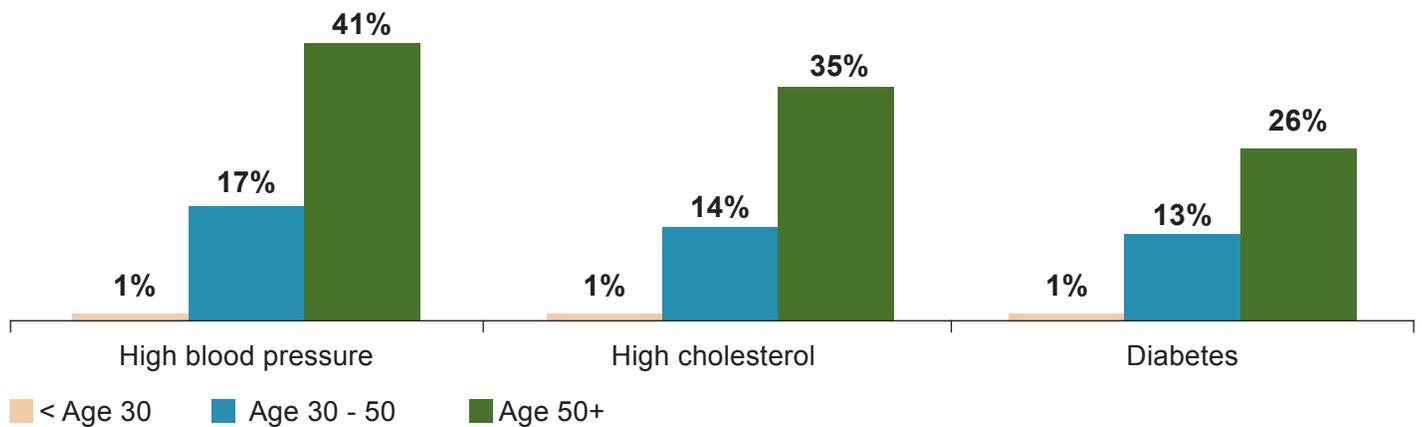
Figure 10: HealthSelect claims costs exceed other employer-based plans (compared to UnitedHealthcare’s book of business)



Claims costs are higher because HealthSelect participants are less healthy . HealthSelect also has lo participation levels in voluntary wellness and disease management programs .As we age, we are more likely to develop a chronic illness . Once HealthSelec participants turn 50, they have a one-in-four chance of having diabetes.

In line with national statistics, HealthSelect claims data show that half of plan diabetics have a circulatory problem such as hypertension, congestive heart failure, a stroke, or kidney failure . Forty-three percent have claims for musculoskeletal and connective tissue disorders, such as arthritis or fibromyalgia .And 16 percent have claims for neoplasms . Some of the mos common cancers associated with type 2 diabetes are breast, colon, and pancreatic cancer.

Figure 11:
By age 50, a study group participant has a 1 in 4 chance of diabetes, FY15



²¹Cannata, D., et al, "Type 2 diabetes and cancer: what is the connection?" Mt Sinai J Med, 2010 Mar-Apr, 77(2): 197-213. doi: 10.1002/msj.20167

Spending on antidiabetic drugs has more than doubled in five years

The dramatic increase in spending on antidiabetic drugs is partly due to market forces: there are fewer generic drug choices for diabetics, and drug manufacturer prices for brand name drugs are on the rise. This is in contrast to the hypertension (“high-blood pressure”) drug category, where many generic options are available. HealthSelect spends three times more on the diabetes therapeutic category than it does on the hypertension category of drugs.²²

Another contributor to rising plan costs for diabetes drugs is a phenomenon called “member cost share leveraging.” Because HealthSelect participants pay flat \$35 copays for preferred brand name drugs, when the market price increases, the state absorbs the difference while participants are held harmless.

While 75 percent of HealthSelect participants with diabetes have filled a diabetes prescription, claims data shows that only 54 percent take their medication as often as they should.²³ It’s unclear whether this is due to the expense, the side effects, or something else. The adherence number may be low because some people fill their generic prescriptions outside the health plan, at pharmacies that offer \$4 or \$5 a month refills. When no claim is filed, HealthSelect cannot track medication adherence.

The State of Kentucky recently incentivized diabetics to better manage their health by making some diabetic drugs and testing supplies available free of charge to participants.

Figure 12:

HealthSelect spending on antidiabetic medications has more than doubled in five years

FY11-FY15 in \$ millions

HealthSelect non-Medicare primary population



²²The Texas Diabetes Council noted that diabetes and hypertension may occur together as part of a complex set of metabolic risk factors. Diabetes often requires a complex, multifaceted treatment plan while hypertension treatment may be straightforward. As seen elsewhere in this report, diabetics have a high incidence of comorbid cardiovascular disease.

