

# JOINT STATE GOVERNMENT COMMISSION

General Assembly of the Commonwealth of Pennsylvania

## DIABETES IN PENNSYLVANIA: PUBLIC HEALTH AND INSURANCE RESPONSES

STAFF STUDY

FEBRUARY 2016



*Serving the General Assembly of the  
Commonwealth of Pennsylvania Since 1937*

**REPORT**

Diabetes in Pennsylvania:  
Public Health and Insurance Responses

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## JOINT STATE GOVERNMENT COMMISSION

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The Joint State Government Commission was created in 1937 as the primary and central non-partisan, bicameral research and policy development agency for the General Assembly of Pennsylvania.<sup>1</sup>

A fourteen-member Executive Committee comprised of the leadership of both the House of Representatives and the Senate oversees the Commission. The seven Executive Committee members from the House of Representatives are the Speaker, the Majority and Minority Leaders, the Majority and Minority Whips, and the Majority and Minority Caucus Chairs. The seven Executive Committee members from the Senate are the President Pro Tempore, the Majority and Minority Leaders, the Majority and Minority Whips, and the Majority and Minority Caucus Chairs. By statute, the Executive Committee selects a chairman of the Commission from among the members of the General Assembly. Historically, the Executive Committee has also selected a Vice-Chair or Treasurer, or both, for the Commission.

The studies conducted by the Commission are authorized by statute or by a simple or joint resolution. In general, the Commission has the power to conduct investigations, study issues, and gather information as directed by the General Assembly. The Commission provides in-depth research on a variety of topics, crafts recommendations to improve public policy and statutory law, and works closely with legislators and their staff.

A Commission study may involve the appointment of a legislative task force, composed of a specified number of legislators from the House of Representatives or the Senate, or both, as set forth in the enabling statute or resolution. In addition to following the progress of a particular study, the principal role of a task force is to determine whether to authorize the publication of any report resulting from the study and the introduction of any proposed legislation contained in the report. However, task force authorization does not necessarily reflect endorsement of all the findings and recommendations contained in a report.

Some studies involve an appointed advisory committee of professionals or interested parties from across the Commonwealth with expertise in a particular topic; others are managed exclusively by Commission staff with the informal involvement of representatives of those entities that can provide insight and information regarding the particular topic. When a study involves an advisory committee, the Commission seeks consensus among the members.<sup>2</sup> Although an advisory committee member may represent a particular department, agency, association, or group, such representation does not

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<sup>1</sup> Act of July 1, 1937 (P.L.2460, No.459) (46 P.S. § 65), amended by the act of June 26, 1939 (P.L.1084, No.380); the act of March 8, 1943 (P.L.13, No.4); the act of May 15, 1956 (1955 P.L.1605, No.535); the act of December 8, 1959 (P.L.1740, No.646); and the act of November 20, 1969 (P.L.301, No.128).

<sup>2</sup> Consensus does not necessarily reflect unanimity among the advisory committee members on each individual policy or legislative recommendation. However, it does, at a minimum, reflect the views of a substantial majority of the advisory committee, gained after lengthy review and discussion.

necessarily reflect the endorsement of the department, agency, association, or group of all the findings and recommendations contained in a study report.

Over the years, nearly one thousand individuals from across the Commonwealth have served as members of the Commission's numerous advisory committees or have assisted the Commission with its studies. Members of advisory committees bring a wide range of knowledge and experience to deliberations involving a particular study. Individuals from countless backgrounds have contributed to the work of the Commission, such as attorneys, judges, professors and other educators, state and local officials, physicians and other health care professionals, business and community leaders, service providers, administrators and other professionals, law enforcement personnel, and concerned citizens. In addition, members of advisory committees donate their time to serve the public good; they are not compensated for their service as members. Consequently, the Commonwealth of Pennsylvania receives the financial benefit of such volunteerism, along with the expertise in developing statutory language and public policy recommendations to improve the law in Pennsylvania.

The Commission periodically reports its findings and recommendations, along with any proposed legislation, to the General Assembly. Certain studies have specific timelines for the publication of a report, as in the case of a discrete or timely topic; other studies, given their complex or considerable nature, are ongoing and involve the publication of periodic reports. Completion of a study, or a particular aspect of an ongoing study, generally results in the publication of a report setting forth background material, policy recommendations, and proposed legislation. However, the release of a report by the Commission does not necessarily reflect the endorsement by the members of the Executive Committee, or the Chair or Vice-Chair of the Commission, of all the findings, recommendations, or conclusions contained in the report. A report containing proposed legislation may also contain official comments, which may be used in determining the intent of the General Assembly.<sup>3</sup>

Since its inception, the Commission has published more than 350 reports on a sweeping range of topics, including administrative law and procedure; agriculture; athletics and sports; banks and banking; commerce and trade; the commercial code; crimes and offenses; decedents, estates, and fiduciaries; detectives and private police; domestic relations; education; elections; eminent domain; environmental resources; escheats; fish; forests, waters, and state parks; game; health and safety; historical sites and museums; insolvency and assignments; insurance; the judiciary and judicial procedure; labor; law and justice; the legislature; liquor; mechanics' liens; mental health; military affairs; mines and mining; municipalities; prisons and parole; procurement; state-licensed professions and occupations; public utilities; public welfare; real and personal property; state government; taxation and fiscal affairs; transportation; vehicles; and workers' compensation.

Following the completion of a report, subsequent action on the part of the Commission may be required, and, as necessary, the Commission will draft legislation and statutory amendments, update research, track legislation through the legislative process, attend hearings, and answer questions from legislators, legislative staff, interest groups, and constituents.

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<sup>3</sup> 1 Pa.C.S. § 1939 ("The comments or report of the commission . . . which drafted a statute may be consulted in the construction or application of the original provisions of the statute if such comments or report were published or otherwise generally available prior to the consideration of the statute by the General Assembly").



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To the Members of the General Assembly of Pennsylvania:

This is the second of a series of reports by the Joint State Government Commission in response to the mandate of 2014 House Resolution 936 (Pr.'s No. 4098), which provides for an ongoing study of the public health problem posed by diabetes in Pennsylvania. The Commission's task is to describe, evaluate, and make recommendations to improve the Commonwealth's response. This report focuses on describing the relevant programs of the Commonwealth agencies, chiefly the Department of Health, and the major insurers, particularly their coverage of Commonwealth insurers and retirees.

Public health initiatives can assist the Commonwealth's residents to reduce the incidence of diabetes and to minimize its deadly effects. Educating the public about diabetes is a vital part of the strategy; public health authorities must give the public opportunities to make themselves aware of the measures they can take to avoid the disease and to take effective measures if they do fall victim to it. Similarly, such officials must be aware of which measures are most effective so that resources can be directed to optimize their impact.

We hope these reports will assist the Commonwealth in mounting a vigorous and effective response to this serious and growing public health problem.

Respectfully submitted,

Glenn J. Pasewicz  
Executive Director



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## EXECUTIVE SUMMARY

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This is the second of a series of reports by the Joint State Government Commission (Commission) written in response to 2014 House Resolution 936. HR936 provides for an ongoing study of the public health problem posed by diabetes in Pennsylvania, and directs the Commission to describe, evaluate, and make recommendations for improving the Commonwealth's response. This report describes the relevant programs of the agencies charged with implementing public health policy and with assisting persons with diabetes. The broad purposes of public health programs directed against diabetes are "to reduce the incidence of diabetes, improve diabetes care, and control complications associated with diabetes."<sup>4</sup>

As the resolution directs, this report provides an assessment of the Commonwealth's response to diabetes by addressing financial impact, benefit assessment and funding, interagency coordination, plans and recommendations, and budgetary requirements. Because the response to diabetes in Pennsylvania is primarily the province of the Department of Health (PADOH), the report focuses on its programs. Chief among these is the Diabetes Prevention and Control Program (DPCP), which includes the Diabetes Prevention Program (DPP), Diabetes Self-Management Education (DSME), and the Juvenile Diabetes Cure Research Tax Check-Off Program.

Information is also provided on the diabetes related programs of other departments, including the OPTIONS and PACENET programs of the Department of Aging, the Statewide Recreation Plan of the Department of Conservation and Natural Resources, assistance with medical management and 504/IEPs for school children through the Department of Education, and Medical Assistance under the Department of Human Services.

The report also includes information regarding coverage and health management plans for diabetes for Commonwealth employees and other insureds of Crozer-Keystone Health System, Geisinger Health Plan, Highmark Health, Blue Cross of Northeastern Pennsylvania, and UnitedHealthcare of Pennsylvania.<sup>5</sup>

Public health initiatives can assist the Commonwealth's residents to reduce the incidence of diabetes and to minimize its deadly effects. Educating the public about diabetes is a vital part of the strategy, so that people can be aware of the measures they can take to avoid the disease and to respond effectively if they do fall victim to it.

The reports issued pursuant to HR 936 are intended to assist the Commonwealth in mounting a vigorous and effective response to a serious and growing public health problem, while respecting privacy and other rights of Pennsylvania residents. To that end, a menu of recommendations is provided at the conclusion of this report.

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<sup>4</sup> HR 936, page 2, lines 6-8.

<sup>5</sup> This information was also requested from Aetna, but it "decided not to participate." E-mail from Bravo Group to Commission staff, July 30, 2015.