²³According to Caremark, pharmacy benefit manager, the HealthSelect diabetic population has an overall “medication possession ratio” of 74.9%. Only 54.2% of HealthSelect diabetic participants are considered optimally adherent. To be considered optimally adherent, you must fill 80% of the prescriptions needed to manage your diabetes

HealthSelect diabetes incidence varies significantly by region

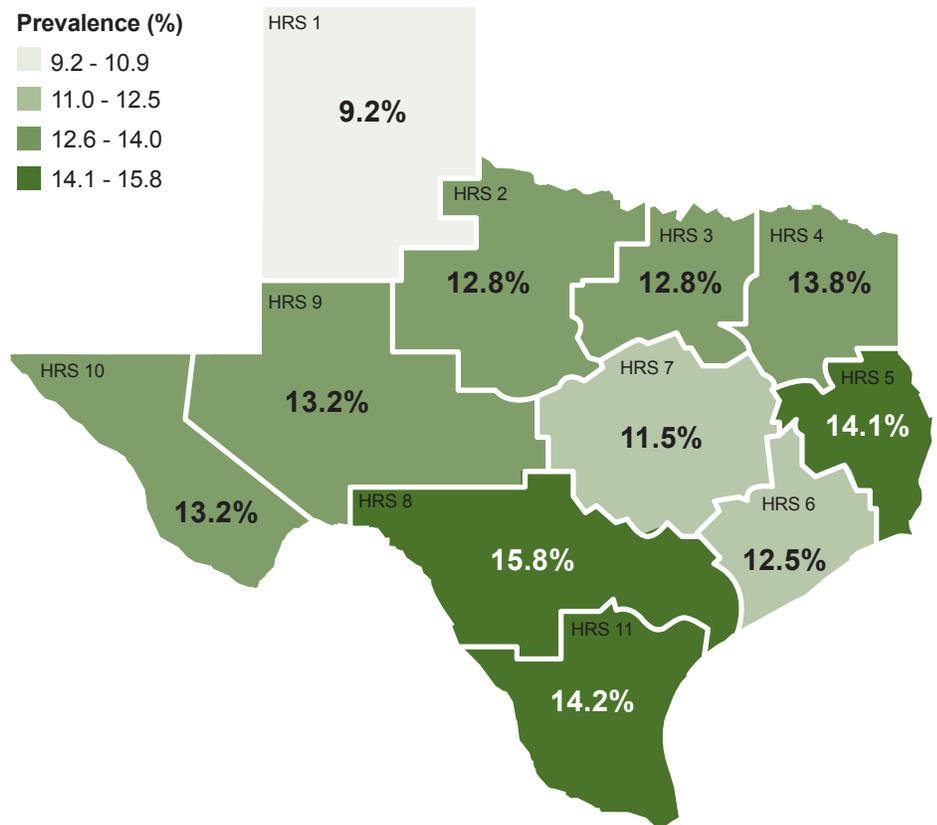
Based on available claims data, the estimated incidence of diabetes among the HealthSelect study population varies significantly, depending on where people live and work. South Texas has the highest incidence, and the Panhandle region has the lowest.

Four state agencies have higher than average diabetes prevalence – the Health and Human Services Commission (HHSC), Department of Aging and Disability Services (DADS), Texas Department of Criminal Justice (TDCJ) and Department of State Health Services (DSHS).

ERS will analyze Real Appeal participation data to ensure that employees in high-risk geographic regions and agencies are aware that a free prevention program is available.

Early utilization reports from Real Appeal show that employees of 154 agencies and institutions of higher education have enrolled in the program.

Figure 13:
Diabetes incidence is highest in the San Antonio area and the Valley, FY15
 (HealthSelect employees, retirees and dependents, excluding Medicare-primary)



IV. Evidence-based Programs

The most frequently cited statistic for the effectiveness of an evidence-based Diabetes Prevention Program comes from a 2002 study in the *New England Journal of Medicine (NEJM)*. Researchers found that prediabetics can reduce their chances of developing type 2 diabetes by 58 percent over three years with an “intensive lifestyle intervention” (ILI) aimed at modest sustained weight loss and exercise. (See Figure 14).²⁴

Do intensive lifestyle interventions work long-term?

A 10-year follow up on the participants in the *NEJM* study found that the lifestyle group partially regained the weight they had lost, while modest weight loss with metformin was maintained. Diabetes incidence was reduced by 34 percent in the lifestyle group and 18 percent in the metformin group compared with placebo. The follow-up study concluded that prevention or delay of diabetes with lifestyle intervention or metformin can persist for at least 10 years.²⁵

A new meta-analysis shows that diabetes prevention programs can also reduce one’s risk for metabolic syndrome, which is a group of risk factors that raises your risk for heart disease, diabetes and stroke. Metabolic syndrome risk factors include: a large waistline (“apple shape”), high triglycerides, low HDL (“good”) cholesterol, high blood pressure, and high fasting blood sugar.²⁶



Finding:

Sustained lifestyle changes after participating in a Diabetes Prevention Program can prevent or delay the onset of type 2 diabetes for up to 10 years.