## INTRODUCTION

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This report is presented in response to House Resolution No. 936 of 2014 (Pr's. No. 4098), which directed the Joint State Government Commission to perform a series of studies on diabetes, one of the most serious and fastest growing public health issues facing the Commonwealth. The report first presents a somewhat extensive description of diabetes, including the different types, symptoms and complications, risk factors, and a description of prediabetes, which is frequently a harbinger of full-blown diabetes. The report then describes measures to prevent prediabetes from progressing into diabetes or to halt or retard the progression of early stage diabetes, and proceeds to describe treatments.

The next chapter moves from individual cases to demographic and economic effects. Among other things, this chapter emphasizes the mortality and morbidity effects on the residents of Pennsylvania. Diabetes is not only the seventh leading cause of death, it also makes those who are afflicted with it more susceptible to other leading killers, especially heart disease, stroke, and kidney failure. Data from PHC4 are included to quantify the burden the disease places on patients and the Commonwealth's hospitals.

The third chapter lists the programs administered by Commonwealth departments and agencies that address diabetes. As the lead agency on public health issues, PADOH administers most of these programs within its Diabetes Prevention and Control Program (DPCP). Much of this program supports the Diabetes Prevention Program (DPP) and Diabetes Self-Management Education (DSME) initiatives. PADOH also administers the Juvenile Diabetes Cure Research Tax Check-Off Program that funds medical research on Type 1 diabetes. To maximize the impact of its programs, PADOH works through healthcare providers rather than with individual patients.

Several other departments and agencies assist in Pennsylvania's response to diabetes. The OPTIONS program in the Department of Aging offers home and community based services to eligible elderly Pennsylvanians to assist them to live independently, and its PACE programs help seniors afford prescription medications. The Department of Conservation and Natural Resources (DCNR) offers programs that promote health improvement through outdoor recreation. The Department of Education develops and carries out the IEPs and medical management plans for public school students with diabetes. The Department of Human Services, through the Office of Medical Assistance Programs (OMAP) administers the managed care program for the 600,000 Pennsylvanians who receive physical health services through Medical Assistance.

The fourth chapter deals with insurance coverage of diabetes for active and retired Commonwealth employees. This coverage is provided by private health insurers through contracts with the Pennsylvania Employee Benefits Trust Fund (PEBTF). The chapter first describes PEBTF, and the remainder of the chapter presents description of diabetes coverage under Crozer-Keystone Health System, Geisinger Health Plan, Highmark Health, Blue Cross of Northeastern Pennsylvania, and UnitedHealthcare of Pennsylvania.

The fifth and final chapter is a list of recommendations addressed to the General Assembly and the Commonwealth agencies, respectively. These include suggestions regarding mandatory coverage of prevention programs for persons with prediabetes, the establishment of an advisory committee for diabetes or for chronic conditions including diabetes, an emphasis on screening for prediabetes and undiagnosed diabetes, and interventions to encourage Pennsylvanians to adopt a healthier lifestyle.

The Commission wishes to acknowledge the assistance of Gregory Acquaviva, Tomas Aguilar, James Dougherty, Melissa Gizzi, Kathryn Farley, Marti Macchi, Arielle Philips, Diana Reed, Meaghan Sprout, Betsy Taylor, Janet Tomcavage, Flossie Wolf, and Susan Winkles in the drafting of this report.

## DIABETES

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Diabetes (scientifically known as diabetes mellitus) is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action or both.<sup>6</sup> Diabetes can lead to serious complications and premature death, but people with diabetes can take steps to control the disease and lower the risk of complications.

Healthline, a website published by Healthline Networks, Inc., describes the basic disease mechanism:

After you eat or drink, your body breaks down the sugars in your blood and turns it into glucose. The glucose travels through your bloodstream and provides your body with energy. To accomplish this, your pancreas needs to produce a hormone called insulin. In a person with diabetes (diabetes mellitus), the pancreas either produces too little insulin or none at all, or the insulin can't be used effectively. This allows blood glucose levels to rise while the rest of your cells are deprived of much needed energy. This can lead to a wide variety of problems affecting nearly every part of your body.<sup>7</sup>

Diabetes is an increasing peril for all segments of the population, particularly as diets high in sugar and carbohydrates are becoming more prevalent in Pennsylvania and elsewhere in the U.S. Approximately 1.4 million people in Pennsylvania suffer from diabetes, and health experts estimate that more than 325,000 of these, about one in four, are not aware of their condition.<sup>8</sup> Over one-third of Pennsylvania adults, 3,505,000 people, have pre-diabetes, a condition that substantially increases their risk of developing type 2 diabetes within a decade.<sup>9</sup> Diabetes claimed 3,804 lives in Pennsylvania in 2013.<sup>10</sup> The incidence of diabetes will almost certainly increase in Pennsylvania and the U.S. due to rising average age.

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<sup>6</sup> This part is in large part adapted from PADOH, Bureau of Health Promotion and Risk Reduction, "Chronic Disease in Pennsylvania 2011," 65-80,

<http://www.health.state.pa.us/pdf/ChronicDiseaseBurdenReport.pdf>.

It also includes observations by Tomas J. Aguilar, Director of PADOH's Bureau of Health Promotion and Risk Reduction.

<sup>7</sup> Healthline, "The Effects of Diabetes on the Body," accessed September 3, 2015

<http://www.healthline.com/health/diabetes/effects-on-body>.

<sup>8</sup> American Diabetes Association, "The Burden of Diabetes in Pennsylvania,"

<http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/pennsylvania.pdf>, 2014.

<sup>9</sup> Ibid.

<sup>10</sup> CDC, "Table 19. Number of deaths, death rates, and age-adjusted death rates for major causes of death: United States, each state, Puerto Rico, Virgin Islands, Guam, American Samoa, and Northern Marianas, 2013," *Deaths: Final Data for 2013*, <http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm#>.

## Types of Diabetes

Type 1 diabetes (previously known as insulin-dependent diabetes mellitus or juvenile-onset diabetes) develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin, which regulates blood glucose. To survive, people with type 1 diabetes must have insulin delivered by an injection or a pump. This form of diabetes typically strikes children and young adults, although disease onset can occur at any age. In adults, type 1 diabetes accounts for 5-10 percent of all diagnosed cases of diabetes. Risk factors may be autoimmune, genetic, or environmental. There is no known way to prevent this condition, but several clinical trials of preventive therapies are currently in progress or are being planned.<sup>11</sup>

Type 2 diabetes (previously known as non-insulin-dependent diabetes mellitus or adult-onset diabetes) typically begins as insulin resistance, a disorder in which the body's cells do not use insulin properly. As insulin resistance worsens, the pancreas gradually loses its ability to produce it. In adults, type 2 diabetes accounts for about 90 to 95 percent of all diagnosed cases of diabetes.<sup>12</sup>

Gestational diabetes is a form of glucose intolerance diagnosed during pregnancy. Gestational diabetes occurs more frequently among African-Americans, Hispanic or Latino Americans, and American Indians. It is also more common among obese women and women with a family history of diabetes. During pregnancy, gestational diabetes requires treatment to normalize maternal blood glucose levels to avoid complications in the infant. Immediately after pregnancy, five to ten percent of women with gestational diabetes are found to have diabetes, usually type 2. Women who have had gestational diabetes have a 40 to 60 percent chance of developing diabetes in the next five to 10 years.<sup>13</sup>

Other types of diabetes result from specific genetic conditions (such as maturity-onset diabetes of youth), surgery, medications, infections, pancreatic disease, and other illnesses. Such types of diabetes account for one to five percent of all diagnosed cases.

### *Symptoms and Complications*

Common symptoms of diabetes include excessive thirst, frequent urination, extreme hunger, unexplained weight loss, fatigue, blurred vision, and slow healing of sores.<sup>14</sup> The disease leads to a wide variety of damaging effects on the body:

- Ketoacidosis—an often fatal complication arising from buildup of toxic chemicals
- Kidney disease, leading to kidney failure
- Increased risk of heart attack or stroke
- Severe dehydration that may lead to unconsciousness
- Atherosclerosis
- Poor circulation
- Neuropathy— pain or loss of sensation in the extremities

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<sup>11</sup> ADA, "Type 1 Diabetes" <http://www.diabetes.org/diabetes-basics/type-1/?loc=db-slabnav>, accessed January 6, 2016.

<sup>12</sup> ADA, "Facts about Type 2" <http://www.diabetes.org/diabetes-basics/type-2/facts-about-type-2.html>, accessed January 6, 2016.

<sup>13</sup> ADA, "Gestational Diabetes," <http://www.diabetes.org/diabetes-basics/gestational/>, accessed January 6, 2016.

<sup>14</sup> Mayo Clinic, "Diabetes Symptoms," <http://www.mayoclinic.org/diseases-conditions/diabetes/basics/symptoms/CON-20033091>, accessed January 6, 2016.

- Infections and ulcers of the foot
- Increased susceptibility to skin infections, including staph infections
- Eye problems such as retinopathy, cataracts, and glaucoma
- Gestational diabetes increases risk of vaginal and bladder infections<sup>15</sup>

Diabetes doubles the death rate of those who suffer from it. Diabetes appeared as the seventh leading cause of death in the U.S. in 2010, but it may rank even higher, as it is likely to be underreported as a cause of death.<sup>16</sup> It is often a contributing cause of deaths that are attributed primarily to complications, particularly heart disease, stroke, and kidney failure. Deaths due to ketoacidosis or diabetic coma are usually attributed to diabetes.

### **Risk Factors for Type 2 Diabetes**

There are several risk factors that predispose one to developing type 2 diabetes over the course of their lifetime. These risk factors include:

- overweight
- parent or sibling with diabetes
- family background that is African-American, Hispanic/Latino, American Indian, Asian American, or Pacific Islander
- history of gestational diabetes
- hypertension
- sedentary lifestyle<sup>17</sup>

Some risk factors are beyond an individual's control, such as genetic vulnerability and age. The incidence of diabetes increases with advancing age, and because the average age of Pennsylvania's residents is increasing, it is almost certain that, absent a strong response from the State's public health sector, the incidence of diabetes will increase for the foreseeable future.

Other risk factors are controllable. While there is currently no cure, proper disease management can slow the progression of diabetes and enable many of its victims to lead long and healthier lives. Diabetes is strongly associated with unhealthy diets, obesity, and lack of exercise. Improvement in these areas may not only prevent but can often reverse the damage caused by the disease. Other beneficial actions include insulin injection, drug therapy, careful monitoring of blood sugar levels, and prompt medical intervention in response to complications, such as blurred vision and sores on the feet.

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<sup>15</sup> Healthline, "Effects of Diabetes on the Body."

<sup>16</sup> Centers for Disease Control (CDC), Division of Diabetes Translation, "National Diabetes Statistics Report, 2014," Division of Diabetes Translation, National Center for Chronic Disease Prevention and Health Promotion, 2014, <http://www.cdc.gov/diabetes/data/statistics/2014statisticsreport.html>.

<sup>17</sup> Ann L. Albright, PhD, RD, Edward W. Gregg, PhD, "Preventing Type 2 Diabetes in Communities Across the U.S., The National Diabetes Prevention Program," *American Journal of Preventive Medicine*, 2013, 44(4S4):S346 –S351; ADA, "Facts about Type 2."

Type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently among American Indians, African-Americans, Hispanic or Latino Americans, Asians, and Pacific Islanders.<sup>18</sup>

## Prediabetes

Prediabetes refers to the medical stage in which a person's blood sugar is higher than the normal range but below the range of type 2 diabetes. A diagnosis of prediabetes is a warning that the patient is at elevated risk of developing type 2 diabetes. One study found that, "[t]he yearly incidence of type 2 diabetes is 5%–10% in people with prediabetes, compared to about 1% per year in the general adult population."<sup>19</sup> Further, the risk of developing type 2 within five years of a diagnosis of prediabetes is between 23-30 percent.<sup>20</sup> Up to 70 percent of individuals with prediabetes will eventually develop type 2 diabetes.<sup>21</sup>

The risk of developing type 2 diabetes among those with prediabetes is generally proportional to the same indicators that are used to diagnose diabetes, especially A1C and Fasting Plasma Glucose (FPG) levels.<sup>22</sup> Approximately 10 percent of those diagnosed with prediabetes are considered at *very high* risk and have a greater than 30 percent probability of developing type 2 diabetes within 6-10 years. Approximately 25 percent of people with prediabetes are at *high* risk, with a probability of greater than 20 percent of developing type 2 diabetes within 6-10 years. The remaining 65 percent of people diagnosed with prediabetes are at moderate risk and have a probability of greater than 10 percent of developing type 2 diabetes within 6-10 years. Persons who do not have prediabetes have a less than 10 percent probability of developing the disease of within 10 years.<sup>23</sup>

The criterion for prediabetes is a blood glucose level between 100 and 125 milligrams per deciliter of blood (mg/dl), usually determined by the FPG test. The Oral Glucose Tolerance Test is a two-hour test that checks a patient's blood glucose levels before and two hours after drinking a special sweet drink, and shows how the body processes glucose; results between 140 mg/dl and 199 mg/dl indicate prediabetes. The A1C test measures average blood glucose over two to three months; results between 5.7 percent and 6.5 percent indicate prediabetes. For all tests, results that are above the range for prediabetes indicate type 2 diabetes.<sup>24</sup> See Table 1.

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<sup>18</sup> ADA, "Facts about Type 2." See Table \_\_ (p. 44) for incidence of type 1 and type 2 diabetes in Pennsylvania school students.

<sup>19</sup> *Ibid.*

<sup>20</sup> Paul A. Rich, Charles F. Schaefer, and Christopher G. Parkin et al., "Using a Quantitative Measure of Diabetes Risk in Clinical Practice to Target and Maximize Diabetes Prevention Interventions," *Clinical Diabetes*, American Diabetes Association, April 2013, vol. 31, no. 2, 82-89 DOI: 10.2337, <http://clinical.diabetesjournals.org/content/31/2/82.full>; CDC, "Prediabetes: Am I at Risk?" National Diabetes Prevention Program, March 10, 2015, <http://www.cdc.gov/diabetes/prevention/prediabetes.htm>.

<sup>21</sup> Adam G. Tabak, Christian Herder, and Wolfgang Rathmann, et al., "Prediabetes: A High-Risk State for Developing Diabetes," *Lancet*, June 16, 2012, vol. 379, no. 833, 2279-2290. DOI: 10.1016/S0140-6736(12)60283-9, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3891203/>.

<sup>22</sup> Paul A. Rich, et al, "Using a Quantitative Measure.," CDC, "Prediabetes: Am I at Risk?"

<sup>23</sup> Marti Macchi, MEd, MPH, Director of Programs, Senior Consultant, "Risk Stratification Pyramid for Diabetes Prevention," National Association of Chronic Disease Directors, e-mail from Dr. Macchi to Commission staff, November 24, 2015.

<sup>24</sup> American Diabetes Association, "Diagnosing Diabetes and Learning about Prediabetes," June 9, 2015. <http://www.diabetes.org/diabetes-basics/diagnosis/>.



**Table 1**  
**Prediabetes Diagnosis**  
**Stratification of Diabetes Prevention**  
**by Risk Level**

<b>Risk Level</b>	<b>10 year diabetes risk</b>	<b>Risk Indicators</b>		<b>Intervention</b>
Very high	30-40%	A1C <sup>a</sup> $\geq$ 5.7% and $\leq$ 6.5%	FPG <sup>b</sup> >110 mg/dL	Structured lifestyle intervention in community setting
High	20-30%	---	$\geq$ 100 mg/dL and $\leq$ 126 mg/dL	---
Moderate	10-20%	2+ risk factors	---	Risk counseling
Low	<10%	0-1 risk factor	---	Whole-population strategies
<sup>a</sup> Hemoglobin A1C test as percent of glucose present in blood <sup>b</sup> Fasting plasma glucose test in milligrams per deciliter of blood				
Source: Albright, et al., "Preventing Type 2 Diabetes."				

## Management of Diabetes<sup>25</sup>

### *Type 1 Management*

Treatment for type 1 requires insulin, which is delivered either through injection or an insulin pump. The pump can be programmed to deliver a measured dose as needed. Severe cases require patients to check their blood sugar levels several times a day, which can be done using a glucometer.

### *Type 2 Prevention and Management*

As with most serious diseases, much of the response focuses on the goal of preventing the individual from contracting the disease in the first place. With diabetes, this means emphasizing healthful diets and moderate exercise.

<sup>25</sup> This section is based on WebMD, "Understanding Diabetes—Diagnosis and Treatment," <http://www.webmd.com/diabetes/understanding-diabetes-detection-treatment>, accessed September 10, 2015.

The diet recommended for preventing diabetes resembles that recommended for adults in general. Patients should stay below a daily calorie limit, on the theory that people gain weight due to excessive caloric intake. The National Institutes of Health (NIH) diet recommends nutrient rich foods such as the following:

- Fruits and vegetables
- Whole grains, like oatmeal, whole-wheat bread, and brown rice
- Seafood, lean meats, poultry, and eggs
- Fat-free or low-fat milk and cheese, or substitutes (like soy or rice milk) that are high in vitamin D and calcium
- Beans, nuts, and seeds<sup>26</sup>

The NIH diet further recommends limiting the following foods:

- Sugar-sweetened drinks and desserts
- Foods with butter, shortening, or other fats that are solid at room temperature
- White bread, rice, and pasta, when made from refined grains<sup>27</sup>

Mild cases of type 2 can be controlled with diet and exercise. More severe cases require treatment by medications, which attack the disease in a variety of ways:

- Increasing insulin production by the pancreas
- Decreasing sugar absorption by the intestines
- Improving the body's use of insulin
- Decreasing sugar production by the liver and decreasing insulin resistance (This is the mechanism used by metformin (Glucophage), perhaps the best known treatment.)
- Blocking reabsorption of glucose by the kidney
- Lowering blood sugar after meals

If these measures fail to control the disease, administration of insulin is usually necessary.

Management of both types requires the patient to pay careful attention to the timing as well as the content of meals. Typically, a pattern of three small meals and three or four snacks per day is recommended. Meals should include a healthy balance of carbohydrates, proteins, and fats. Regular exercise of at least 150 minutes a week is recommended, but exercise can dangerously lower blood sugar, so patients are advised to eat a carbohydrate snack 30 minutes before a session.