Finding:

Eleven state employee benefit plans now offer diabetes prevention programs.

Figure 14:

Can an intensive lifestyle intervention prevent type 2 diabetes?

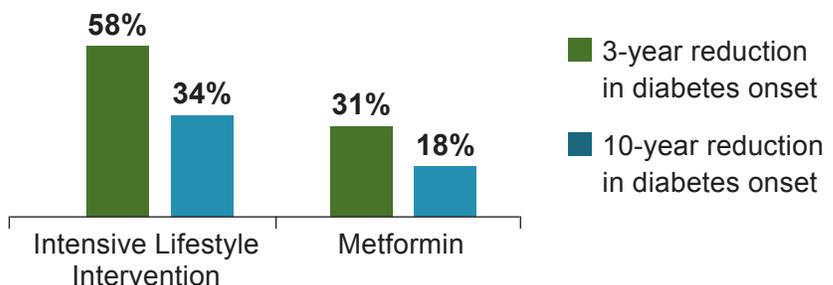
In 2002, the Diabetes Prevention Program (DPP) Research Group published the results of their randomized clinical trial, testing whether an ILI was more effective than medication (metformin) or a placebo in preventing type 2 diabetes. Study participants were identified as high risk through blood work that confirmed their diagnosis of prediabetes.

The study concluded that over three years, “the lifestyle intervention reduced the incidence by 58% and metformin by 31%, as compared with placebo.”

N Engl J Med, Vol. 346, No. 6, Feb 7, 2002

Figure 15:

Intensive lifestyle intervention vs. medication: Which is more effective? (compared to placebo)



²⁴Diabetes Prevention Program Research Group, “Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin,” *New England Journal of Medicine*, Vol . 346, No . 6, February 200

²⁵Diabetes Prevention Program Research Group, “10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study, *Lancet* . 2009 November 14; 374(9702):1677-1686 . Doi:10 .1016/S0140-6736(09)61457

²⁶Mudaliar, Uma, et al, “Cardiometabolic Risk Factor Changes Observed in DPPs in US Settings: A Systematic Review and Meta-analysis,” *PLoS Med* 13(7): e1002095 . doi:10 .1371/journal .pmed .100

CDC National Diabetes Prevention Program

In 2009, the CDC established a National Diabetes Prevention Program (NDPP) and provided grant money for eligible entities to create community-based model sites. These entities were charged with working with the health care delivery system to identify high-risk persons and refer them to cost-effective group-based ILI programs. The YMCA (“the Y”) was one of the earliest NDPP providers.

To earn CDC recognition, the program must be geared to the overarching goal of preventing type 2 diabetes and meet the following guidelines:

- All participants must be ≥18 years old and have a BMI of ≥24 kg/2;

- At least 50 percent of participants must have a blood test or diagnosis indicating prediabetes;
- Up to 50 percent of participants can qualify using the CDC Prediabetes Screening Test (see Appendix B);
- It must follow a CDC-approved curriculum, with 16 hour-long classes focused on long-term improvements in nutrition and physical activity;
- It must last a full year and employ specially trained lifestyle coaches.

There are 23 CDC-recognized organizations providing NDPPs in 13 cities across Texas.²⁷ A dozen national providers offer CDC-approved online programs, or a combination of online and in-person programs.

Figure 16:

State employees in 11 states have access to a diabetes lifestyle intervention program

States with CDC-approved Diabetes Prevention Programs		
	# eligible	Type of program
Colorado	43,326	CDC approved + Real Appeal
Kentucky	264,000	CDC approved + Real Appeal
Louisiana	180,000	CDC approved + PREVENT
Minnesota	90,000	CDC approved + Virtual LCP
Montana	In progress	CDC approved
New Hampshire	28,700	CDC approved
New Mexico	In progress	CDC approved
Washington	350,000	CDC approved
States with other Intensive Lifestyle Intervention programs		
	# eligible	Type of program
Maine	30,000	WellStarME
Ohio	74,200	Take Charge, Live Well
Texas	327,000	Real Appeal

²⁷Texas cities with CDC-approved programs include Alvin, Beaumont, Dallas, Denton, Flower Mound, Gainesville, Houston, Lewisville, Midland, Pearland, Plano, Waco, and Wichita Falls. Click this link for a complete list of providers: https://nccd.cdc.gov/DDT_DPRP/CitiesList.aspx?STATE=TX

State Diabetes Prevention Program

In 2013, the National Association of Chronic Disease Directors (NACDD) collaborated with the CDC to create the State Diabetes Prevention Project. The goal of this project was to engage eight state health departments in statewide or regional efforts to increase the use of the national DPP evidence-based lifestyle change program. States received technical assistance for expanding awareness, encouraging provider referrals, and improving access to and reimbursement for CDC-approved evidence-based programs.