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<sup>26</sup> National Institute of Diabetes and Digestive and Kidney Diseases, "Better Health and You: Tips for Adults," (accessed September 9, 2015) <http://www.niddk.nih.gov/health-information/health-topics/weight-control/better-health/Pages/better-health-and-you-tips-for-adults.aspx>; U.S. Department of Health and Human Services and U.S. Department of Agriculture, "2015-2020 Dietary Guidelines for Americans" 8<sup>th</sup> ed. (December 2015), available at <http://health.gov/dietaryguidelines/2015/>.

<sup>27</sup> Ibid.

Five clinical trials in the U.S., China, Japan, India, and Finland showed that the incidence of diabetes can be reduced by 30 to 60 percent by reducing calorie and especially fat intake and increasing physical activity.<sup>28</sup> For the subjects of these studies, risk of diabetes decreased by 16 percent per year for those who lost 5 percent to 7 percent of their body weight and who engaged in moderate physical activity for at least 150 minutes per week. Of the lifestyle modifications achieved by the subjects, weight loss was the most important factor for reducing diabetes risk.<sup>29</sup> The study identified the efficacy of lifestyle modifications based on four tiers of risk.<sup>30</sup> “The strongest and clearest evidence for the prevention of type 2 diabetes is from [randomized controlled trials] in which people at high risk for type 2 diabetes are exposed to a structured lifestyle intervention that addresses nutrition, physical activity, and behavior change strategies that result in modest weight loss.”<sup>31</sup> Those identified as high and very high risk for developing type 2 diabetes over a five to ten year period can significantly reduce the risk when appropriate services are available. These resources include proper facilities and trained personnel, proven community-based lifestyle modifications focused on weight loss, healthful diet, and moderate physical activity, which should be maintained over time.

While higher risk individuals require more expensive interventions, those with moderate risk can effectively reduce their risk through less expensive methods such as brief education and counseling. The largest population, those at low risk, can best be helped with population-wide initiatives to improve the food environment and encourage healthful behaviors. As a preventive strategy, special attention should be directed at obesity, especially in children; Pennsylvania has a wide variety of public and private initiatives to combat childhood obesity.<sup>32</sup>

For persons with diabetes, self-management education or training is a key step in improving health outcomes and quality of life. Education focuses on self-care behaviors, such as healthy eating, physical activity, and monitoring blood sugar. It is a collaborative process in which diabetes educators help people with or at risk for diabetes gain the knowledge, problem-solving, and coping skills needed to successfully self-manage the disease and its related conditions.

## **Healthy People 2020**

The federal government’s “Healthy People 2020” plan, which targets national objectives for improving overall population health, set five objectives related to preventive care practices for diabetes.<sup>33</sup> The plan hopes to achieve the following percentages of participation in each objective on a national level by 2020:

- annual foot exams, 74.8 percent
- annual dilated eye exam, 58.7 percent
- at least twice yearly A1C check, 72.8 percent
- daily self-monitoring of blood glucose, 63.5 percent
- attendance at diabetes management class at least once, 62.5 percent

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<sup>28</sup> Ann L. Albright, PhD, RD, Edward W. Gregg, PhD, “Preventing Type 2 Diabetes.”

<sup>29</sup> Ibid.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> See Joint State Government Commission, “Childhood Obesity: Report of the Advisory Committee on Childhood Obesity” (June 2014), [http://jsg.legis.state.pa.us/publications.cfm?JSPU\\_PUBLN\\_ID=371](http://jsg.legis.state.pa.us/publications.cfm?JSPU_PUBLN_ID=371).

<sup>33</sup> CDC, Office of Disease Prevention and Health Promotion, “Diabetes 2014 Report Card,” <http://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2014.pdf>.

Pennsylvania ranked 13<sup>th</sup> among the states in terms of how many residents had met those goals that year.<sup>34</sup> Table 2 shows the states and the percent of population receiving each type of service.

<b>R A N K</b>	<b>State</b>	<b>Annual Foot Exam</b>	<b>Annual Dilated Eye Exam</b>	<b>A1C Checked ≥2 Times a Year</b>	<b>Daily Self- Monitoring of Blood Glucose</b>	<b>Ever Attended Diabetes Self- Management Class</b>
	<b>All States (Median)</b>	<b>71.2%</b>	<b>64.9%</b>	<b>72.8%</b>	<b>63.5%</b>	<b>57.6%</b>
	<b>Healthy People 2020 Target</b>	<b>74.8</b>	<b>58.7</b>	<b>71.1</b>	<b>70.4</b>	<b>62.5</b>
1	Minnesota	81.7	68.7	73.7	62.1	72.7
2	Iowa <sup>b</sup>	77.8	73.9	78.4	61.2	63.9
3	District of Columbia <sup>b</sup>	76.9	73	76.2	72.2	54.9
4	Alaska	74.9	64.9	73.4	65	73.4
5	North Dakota <sup>b</sup>	81.2	64.7	75.7	63.6	65.7
6	Massachusetts <sup>b</sup>	79.2	76.8	75.2	67.6	50.3
7	Michigan	76.4	60.3	74.9	71.5	62.6
8	New Hampshire <sup>b</sup>	82	71.9	75.7	58.3	57.7
9	Kansas	73.9	72.9	73.1	63.1	61.3
10	Wisconsin	74.7	62.2	76.4	63.5	66.9
11	Delaware	71	77.7	74.7	66.3	54
12	South Dakota	77.9	72.8	70.6	62.4	59.3
13	<b>Pennsylvania</b>	76.7	68.9	76.5	63.8	55.6
14	Georgia	73.9	69.1	71.6	68	58
15	Maine	81.7	65.3	74.9	56.3	61.9
16	Tennessee	76.3	69	76.1	66.7	51
17	North Carolina	75.1	66.6	73.7	65.8	57.6
18	Connecticut	76.3	70.9	75	63.9	52.6
19	Oregon	76.7	61.7	72.7	58.8	67.9
20	Vermont	77.9	67.9	75.5	61.2	53.7
21	Ohio	72.6	65.2	71.6	66	58.9
22	New Mexico	73.7	63	70.2	65.7	60.7
23	Virginia	75.8	66.5	71.5	59.8	59.4
24	Louisiana <sup>b</sup>	69.4	65.7	70.5	69.3	57.3
25	California <sup>b</sup>	66.3	66.5	78.2	56	60.3
26	Rhode Island <sup>b</sup>	76.9	67.5	70.8	64.6	45.8

<sup>34</sup> CDC, Office of Disease Prevention and Health Promotion, “Diabetes 2014 Report Card,” <http://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2014.pdf>.

Table 2 continued.

<b>Table 2</b> Healthy People 2020 People Receiving Diabetes Services by State, 2014						
R A N K	State	Annual Foot Exam	Annual Dilated Eye Exam	A1C Checked ≥2 Times a Year	Daily Self- Monitoring of Blood Glucose	Ever Attended Diabetes Self- Management Class
	All States (Median)	71.2%	64.9%	72.8%	63.5%	57.6%
	Healthy People 2020 Target	74.8	58.7	71.1	70.4	62.5
27	Hawaii	69.8	70.4	80.9	56.6	47.7
28	Nebraska	71.2	60.7	70.3	59	63.7
29	Missouri <sup>b</sup>	69.1	65.6	70.8	62.1	56.7
30	Oklahoma	67	56.6	76.2	66.6	57.8
31	Montana <sup>b</sup>	76.8	62.9	68	56.7	59.7
32	Alabama	67.8	59.3	73.3	66.6	55.7
33	Arizona <sup>b</sup>	72.5	63.8	67.3	65.2	53.2
34	Texas	70.3	67.1	69.5	61.5	52.3
35	South Carolina	71.1	58.9	73.7	64.6	51.7
36	Indianab	67.5	62.7	65.9	63	59.5
37	West Virginia	64.5	65.4	72.8	64	50.5
38	New Jersey	65.8	72.3	68.4	59.1	51.2
39	Mississippi	66.8	58.2	71.1	71.4	48.6
40	Kentucky	67.6	58.7	73.4	64.1	50.8
41	Florida <sup>b</sup>	65.1	62.2	68.3	64.6	51.2
42	Utah	70.2	52.8	63.2	62.4	59
43	Wyoming	68.1	59.4	64	54	61.4
44	Idaho	68.8	53.4	57.3	56.8	62.9
45	Arkansas	61.7	50.2	66	67.7	52.3
46	Nevada	57	53.5	68.1	56.1	53.8
47	Colorado	NA <sup>c</sup>	NA	NA	NA	NA
48	Illinois	NA	NA	NA	NA	NA
49	Maryland	NA	NA	NA	NA	NA
50	New York	NA	NA	NA	NA	NA
51	Washington	NA	NA	NA	NA	NA

<sup>a</sup> Percentages are age-adjusted to the 2000 US standard population.  
<sup>b</sup> Data are from 2011 because 2012 data are not available.  
<sup>c</sup> NA = Data not available for 2011 or 2012.

Source: CDC, Office of Disease Prevention and Health Promotion, "Diabetes 2014 Report Card," <http://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2014.pdf>.



## HEALTH AND ECONOMIC EFFECTS

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### Diabetes Health Risks

Diabetes appeared as the seventh leading cause of death in the U.S. in 2010, but it may rank even higher, as it is likely to be underreported as a cause of death.<sup>35</sup> The risk of death among people with diabetes is about twice that of people without diabetes of a similar age.