Eight state employee benefit plans now offer CDC-approved NDPPs as a health benefit for state employees. Colorado and Montana also cover NDP benefits for Medicaid participants. Another three states (including Texas) offer (non-CDC approved) intensive lifestyle intervention program focused on weight loss.

Interventions Evaluated by ERS

ERS evaluated two intensive lifestyle intervention approaches for the purposes of this report: UnitedHealthcare's online program called Real Appeal, and a brick-and-mortar program offered through the Y. The side-by-side comparison on page 14 compares program features.

YMCA Diabetes Prevention Program

The Y has partnered with the CDC to deliver a group-based adaptation of the successful NDPP in the community, by making the program available at local YMCAs. Contracting with YMCA of Texas would offer HealthSelect participants a brick-and-mortar alternative for those who prefer face-to-face classes instead of online classes. ERS is currently evaluating the Y program as a new network provider.

Real Appeal

Real Appeal is a virtual ILLI program offered exclusively by UnitedHealthcare that is aimed at reducing the incidence of diabetes and preventing heart disease and stroke through a supportive online program encouraging weight management and exercise. It employs many of the same strategies as the NDPP and has applied for CDC approval. On April 1, 2016, Real Appeal became available at no charge to eligible HealthSelect participants between the ages of 18 and 75.

Figure 17:
Side-by-side comparison of programs evaluated by ERS

	Real Appeal	YMCA of America NDPP
Delivery	Online, virtual program	Community-based settings, at local YMCAs.
CDC-qualified	No	Yes
Eligibility	HealthSelect participants age 18 to 75 with a BMI \geq 23. Low risk participants receive a lower level intervention than participants who are obese or overweight with diabetes or cardiovascular risk factors.	Members are eligible to participate if they have a BMI >25, a 2-hour plasma glucose between 149-199 mg/dl, or A1C level between 5.7% - 6.4% , or meet CDC risk factors
Methodology	Virtual intensive lifestyle intervention program, including 16-weeks of 30-minute educational programming in online group sessions supporting weight loss and exercise. Participants complete an initial “customization session” with an intake specialist, who assesses the clinical appropriateness of the program and other factors. Online sessions are offered for 52 weeks, and at-risk participants can also request one individualized coaching session per week.	In-person ILI at local Y. Participants are assigned to small groups based on similarities, and attend 16 weekly one-hour sessions with educational programming at the Y, followed by monthly coaching sessions up to a year. CDC-approved lifestyle coaches educate and support participants in achieving healthier eating habits and increasing physical activity. The YMCA also offers a bilingual English/Spanish program.
Goals and outcomes	Short-term goal is for participants to achieve clinically significant weight loss, 5-7% of body weight. Long-term goal is to slow or prevent the onset of diabetes or cardiovascular disease among high-risk individuals, and improve general health for all others.	Short-term goal is for participants to achieve clinically significant weight loss, 5-7% of body weight and 150 minutes of physical activity per week. Long-term goal is to slow or prevent the onset of diabetes among prediabetics.
Cost to the participant	No cost to eligible HealthSelect participants.	No cost to eligible HealthSelect participants
Cost to the plan	Maximum cost of \$695; average cost of \$251 per enrollee based on actual plan experience. The customization session costs \$103 and group sessions with educational programming cost \$37 apiece. Participants can continue to attend coaching sessions up to a year, but the plan will only be billed for up to 16 sessions. Encounters are billed to the plan and paid like any other medical claim. There is no additional administrative fee.	Maximum cost of \$592; average cost of \$429 per participant. Each \$37 coaching session with educational programming is billed to ERS and paid like any other medical claim. Participants attend 12 months of sessions but ERS is only billed for 16 sessions. There is no additional administrative fee.
Pay for performance	While participants can attend up to 52-weeks of online coaching sessions, the plan is only billed up to a maximum of 16 weeks total. Participants must be attending meetings and making progress toward their weight loss goal before the plan is billed.	Insurers work through Diabetes Prevention and Control Alliance (DCPA) to reimburse the YMCA using a performance-based fee schedule. Insurers receive performance monitoring reports through DCPA’s software, triggering claims and invoicing only when participants achieve specific milestones.
Data collection	UnitedHealthcare will have access to claims data for program participants. Additional reporting on participation and progress toward weight loss goals will be provided by the Real Appeal program. The program is fully HIPAA-compliant.	The DPCA administers the Y’s third-party payer system and online data collection tool. If offered as a network provider, United Healthcare would also have access to claims data for program participants. The program is fully HIPAA-compliant.