Over the past 32 years, from 1980 through 2012, the number of adults with diagnosed diabetes in the United States nearly quadrupled, from 5.5 million to 21.3 million . . . Among adults, about 1.7 million new cases of diabetes are diagnosed each year. If this trend continues, as many as 1 out of every 3 adults in the United States could have diabetes by 2050.<sup>36</sup>

There were an estimated 29.1 million children and adults in the United States—9.3 percent of the population—with diabetes in 2012. Of those, 21 million were diagnosed and 8.1 million were undiagnosed. The prevalence of diabetes in people age 20 and older is higher in men than in women (15.5 million or 13.6 percent for men vs. 13.4 million or 11.2 percent for women).<sup>37</sup>

The national age-adjusted diabetes mortality rate decreased from 27.5 per 100,000 population in 2000 to 21.3 per 100,000 population in 2008. Female diabetes mortality rates consistently decreased every year between 2000 and 2008. The male diabetes mortality rate decreased as well, but with slight fluctuations. The mortality rate differences between males and females increased between 2000 and 2007, with a difference of 18.5 percent in 2000 to 55.5 percent in 2007. The difference between males and females narrowed in 2008 when compared to 2007.<sup>38</sup>

National survey data indicate 7.6 percent of non-Hispanic whites, 9.0 percent of Asian Americans, 13.2 percent of non-Hispanic blacks and 12.8 percent of Hispanics age 20 or older had been diagnosed with diabetes between 2004 and 2006 after adjusting for population age differences.<sup>39</sup>

### Consequences

Diabetes affects the cardiovascular system in particularly harmful ways. Adults with diabetes are about 1.7 times more likely to have heart disease, about 1.8 times more likely to be hospitalized for heart attack, and 1.5 times more likely to be hospitalized for stroke than are other adults. Among people diagnosed with diabetes, 71 percent had high blood pressure and 65 percent had high

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<sup>35</sup> CDC, “2014 National Diabetes Statistics Report”  
<http://www.cdc.gov/diabetes/data/statistics/2014statisticsreport.html>.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Ibid.

cholesterol. Diabetes is also the leading cause of new cases of blindness among adults 20 to 74 years of age. Among adults 40 years and older who have diabetes, 28.5 percent had diabetic retinopathy, which is damage to the small blood vessels in the retina which could result in vision loss. Those with advanced diabetic retinopathy, which could lead to blindness, accounted for 4.4 percent of adults with diabetes. Diabetes is the primary cause of kidney failure, accounting for 44 percent of all new cases in 2011. Further, approximately 60 percent of non-traumatic lower limb amputations occur in people with diabetes; in 2010, about 73,000 lower extremity amputations were performed.<sup>40</sup>

Some research shows that the rates of complications have declined substantially since 1990. Between 1990 and 2010, the rate of heart attacks dropped from 141.1 to 45.4 per 10,000 people, which is a decrease of 67.8 percent. Likewise, the rates for strokes dropped by almost 52.7 percent, for amputations by over 51.4 percent, for end-stage renal disease by 28.3 percent, and death from hyperglycemic crisis by over 64.4 percent.<sup>41</sup>

### **Economic Cost**

The CDC estimated that the total direct and indirect costs of diabetes in the U.S. were \$245 billion in 2012. Average medical expenditures for people with diabetes are about 2.3 times higher than those without, and direct medical costs totaled \$176 billion. Indirect costs, which include disability, work loss, and premature death, were estimated at \$69 billion in 2012.<sup>42</sup>

In Pennsylvania, the direct medical expenses were estimated to be \$10.2 billion in 2012. Lost productivity was valued at \$3.2 billion, for a total of \$13.4 billion.<sup>43</sup>

### **Effects in Pennsylvania**

While much of the diabetes burden resists quantification, some key measurements describe the scope of the problem.

- In 2014, there were 1.4 million people in Pennsylvania living with diabetes, and about 3.5 million Pennsylvanians (35.8 percent) had prediabetes or were at a high risk of developing diabetes.<sup>44</sup>
- Nearly 1,000 Pennsylvania residents were hospitalized in Pennsylvania wherein diabetes was either the primary or a secondary diagnosis. Almost 8 percent of these underwent

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<sup>40</sup> CDC, "2014 National Diabetes Statistics Report."

<http://www.cdc.gov/diabetes/data/statistics/2014statisticsreport.html>.

<sup>41</sup> Edward W. Gregg, Ph.D., et al, "Changes in Diabetes-Related Complications in the United States, 1990-2010," *The New England Journal of Medicine*, 370, pp. 1514-23, <http://www.nejm.org/doi/full/10.1056/NEJMoa1310799>, DOI: 10.1056/NEJM0a1310799. 1517.

<sup>42</sup> CDC, "2014 National Diabetes Statistics Report"

<http://www.cdc.gov/diabetes/data/statistics/2014statisticsreport.html>.

<sup>43</sup> ADA, "The Burden of Diabetes in Pennsylvania," 2014,

<http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/pennsylvania.pdf>.

<sup>44</sup> ADA, "The Burden of Diabetes in Pennsylvania," 2014,

<http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/pennsylvania.pdf>.



two or more hospitalizations within a single calendar year, and 2.1 percent endured four or more hospitalizations in one year.<sup>45</sup>

- A total of 3,084 Pennsylvanians—more than eight per day—died from diabetes in 2013.<sup>46</sup>
- The hospitalization rate for end stage renal disease, a common complication of diabetes, is nearly five times as high for African-Americans patients as for non-Hispanic whites, and African-Americans' rate for lower extremity amputations was twice as high.<sup>47</sup>

According to 2014 data provided by Pennsylvania Health Care Cost Containment Council (PHC4), there were 24,826 hospital admissions for diabetes as the principal reason.<sup>48</sup> (Approximately 96 percent of these hospitalizations were for Pennsylvania residents.) There were 340,356 hospital admissions where diabetes was a secondary diagnosis. (Approximately 95 percent of these hospitalizations were for Pennsylvania residents.<sup>49</sup>) Over 365,000 Pennsylvania residents were hospitalized in Pennsylvania where diabetes was either the primary or a secondary diagnosis.

Eleven percent of Pennsylvanians over age 18 are estimated to have been diagnosed with diabetes. Pennsylvania's crude rate (not age adjusted) of diagnosed adults has almost doubled in less than 20 years: from 5.0 per 100 in 1994 to 8.7 per 100 in 2013.<sup>50</sup> The number of hospital admissions for which diabetes was the principle diagnosis rose by 13.6 percent, from 21,842 in 2000 to 24,826 in 2014.<sup>51</sup> The number of hospital admissions for diabetes for children ages 1-17 was 1,305 in 2009.

The prevalence of diabetes rises markedly with increasing age. The proportion of Pennsylvania's population 65 and older is projected to grow rapidly—from 15.4 per cent in 2010 to 22.6 per cent in 2030.<sup>52</sup> As the proportion of older Pennsylvanians rises, it can be expected that the burden of diabetes will increase as well.

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<sup>45</sup> PHC4, "Diabetes Hospitalization Report (2009 Data)," (November 2011), unnumbered paged immediately before page 1.

<sup>46</sup> CDC, "Table 19. Number of deaths, death rates, and age-adjusted death rates for major causes of death: United States, each state, Puerto Rico, Virgin Islands, Guam, American Samoa, and Northern Marianas, 2013," Deaths: Final Data for 2013, <http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm#>.

<sup>47</sup> PHC4, "Diabetes Hospitalization Report (2009 Data)," (November 2011), unnumbered paged immediately before page 1.

<sup>48</sup> Additional data from PHC4 was included in the first report the Commission presented under HR 936. See Joint State Government Commission, "Diabetes Programs in Pennsylvania (March 2015), 7-12, <http://jsg.legis.state.pa.us/resources/documents/ftp/publications/2015-409-Diabetes%20Programs%20in%20PA%20March%2016%202015.pdf>

<sup>49</sup> E-mail from Flossie Wolf, Pennsylvania Health Care Cost Containment Council (PHC4) to Commission staff, February 5, 2015.

<sup>50</sup> CDC, "National Diabetes Surveillance System—All States," <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>, visited January 8, 2016.

<sup>51</sup> PHC4, "Diabetes Hospitalization Report (2009 Data)," (November 2011), unnumbered paged immediately before page 1; e-mail, note 68.

<sup>52</sup> U.S. Census Bureau, "The Older Population—2010," 9 <http://www.census.gov/prod/cen2010/briefs/c2010br-09.pdf>; Pennsylvania State Data Center, "State and County Population Projections 2010 to 2040," (March 27, 2014), [https://pasdc.hbg.psu.edu/sdc/pasdc\\_files/researchbriefs/Projections\\_RB.pdf](https://pasdc.hbg.psu.edu/sdc/pasdc_files/researchbriefs/Projections_RB.pdf).

Hospitalizations arising from four conditions related to diabetes are considered potentially preventable: uncontrolled diabetes, diabetes short-term complications, diabetes long-term complications, and lower extremity amputations among patients with diabetes. Six other conditions reported as potentially preventable hospitalizations by PHC4, but not related to diabetes are listed in Table 2. Data about these conditions are summarized in Tables 3-7.