V. Real Appeal Cost-benefit Analysis

Evaluating the potential costs and benefits of a health intervention requires reliable information about certain factors, and best estimates about the rest. A certain degree of guesswork is inevitable when evaluating the impact of a non-event. In other words, how do you know the cost of an illness or complication that never occurs?

It's also important to remember that nothing happens in a vacuum. One high-risk person may lose significant amount of weight, yet still develop diabetes. Another high risk person may drop out of the program after two weeks and never get diabetes. Health care outcomes are influenced by many factors beyond the health plan's or even the individual's control, such as genetics, family dynamics, other illnesses, accidents or stressful life events.

What is the size of the targeted population?

ERS estimates that about 327,000 employees, retirees and spouses in HealthSelect are potentially eligible for Real Appeal. About 124,000 of eligible individuals (38%) could be prediabetic. This estimate is based on a national statistic; ERS cannot verify it with claims data as obesity and prediabetes are widely underreported in the claims files. UnitedHealthcare estimates that about 2,900 high-risk people among the study population could develop diabetes in 2016 with no intervention.

Each individual who enrolls in the Real Appeal program has an initial customization session to assess their risks, including BMI and cardiovascular and diabetes risk factors. Participants are then placed into risk categories, so that UnitedHealthcare can evaluate a Real Appeal participant's "migration of risk" along the diabetes spectrum.



Finding:

If one out of 16 participants avoids getting diabetes due to Real Appeal, the plan will breakeven on its investment.

How will participant behavior be measured?

Measures of participant behavior include:

- **Enrollment:** percent who enroll in the program in each of the identified risk categories
- **Attendance:** percent who attend 1+, 4+, 9+ sessions in the first 16 weeks,
- **Weight loss:** percent that lose no weight; percent that lose more than 3 percent of body weight; and percent that lower their starting BMI by at least 5 percent.

UnitedHealthcare and Real Appeal will provide updates to ERS on a quarterly basis. The importance of attendance and weight loss data cannot be overstated. The Real Appeal program is billed on a "pay for performance" basis. If an individual is not attending coaching sessions, the plan will not be billed. If a participant is attending sessions but has plateaued or gained weight, the plan will not be billed.

How much does Real Appeal cost?

If a participant completes the customization session (\$103) and 16 educational sessions (\$37 each), the maximum potential cost of the program is \$695. However, based on actual attendance and weight loss records, the average cost of Real Appeal participation is \$251 per enrollee. Participants can attend up to 52 weeks of online support sessions, but the plan is only billed for up to 16 weeks, and only as long as a participant continues to attend sessions and lose weight. These encounters are billed to the plan and paid like any other medical claim. There is no additional administrative fee.

What is the cost of not intervening?

HealthSelect paid \$281 million in medical and pharmacy claims for diabetes in FY15. Among the study population, ERS estimates that 124,000 could have prediabetes. UnitedHealthcare identified about 2,900 high-risk individuals who could develop diabetes in 2016 without any intervention, potentially costing the plan an additional \$12 million this year. If one out of 16 avoided getting diabetes as a result of Real Appeal, the state would breakeven on its investment. No savings are assigned to claimants who fall into low-risk categories.

What will success look like?

Five different populations are being tracked in the Real Appeal program, based on risk factors. Short-term, the goal is a clinically significant weight loss of 5-7 percent of body weight. Long-term goals include slowing the onset of diabetes or cardiovascular disease, and improving general health.

While ERS is not yet ready to draw any conclusions about the cost-effectiveness of Real Appeal at this time, program success will be measured by how many participants achieved evidence-based goals associated with the reduction of diabetic risks. ERS will continue to track the performance indicators provided by the TPA and revisit this analysis after one year of data is available.

Meanwhile, indirect benefits will begin to accrue to participants and employers. All Real Appeal participants have the potential to improve their health and reduce health care costs if they can stick with the program, lose weight, and make lasting changes for themselves and their families. State and higher education employers may also see reductions in absenteeism, presenteeism, and disability claims.

The primary reason for implementing a diabetes prevention program remains: it's the right thing to do. Diabetes is a significant cost driver for HealthSelect, and preventing the onset of diabetes in high-risk individuals is worth the investment.

Figure 18:

Real Appeal Early Results (July 2016)

Enrollment

18,247 registered

14,081 enrolled

Attendance (enrollees w/9-15 weeks)

89% attended 1+ sessions

57% attended 4+ sessions

22% attended 9+ sessions

who have lost weight: 6,694

of pounds lost: 49,655

Average weight lost: 2.9% of body weight

Average satisfaction: 4.85 out of 5

Figure 19:

Potential health improvements for Real Appeal participants

Population	Starting clinical markers	Targeted health improvements
Prediabetics	FBG: 100mg/dl to 125 mg/dl A1C: 5.7% to 6.4%	Prevent or slow the onset of diabetes
Diabetics	FBG: 126 mg/dl + A1C: 6.5% or higher	Reduce diabetic complications
Overweight or obese with cardiovascular risk factors	BMI 25+ with comorbidity of hypertension, hyperlipidemia or smoking	Prevent or slow the onset of cardiovascular disease
Obese	BMI ≥30	Prevent heart disease, stroke, type 2 diabetes and certain types of cancer
Weight loss	BMI ≥23	Improved general health

Figure 20:

Member Success Story: Virginia lost 30 pounds and lowered her A1C level!



Virginia Harwell

Virginia Harwell, Executive Assistant to the Medical Director at DSHS Rio Grande State Center in Harlingen, started Real Appeal in May, after three months of participation in another lifestyle intervention program through work.

Since February, Ms. Harwell has lost 30 pounds. She is extremely enthusiastic about Real Appeal being offered as a new benefit for state employees and is having great success.

“The main reason I decided to start Real Appeal was the need to lose weight and control my blood sugar,” says Harwell. “Back in February, my A1C was at 6.9—now it is at 5.8

“With Real Appeal, you get good, helpful information about eating, exercise and strengthening your muscles,” says Harwell. “I’ve learned a lot about checking food labels, the importance of getting enough sleep and finding out about healthier food choices.

“I really like my online counselor, Anita. We meet every Tuesday. She motivates and always encourages me. I get a lot of support, especially when I’m down or stressed out. My goal is to lose another 30 pounds!

Limitations of Real Appeal

Although Real Appeal is built upon the core principles of the CDC Diabetes Prevention Program, its initial application for CDC certification was not approved in the spring, in part because it was designed to appeal to a wider audience, not just prediabetics.

UnitedHealthcare is now redeveloping a program that more strictly follows CDC requirements – one-hour classes, a 16-week core curriculum that follows the

CDC syllabus, and mandatory blood testing for 50 percent of the participants. RealAppeal will resubmit its application to the CDC in September.

UnitedHealthcare’s intention is not to replace Real Appeal, but to offer the CDC-certified program to employer-based plans that require the CDC-certification. ERS will evaluate the enhanced program when it becomes available.

VI .Looking Ahead

Actionable Findings

In the course of its investigation, ERS not only learned a great deal about using intensive lifestyle interventions to reduce the risk of diabetes, it also identified a number of actionable findings that will be analyzed and implemented as resources allow.

1 . Ofer alternative diabetes prevention program settings.

Not everyone is motivated by an online program, so ERS is evaluating a brick-and-mortar alternative at the Y, for individuals who prefer face-to-face meetings. Community-based meetings at a location with gym facilities may be attractive to people who want to become more physically active.

ERS will also evaluate the enhanced version of the Real Appeal program when it is approved by the CDC.

2 . Encourage participants to stick wit the program.

“Stickiness” is a crucial part of an effective ILI program. In other words, the more sessions attended, the more weight lost. Researchers have found “a 1% greater weight loss for every four sessions attended.”²⁸ When comparing the effectiveness of ILI programs going forward, ERS must take stickiness into account. As participants attend more meetings, plan costs may go up, but better attendance means a better chance of lasting change.

3 . Focus resources on high-ris individuals.

Research shows that “structured lifestyle interventions are more cost effective when applied to high-risk adults than when applied to those of moderate or low risk. Overly inclusive screening criteria for diabetes prevention programs leads to the use of services on many people who would not go on to develop diabetes even in the absence of the intervention.”²⁹

The HealthSelect TPA identifies high-risk individuals through predictive modeling. For example, if the claims show that someone has metabolic syndrome, they will be contacted by a nurse. But if the goal is to direct diabetes interventions toward high-risk individuals only, more intensive screening with CDC risk assessments or biometric screenings will be required.

4 . Evaluate incentives for biometri screenings.

HealthSelect claims underreport obesity and prediabetes, because these conditions are often not coded by doctors. A biometric screening and a visit to the primary care doctor is the best way for individuals to learn their risk factors and what to do about them. The Legislature may want to consider providing stronger incentives for employees to get a biometric screening and follow up with their doctor. This can be done with a carrot or a stick: offer free worksite screenings; encourage annual physicals with a complete blood workup (currently covered at \$0 cost to the individual); or impose penalties (like a higher premium) for not getting screened.