<b>Table 3</b>				
Number of Potentially Preventable Hospitalizations and Length of Stay, 2010				
Diabetes Related Conditions	Hospitalizations		Average Length of Stay (in days)	Total Days
	Number	Percent		
Diabetes Long-Term Complications	12,866	55.7%	5.7	73,775
Diabetes Short-Term Complications	6,379	27.6	3.9	24,615
Uncontrolled Diabetes	2,016	8.7	3.2	6,484
Lower-Extremity Amputation Among Patients with Diabetes	1,838	8.0	11.5	21,072
Total	23,099	--	5.4	125,946

Source: PHC4, "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012), 5.

<b>Table 4</b>	
Rate of Potentially Preventable Hospitalizations, 2010 per 10,000 PA Residents	
Angina without Procedure	1.7
Lower-Extremity Amputation Among Patients with Diabetes	1.9
Uncontrolled Diabetes	2.0
Hypertension	6.0
Diabetes Short-Term Complications	6.4
Asthma in Younger Adults	7.5
Diabetes Long-Term Complications	13.0
Dehydration	14.1
Urinary Tract Infection	21.8
Bacterial Pneumonia	32.5
Heart Failure	46.3
COPD or Asthma in Older Adults	61.2

Source: PHC4, "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012), 6.

**Table 5**  
Potentially Preventable Hospitalizations, 2010  
Medicare Fee-for-Service and Medicaid Fee-for-Service Payment

Diabetes Related Conditions	Number of Potentially Preventable Hospitalizations	Paid for by Medicare Fee-for-Service				Paid for by Medicaid Fee-for-Service			
		Number	Percent	Average Payment	Total Payment	Number	Percent	Average Payment	Total Payment
Diabetes Long-Term Complications	12,866	4,778	37.1%	\$9,003	\$43,016,772	543	4.2%	\$10,150	\$5,511,617
Diabetes Short-Term Complications	6,379	1,058	16.6	6,719	7,108,437	751	11.8	5,285	3,968,758
Uncontrolled Diabetes	2,016	552	27.4	4,943	\$2,728,455	132	6.5	4,292	566,532
Lower-Extremity Amputation Among Patients with Diabetes	1,838	768	41.8	20,392	15,661,307	109	5.9	22,002	2,398,269
Total	23,099	7,156	--	9,574	68,514,961	1535	--	8,107	12,445,176

Source: PHC4, "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012), 7.

**Table 6**  
PA and US Potentially Preventable Hospitalization Rates, 2008  
per 10,000 Residents

Diabetes Related Conditions	PA <sup>1</sup>	US
Diabetes Long-Term Complications	13.5	12.9
Diabetes Short-Term Complications	6.1	6.2
Uncontrolled Diabetes	2.1	2.3
Lower-Extremity Amputation Among Patients with Diabetes	1.8	1.8

<sup>1</sup> PA rates were adjusted to account for age and sex differences between PA and US populations.

Source: PHC4, "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012), 9.

<b>Table 7</b> Potentially Preventable Hospitalization Rates, 2001 and 2010 per 10,000 PA Residents by Condition		
<b>Diabetes Related Conditions</b>	<b>2001</b>	<b>2010</b>
Diabetes Long-Term Complications	13.2	13.0
Diabetes Short-Term Complications	5.2	6.4
Uncontrolled Diabetes	2.5	2.0
Lower-Extremity Amputation Among Patients with Diabetes	2.7	1.9
Note: All changes in rates between 2001 and 2010 were statistically significant, except Diabetes Long-Term Complications.		
Source: PHC4, "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012), 10.		

## Hospital Readmissions

The data presented in this section, unless otherwise specified, relates to discharges occurring from January 1, 2013 to August 31, 2014, and include adults 18 and older. All Pennsylvania general acute care and several specialty general acute care hospitals are included. Hospitals that closed or merged with other facilities during that time period are not reported, nor are hospitals that recently opened since their data available would not represent the full time period of the report.)<sup>53</sup> The charts from 2011-2012 are from the same report but were obtained by the Pennsylvania Department of Human Services where data was only available during this time period.

Of the four conditions PHC4 studied in its statewide 30-day readmissions report, diabetes patients were identified as the most likely to be readmitted for the same condition as their initial hospitalization (8.4 percent). Patients initially hospitalized for diabetes had an 18.7 percent readmission rate for any reason.

Patients initially hospitalized for diabetes-medical management accounted for a total of 25,257 initial hospital stays. Though the majority of these stays were not followed by a readmission within 30 days, there were 4,730 30-day readmission hospital stays; 2,133 of which were readmissions for the same condition. Overall, 30-day readmissions for diabetes medical management accounted for 7,854 additional days spent in the hospital.

<sup>53</sup> PA Health Care Cost Containment Council, "Readmissions for the Same Condition" (June 2015), <http://www.phc4.org/reports/readmissions/samecondition/14/docs/full-report.pdf>

Data analyzed over a one year period (2012), uncovered that 19.8 percent of diabetes medical management patients were readmitted one or more times. Of those readmitted, 3.9 percent were readmitted twice and 4.4 percent were readmitted three or more times.

Statewide, the Average Hospital Charge for Readmissions for the same condition was \$28,072. However, the average charge varied widely between hospitals, from \$7,222 at Latrobe Area Hospital to \$72,002 at Taylor Hospital. Some hospitals did not report this data element.

According to the PHC4's Statewide Data from 2011-2012, total payments for readmissions for the same condition (diabetes-medical management) cost Medicare and Medicaid over \$12 million over this two year period. However, this does not include payments for readmissions covered under other insurance types or for uninsured patients. Estimated additional payments for readmissions of the same condition of diabetes-medical management for other insurance types is \$11 million. The figures below do not include the cost of the initial stays. See Tables 8 and 9. From 2008 through 2012, the rate of 30-day readmissions nearly doubled in the central and northeastern regions, going from 5.5 percent to 10.5 percent. Other regions showed no notable differences.

<b>Table 8</b> Average Payment for Readmissions for the Same Condition, by MS-DRG Description for Diabetes-Medical Management 2011-2012 Statewide Data						
<b>Condition</b>	<b>Medicare Fee-for-Service</b>		<b>Medicaid Fee-for-Service</b>		<b>Medicaid Managed Care</b>	
	Number of Readmissions	Average Payment	Number of Readmissions	Average Payment	Number of Readmissions	Average Payment
Cranial and Peripheral Nerve Disorders w/ MCC	67	\$8,140	5	NR	22	\$6,384
Cranial and Peripheral Nerve Disorders w/o MCC	155	5,705	44	\$7,844	176	6,277
Peripheral Vascular Disorders w/ MCC	5	NR	0	NR	1	NR
Peripheral Vascular Disorders w/ CC	11	5,390	1	NR	0	NR
Peripheral Vascular Disorders w/o CC/MCC	0	NR	0	NR	0	NR
Diabetes w/ MCC	120	8,734	28	11,962	73	5,852
Diabetes w/ CC	245	5,343	100	6,044	421	5,437

Table 8 continued.

<p align="center"><b>Table 8</b>                      Average Payment for Readmissions                      for the Same Condition, by MS-DRG Description                      for Diabetes-Medical Management                      2011-2012 Statewide Data</p>						
Condition	Medicare Fee-for-Service		Medicaid Fee-for-Service		Medicaid Managed Care	
	Number of Readmissions	Average Payment	Number of Readmissions	Average Payment	Number of Readmissions	Average Payment
Diabetes w/o CC/MCC	114	\$3,513	65	\$4,199	274	\$4,835
Other Kidney and Urinary Tract Diagnoses w/ MCC	1	NR	0	NR	1	NR
Other Kidney and Urinary Tract Diagnoses w/ CC	13	6,713	1	NR	6	NR
Other Kidney and Urinary Tract Diagnoses w/o CC/MCC	1	NR	1	NR	4	NR
Total/Average	732	6,001	245	6,594	978	5,467
NR = Not Reported (10 or fewer cases) CC = Complication or Comorbidity MCC = Major Complication or Comorbidity						
Source: PHC4 “Readmissions for the Same Condition: January 2013—August 2014 Data,” 39-40,						

<p align="center"><b>Table 9</b>                      Total Payments for Readmissions                      for the Same Condition of Diabetes – Medical Management                      2011-2012 Statewide Data</p>	
Medicare: Fee-for-Service	\$4,728,456
Medicaid: Fee-for-Service	1,849,005
Medicaid: Managed Care	5,771,983
Total	12,379,444
Source: “Readmissions for the Same Condition: January 2013—August 2014 Data,” 9.	

From January 2013 through August 2014, the highest rates of readmission for the same condition were attributed to patients on Medicaid. The Medicaid population often faces additional social and economic challenges compared to other populations, which may be causing their readmission rates to be higher. For example, Medicaid patients often experience barriers that affect their ability to navigate the health care system, including discontinuities in coverage, low literacy, language barriers, lack of transportation, unstable housing, and unstable employment. With the expansion of Medicaid under the Affordable Care Act, readmission rates may remain high because newly covered adults might be inexperienced at navigating the health care system.





## PROGRAM ASSESSMENT

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Diabetes in Pennsylvania is being addressed from a number of different angles. Federal funding is available for Commonwealth public health programs that attempt to aid Pennsylvanians through prevention and management and for medical research at universities and medical centers. In 2014, for example, the National Institute of Diabetes and Digestive and Kidney Diseases provided almost \$36.5 million for research projects in Pennsylvania. Further, the CDC's Division of Diabetes Translation provided \$766,657 to research and education programs in Pennsylvania.<sup>54</sup> PADOH distributes federal grants according to CDC guidelines to state programs, regional health networks, and other organizations.