²⁸Albright, Ann L, PhD, “Preventing Type 2 Diabetes in Communities across the U .S .The National Diabetes Prevention Program, Am J Prev Med . 2013April; 44(4 0 4): S351 . Doi:10 .1016/j .amepre .2012 .12

²⁹Ibid.

5 . Promote RealAppeal at high-risk agencies.

HealthSelect claims data shows that employees at the HHSC, DADS, TDCJ and DSHS have the highest incidence of diabetes. This information is helpful for ERS, UnitedHealthcare, and for employers, who can work together to encourage employees at those agencies to be screened and enroll in Real Appeal.

6 . Continue the “pay for performance strategy.

The CDC cites United Health Group (the parent company of UnitedHealthcare) and the Y as representing “a new model for sustainable delivery of the lifestyle change program.”³⁰ They were the first to offer a “pay-for-performance” model for the NDPP, in essence creating a built-in performance guarantee. These programs only bill the health plan if quantifiable results are being achieved. The Real Appeal program also has a “pay for performance” billing model, which should be continued in any programs added in the future.

7 . Explore complementary value-base plan design options.

While lifestyle changes are ideal, there are other supportive measures that can help people at risk of diabetes to get their weight and blood glucose under control. Researchers showed that metformin, a generic diabetes drug, can reduce the risk of developing diabetes by 31 percent in a high-risk individual over three years.³¹ The State of Kentucky recently made certain diabetic drugs available free of charge to high-risk individuals. Kentucky also offers a CDC-approved NDPP and Real Appeal. While paying for a generic medication requires an upfront investment, it is certainly less expensive in the long-run than full-blown diabetes.

Conclusion

Rider 14 required ERS to analyze the cost-effectiveness of providing a diabetes prevention program. Armed with the knowledge that 13 percent of HealthSelect participants are driving 30 percent of program costs as a result of diabetes, ERS went a step further and implemented the Real Appeal program effective April 1. This virtual ILI program provides immediate access to 281,000 eligible participants to a supportive online weight-loss program at no out-of-pocket cost.

ERS will continue to promote the availability of the Real Appeal program and evaluate its performance as data becomes available. This report also identified a number of actionable findings that will be analyzed and implemented as resources allow.

³⁰Ibid.

³¹Diabetes Prevention Program Research Group, “Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin,” *New England Journal of Medicine*, Vol . 346, No . 6, February 200

Appendix A:

Healthselect Programs For Diabetes

HealthSelect has a number of educational programs, tools and services to help members maintain or improve their well-being, some of which are specifically for diabetics.

HealthSelect disease management and wellness programs

These include disease management programs that offer personalized support in managing such chronic conditions as diabetes, asthma and heart failure. Members can enroll in a disease management program by calling HealthSelect's customer service center.

Those who enroll in the diabetes disease management program receive a range of benefits that focus on medication, diet and exercise tips to live a healthy life and get the best value from every dollar spent. The program is designed to help diabetics achieve a healthier future by offering:

- Coaching by nurses who are experienced in working with diabetics. They can answer health-related questions, suggest ways to reduce risk factors, and help participants save on out-of-pocket health care expenses; and
- Recommendations about quality doctors and hospitals.

During PY2015, 5,929 HealthSelect members qualified for the Diabetes High Risk Disease Management Program and 3,009 participants engaged with a nurse during PY 2015.

All HealthSelect members can access a number of health and wellness resources to manage their health care and make decisions about their well-being. On the HealthSelect website, members can find a doctor or medical facility, compare costs and manage their claims and health records.

A dedicated toll-free customer service number is available 24/7 to allow members to speak to a Registered Nurse. The nurse can help the member to determine treatment options (emergency room, doctor or self-care) for a current condition; answer questions about medication; help with chronic condition management; and find an in-network doctor or specialist.

Telephonic one-on-one health coaching is available for a variety of health and wellness topics including weight loss, stress management and smoking cessation.

Preventive care services

In addition to services mandated by the Affordable Care Act, UnitedHealthcare and HealthSelect apply preventive care benefits to certain services above and beyond the law's requirements, including diabetes screening.

Benefits Coordinator resources

The benefits coordinator section of HealthSelect website offers several resources to increase awareness about diabetes. Diabetes-related articles on the site include: "Diabetes Myths," "Could You Be at Risk for Diabetes?" and "Help Control Your Diabetes with Exercise."

A webinar about diabetes is accessible at the Health and Wellness Resources area of the UnitedHealthcare website.

Telcare

In July 2014, ERS and Austin Regional Clinic (which offer Patient Centered Medical Homes) piloted Telcare, a diabetes wellness program. This is a state-of-the-art interactive blood glucose device and coaching system designed to help diabetics manage the disease using mobile and computer-based technology. It is available to HealthSelect participants at no additional cost.