The American Diabetes Association supports a number of approaches to solving the problems brought on by diabetes through the funding of research, professional education, and scholarships in the amount of \$27.7 million.<sup>55</sup>

### **Department of Health (PADOH)<sup>56</sup>**

PADOH, through its mandate to “protect the health of the people of the Commonwealth, and to determine and employ the most efficient and practical means for the prevention and suppression of disease” is the Commonwealth’s lead agency for policies and programs that relate to chronic diseases, including diabetes.<sup>57</sup> Most of the Commonwealth’s diabetes programs are centralized within PADOH to ensure that statewide efforts are coordinated. PADOH’s long-term strategy is to work through Pennsylvania’s healthcare system rather than with individual patients, which allows it to more effectively and efficiently reach the broad spectrum of residents suffering from diabetes. PADOH coordinates with the Office of Administration to ensure that the Pennsylvania Employees Benefit Trust Fund (PEBTF) provides insurance coverage for diabetes prevention and management programs to beneficiaries. PADOH also coordinates with the Department of Human Services Office of Medical Assistance Programs (OMAP) and Medicaid Managed Care Organizations to share data, to collaborate on DSME initiatives, and to encourage coverage for Medicaid beneficiaries. In efforts to help Pennsylvania’s children with diabetes, PADOH works in cooperation with the Department of Education’s School Nurses Program.

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<sup>54</sup> ADA, “The Burden of Diabetes in Pennsylvania.”

<sup>55</sup> Ibid.

<sup>56</sup> The description of PADOH’s programs is based upon conversations with and materials provided to Commission staff by PADOH staff under the direction of Martin Raniowski, Deputy Secretary for Health Planning and Assessment, and Tomas J. Aguilar, Bureau Director, Health Promotion and Risk Reduction.

<sup>57</sup> The Administrative Code of 1929 (P.L. 177, No.175), § 2102(a); 1905 Act No. 218, P.L.312, § 8(a).

PADOH administers the Juvenile Diabetes Cure Research Tax Check-Off Program, established by Act 133 of 2004 (P.L.935). This Act provides a state income tax check-off option to enable individuals to contribute a portion of their state tax refund to support research for type 1 diabetes. PADOH is required to provide the General Assembly with annual reports on program activities and contributions, as well as guidelines for the distribution of funds.<sup>58</sup> PADOH Diabetes Prevention and Control Program (DPCP) planned to issue a request for application (RFA) in 2014 to provide grant funds for research that “focuses on [type 1] diabetes as it relates to restoring normal blood levels, preventing and reversing complications from the disease, and/or preventing juvenile diabetes. Research funds from the program are restricted to institutions of higher education and independent research institutes of the Commonwealth of Pennsylvania.”<sup>59</sup>

PADOH’s remaining programs primarily address Type 2 diabetes. The Diabetes Prevention and Control Program (DPCP) has been PADOH’s primary diabetes program. This program has received funds from the Commonwealth and the CDC’s Preventive Health and Health Services Block Grant.<sup>60</sup> The DPCP was last funded by the Commonwealth in the amount of \$100,000 for fiscal year 2013-14.<sup>61</sup> It was eliminated from the Governor’s budget proposal for fiscal year 2015-16.<sup>62</sup>

PADOH, along with many other public health entities, has long dealt with the prevention and management of diabetes and other chronic diseases by addressing them as individual illnesses. More recently, PADOH has followed the lead of the CDC by shifting its paradigm from treating individual diseases to a comprehensive framework that recognizes the common risk factors associated with chronic diseases. This strategy addresses diabetes, heart disease, stroke, chronic lung disease, among other chronic diseases, by focusing on the following four key domains:

- Epidemiology and surveillance: to monitor trends and track progress
- Environmental approaches: to promote health and support healthy behaviors
- Health care system interventions: to improve the effective delivery and use of clinical and other high-value preventive services
- Community programs linked to clinical services: to improve and sustain management of chronic conditions<sup>63</sup>

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<sup>58</sup> PADOH, “Juvenile Diabetes Cure Research Tax Check-Off Program Annual Report Jan. 1 – Dec. 31, 2013,” (2014), [http://www.portal.state.pa.us/portal/server.pt/document/1426417/2013\\_juvenile\\_diabetes\\_cure\\_research\\_tax\\_check-off\\_program\\_annual\\_report\\_pdf](http://www.portal.state.pa.us/portal/server.pt/document/1426417/2013_juvenile_diabetes_cure_research_tax_check-off_program_annual_report_pdf). This is the most recent report available.

<sup>59</sup> Ibid.

<sup>60</sup> PADOH, “The Burden of Diabetes in Pennsylvania 2010.”

<sup>61</sup> Act of July 10, 2014, P.L. 3052, No. 1A.

<sup>62</sup> Commonwealth of Pennsylvania, Office of the Budget, “2014-2015 Governor’s Executive Budget,” E24.10, [www.portal.state.pa.us/portal/.../2014-15\\_budget\\_document\\_web\\_pdf](http://www.portal.state.pa.us/portal/.../2014-15_budget_document_web_pdf).

<sup>63</sup> CDC, National Center for Chronic Disease Prevention and Health Promotion, “The Four Domains of Chronic Disease Prevention Working Toward Healthy People in Healthy Communities,” (June 2015), <http://www.cdc.gov/chronicdisease/pdf/four-domains-factsheet-2015.pdf>.

The fourth domain, and, to a lesser extent, the third domain, are those primarily addressing diabetes care and management. According to PADOH, its efforts toward prevention and management of diabetes are not hindered by the elimination of funding for the specific DPCP, but are instead maintained by complying with the CDC's new approach to the four domains of chronic disease prevention. The CDC reported that funding had been provided to Pennsylvania for the Commonwealth's efforts in those two domains.

Diabetes programs in Pennsylvania are working toward five broad objectives supported by the CDC.

- Increasing access, participation, and referrals for diabetes self-management education (DSME) programs, with an emphasis on programs accredited by the American Association of Diabetes Educators or recognized by the American Diabetes Association; working to promote Medicaid reimbursement for DSME.
- Scaling and sustaining the National Diabetes Prevention Program (National DPP) by increasing awareness of prediabetes among health care providers and people at risk, increasing referrals to existing CDC-recognized lifestyle change programs in the state, and working to promote the National DPP as a covered benefit for public employees and Medicaid beneficiaries for the prevention of type 2 diabetes.
- Increasing engagement of community pharmacists in providing medication therapy management and self-management for adults with high blood pressure and adults with diabetes.
- Promoting implementation of quality improvement processes in health systems, with an emphasis on increasing electronic health records (EHR) adoption, using health information technology (HIT) to improve performance, and increasing the institutionalization and monitoring of aggregated, standardized quality measures at the provider and systems level.
- Increasing use of team-based care in health care systems.<sup>64</sup>

Wide-ranging program activities have the potential to reach those who are at risk, have prediabetes, or are already afflicted by diabetes.

PADOH claims that the financial damage of diabetes and its complications is not linked to its own direct costs, and there is not an apparent method to compare the impacts with respect to other chronic diseases and conditions. Rather, the toll is represented by direct and indirect costs to individuals with the disease, their families, health care insurers, Medicaid, and employers.

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<sup>64</sup> E-mail from CDC Office of Financial Resources to Commission staff, October 15, 2015.

## Plans and Recommendations<sup>65</sup>

Many of PADOH's activities related to reducing the impact of diabetes, prediabetes, and related complications are focused on access to, referral to, utilization of and reimbursement for DSME and DPP programs. Related activities are included below. Note that this is not an exhaustive list of all DPCP activities and programs.

- Build a workforce that can implement DPP effectively. PADOH facilitates training for lifestyle coaches and master trainers.
- Provide training and technical assistance for DSME providers to increase the number of certified DSME sites throughout the state.
- Deliver DPP through organizations statewide and expand the DPP network through the creation of new sites. Provide support to organizations to obtain federal Centers for Disease Control (CDC) recognition for DPP. CDC's Diabetes Prevention Recognition Program (DPRP) assures that the program is delivered at sites around the country with high quality standards.
- Implement a social marketing campaign to increase awareness of prediabetes or those at high risk for developing type 2 diabetes. Incorporate the national campaign, "Prevent Diabetes STAT: Screen, Test, Act – Today" in the campaign to increase screening and testing for persons at risk for prediabetes, and referral to DPP.
- Implement a social marketing campaign to increase awareness of type 2 diabetes and to increase utilization of DSME programs.
- Inform and educate health care providers in order to facilitate referrals to DSME programs.
- Increase diagnosis of diabetes and prediabetes and referrals to DPP and DSME through the use of health information technology (HIT).
- Increase coverage and reimbursement for DPP. Educate employers and Medicaid Managed Care Organizations (MCOs) about the benefits and cost-savings of offering DPP as a covered health benefit. However, Act 68<sup>66</sup> requires licensed providers to be compensated by Health Maintenance Organizations (HMOs), and this impedes reimbursement of community-based providers for DPP.