Telcare offers electronic log keeping and personalized feedback and tips received via instant messaging as well as a free smartphone app to view reading. Participants receive an electronic glucose monitor that electronically transmits readings to their doctor.

Of the 1,200 ARC patients with diabetes, 31.5 percent (378 patients) received the electronic meters and 29.8 percent (358 patients) activated the meters.

HEDIS reporting at Patient Centered Medical Homes

Each of our Patient Centered Medical Home groups has agreed to report upon HEDIS quality measures specific to diabetic patients. The measurement target varies by group.

These measurements are as follows:

- Diabetes HbA1C Testing
 - Definition: The percentage of diabetic Participating Plan Enrollees between 18-75 years who have had an HbA1c test performed in the measurement year.
- Diabetes LDL-C Screening
 - Definition: The percentage of diabetic Participating Plan Enrollees age 18-75 years who have had a LDLc test performed in the measurement year
- Diabetes Nephropathy Screening
 - Definition: The percentage of diabetic Participating Plan Enrollees between 18-75 years who have been screened for nephropathy or have evidence of nephropathy in the measurement year.
- Diabetes Control HbA1c poor control (> 9.0%)
 - Definition: The percentage of diabetic Participating Plan Enrollees between 18-75 years who have an HbA1c test result > 9.0%.
- Diabetes Control HbA1c good control (<8.0%)
 - Definition: The percentage of diabetic Participating Plan Enrollees between 18-75 years who have an HbA1c test result < 8.0%.
- Diabetes Blood Pressure Management
 - Definition: Adults aged 18-75 years with diabetes who had their blood pressure documented in the past year less than 140/90 mmHg

Appendix B: Self-Evaluation: Am I at Risk for Prediabetes?

<http://www.cdc.gov/diabetes/prevention/pdf/prediabetestest.pdf>

CDC Prediabetes Screening Test



COULD YOU HAVE PREDIABETES?

Prediabetes means your blood glucose (sugar) is higher than normal, but not yet diabetes. Diabetes is a serious disease that can cause heart attack, stroke, blindness, kidney failure, or loss of feet or legs. Type 2 diabetes can be delayed or prevented in people with prediabetes through effective lifestyle programs. Take the first step. Find out your risk for prediabetes.

TAKE THE TEST—KNOW YOUR SCORE!

Answer these seven simple questions. For each "Yes" answer, add the number of points listed. All "No" answers are 0 points.

Yes	No
1	0
1	0
1	0
5	0
5	0
5	0
9	0

Are you a woman who has had a baby weighing more than 9 pounds at birth?

Do you have a sister or brother with diabetes?

Do you have a parent with diabetes?

Find your height on the chart. Do you weigh as much as or more than the weight listed for your height?

Are you younger than 65 years of age and get little or no exercise in a typical day?

Are you between 45 and 64 years of age?

Are you 65 years of age or older?

Add your score and check the back of this page to see what it means.

AT-RISK WEIGHT CHART

Height	Weight <small>Pounds</small>	Height	Weight <small>Pounds</small>
4'10"	129	5'7"	172
4'11"	133	5'8"	177
5'0"	138	5'9"	182
5'1"	143	5'10"	188
5'2"	147	5'11"	193
5'3"	152	6'0"	199
5'4"	157	6'1"	204
5'5"	162	6'2"	210
5'6"	167	6'3"	216
		6'4"	221

National Center for Chronic Disease Prevention and Health Promotion
Division of Diabetes Translation



IF YOUR SCORE IS 3 TO 8 POINTS

This means your risk is probably low for having prediabetes now. Keep your risk low. If you're overweight, lose weight. Be active most days, and don't use tobacco. Eat low-fat meals with fruits, vegetables, and whole-grain foods. If you have high cholesterol or high blood pressure, talk to your health care provider about your risk for type 2 diabetes.

IF YOUR SCORE IS 9 OR MORE POINTS

This means your risk is high for having prediabetes now. Please make an appointment with your health care provider soon.

HOW CAN I GET TESTED FOR PREDIABETES?

Individual or group health insurance: See your health care provider. If you don't have a provider, ask your insurance company about providers who take your insurance. Deductibles and copays may apply.

Medicaid: See your health care provider. If you don't have a provider, contact a state Medicaid office or contact your local health department.

Medicare: See your health care provider. Medicare will pay the cost of testing if the provider has a reason for testing. If you don't have a provider, contact your local health department.

No insurance: Contact your local health department for more information about where you could be tested or call your local health clinic.



CS232302A

www.cdc.gov/diabetes

Contact information:

www.ers.state.tx.us

To call:

(877) 275-4377, toll-free

To visit:

200 E. 18th Street, Austin, Texas 78701

To write:

P.O. Box 13207, Austin, Texas 78711-3207

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