PADOH's objectives include:

- Increase awareness of prediabetes, type 2 diabetes, and Diabetes Prevention and Control education programs (DSME and DPP).
- Recruit and retain greater numbers of persons with prediabetes or at risk for developing Type 2 diabetes for participation in DPP. Treating prediabetes early with dietary changes, weight loss, and increased physical activity can help prevent or delay the onset of type 2 diabetes.
- Increase access to DPP: people with prediabetes or at risk for developing type 2 diabetes will have the ability to reach, afford, and enter DPP services.
- Increase referrals to and participation in DSME programs.

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<sup>65</sup> This section is based on material supplied by PADOH to the Commission.

<sup>66</sup> Act No. 68 of 1998 (P.L.464), referred to as the Quality Health Care Accountability and Protection Act; 40 P.S. §§ 991.2101—991.2194.

- Improve community clinical linkages where healthcare providers refer patients to programs and programs report back to the providers on the patient’s progress.

PADOH’s measures of success include:

- Increased number of people screened for prediabetes
- Increased number of people attending and making lifestyle changes as a result of DSME and DPP
- Increased referrals from medical providers for people with prediabetes to DPP and for people with diabetes to DSME
- Increased number of people with prediabetes who have insurance coverage for DPP
- Decreased number of people diagnosed with type 2 diabetes
- Decreased hospitalizations for people with type 2 diabetes

PADOH recommends that the Commonwealth continue to do the following:

- Support State funding for diabetes prevention and control programs.
- Support mandates related to coverage for prevention and management programs in state-regulated insurance plans.
- Seek opportunities to back local or regional education programs like the DSME.
- Increase awareness of programs in the community by engaging residents at the local level.
- Support funding for type 1 diabetes research through the continuation of the Act 133 income tax check-off.
- Increase awareness of multiple risk factors and their role in diabetes prevention and management, e.g., tobacco use, physical inactivity, and poor nutritional choices.
- Increase awareness of how diabetes is closely tied to other chronic diseases like heart disease, stroke, and cancer.

## **PADOH Programs<sup>67</sup>**

### *Juvenile Diabetes Cure Research Tax Check-off Program*

Cost and source of funding: Tax Check-off Funds, \$50,000

Grantee: Pennsylvania State University

Population addressed: People with type 1 diabetes in Pennsylvania (60,000-120,000)

The Juvenile Diabetes Cure Research Tax Check-Off Program was established pursuant to Act 133 of 2004.<sup>68</sup> The Act created a state income tax check-off option for individuals to contribute a portion of their state tax refund to be donated directly to the Department to support research for type 1 diabetes. The Department publishes an annual report<sup>69</sup> to the Pennsylvania General Assembly, which provides an update on activities and contributions of the DPCP, as well as guidelines for distribution of funds collected.

<sup>67</sup> This section is based on information supplied by PADOH to the Commission.

<sup>68</sup> This legislation added § 315.7 to the Tax Reform Code of 1971.

<sup>69</sup> PADOH, “Juvenile Diabetes Cure Research Tax Check-Off Program Annual Report.”

Under this program, for the period from January 1, 2015 through December 31, 2016, the Department has a contract in place with Pennsylvania State University to conduct a research project to identify the role of microRNA-34a in inhibiting the generation and function of diabetogenic B cells and the development of type 1 diabetes.

#### *Diabetic Eye Disease*

Cost and source of funding: Legislative Special: \$50,000

Partners: National Eye Institute, schools, health care systems

Grantee: Pennsylvania Association for the Blind

Population addressed: People with high risk for diabetic eye disease

PADOH has a contract in place with Pennsylvania Association for the Blind to provide outreach and education for persons identified as being at high risk for diabetic eye disease for the period July 1, 2014 through June 30, 2015.

#### *LiveHealthyPA Grant*

This grant is provided by the CDC's National Center for Chronic Disease Prevention and Health Promotion, entitled the "Grant to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health" also known as the 1305 Grant (which refers to the grant's RFA number.<sup>70</sup> The grant promotes a coordinated approach of strategies that focus on modifiable risk factors and multiple chronic conditions. Recognizing that each state's role in chronic disease prevention is more important than ever, the Commonwealth is being funded to address diabetes, heart disease, obesity, and associated risk factors that contribute to the leading causes of premature death and disability in the United States.

#### *Diabetes Self-Management Education (DSME)*

Cost and source of funding:

- a. Federal – 1305 Grant: \$100,611
- b. Preventive Health & Health Services Block Grant: \$100,000

Partners: Department of Human Services, Medicaid Managed Care Organizations, Health Systems

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<sup>70</sup> See Grants.Gov, <http://www.grants.gov/web/grants/view-opportunity.html?oppId=221573> (February 20, 2013).

Grantees or contractors: The Health Promotion Council (HPC)<sup>71</sup>

Population addressed: People living with diabetes in Pennsylvania, estimated to be 1,200,000.

The Commonwealth's diabetes programs act primarily to increase people's access to, referral to, and utilization of Diabetes Self-Management Education (DSME) providers. As of February 2015, there were 364 certified DSME programs in the state.<sup>72</sup> CDC data count 46,264 participants in Pennsylvania DSME programs in 2013.<sup>73</sup>

The DSME ensures that residents receiving AADE-accredited and/or ADA-recognized diabetes self-management education. DSME is a collaborative process through which people with diabetes gain the knowledge and skills needed to modify their behavior and successfully self-manage the disease and its related conditions. This process incorporates the needs, goals, and life experiences of the person with diabetes and is guided by evidence-based standards.

PADOH 1) assesses DSME capacity in Pennsylvania; 2) promotes DSME to people with diabetes, employers, payers, managed care organizations, and providers to increase DSME referrals and utilizations; 3) is establishing a statewide referral system; and 4) expanding the number of AADE-accredited and ADA-recognized DSME sites in Pennsylvania in high-need areas.

### *Information Technology*

Utilizing electronic health record (EHR) systems, PADOH is working with health systems on the quality improvement processes to implementing policies and practices to refer persons with diabetes to DSME, and those with prediabetes or at high risk for type 2 diabetes to a CDC-recognized lifestyle change program. Health systems will receive hands-on technical assistance to set up their EHRs with clinical decision support (CDS) for prediabetes screening and diagnosis (hybrid ADA-USPSTF<sup>74</sup> criteria), and referral to a CDC-recognized lifestyle change program.

### Cost and source of funding:

- a. Federal – 1305 Grant: \$158,550
- b. Preventive Health & Health Services Block Grant: \$100,000

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<sup>71</sup> The Health Promotion Council of Southeastern Pennsylvania is a nonprofit organization that addresses chronic disease prevention and management. Its webpage is at <http://www.hpcpa.org/>.

<sup>72</sup> Diabetes Self-Management Education Site Date, ADA and American Association of Diabetes Educators (AADE), February 2015.

<sup>73</sup> Diabetes Self-Management Education Encounter Data, ADA and AADE, October 2013.

<sup>74</sup> United Preventive Services Task Force, is an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services. It is funded and appointed by the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ).

Partners: Health Systems

1. Grantees or Contractors: The Health Promotion Council (HPC) and Quality Insights of Pennsylvania.<sup>75</sup>
2. Population Addressed: People with diabetes or prediabetes and people living with diabetes. In Pennsylvania, an estimated 7% (896,000) have been told by a health professional that they have prediabetes or borderline diabetes and an estimated 1,200,000 people have diabetes.

*Closing the Referral Loop*

PADOH, through its grantees and partners, is facilitating bidirectional referrals between community resources and health systems, including DSME and CDC-recognized lifestyle change programs. This closes the referral communication gap, between the referring health care provide and community-based service utilizing DIRECT<sup>76</sup> licensing.

1. Cost and source of funding: Federal – 1305 Grant: \$158,550
2. Partners: Health Systems, Community-based organizations, and Quality Insights of Pennsylvania
3. Grantees or contractors: The Health Promotion Council (HPC)
4. Population addressed: People with diabetes or prediabetes

*Pennsylvania Alliance to Improve Community-Clinical Partnership*

State funds are allocated to plan and execute strategic data-driven actions through a network of stakeholders to build support for community-clinical linkages, specifically DSME and CDC-recognized lifestyle change programs. Stakeholders from each community health district will be identified and confirmed to serve on the statewide network to build support for these linkages. A comprehensive plan to build support, addressing access, referrals, and insurance coverage for CDC-recognized lifestyle change programs and DSME will be developed and shared via a statewide network.

1. Cost and source of funding: State Diabetes allocation: \$50,000
2. Partners: Department of Human Services, Medicaid Managed Care Organizations, Pennsylvania Employee Benefits Trust Fund, business coalitions, health care systems, health insurers, and community-based organizations
3. Grantees or contractors: Health Promotion Council.
4. Population Addressed: People with diabetes or prediabetes.

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<sup>75</sup> Quality Insights of Pennsylvania is a nonprofit company that addresses health care quality improvement. Its webpage is at <http://www.qipa.org/Home.aspx>.

<sup>76</sup> DIRECT is a software application that supports a form of secure e-mail. It provides the standards and services necessary to push content from a sender to a receiver.



## Diabetes Prevention Program (DPP)

The Diabetes Prevention Program (DPP) is an evidence-based, structured lifestyle change intervention program for delaying or preventing type 2 diabetes among people at high risk. Participants with prediabetes meet in groups with a trained lifestyle coach once a week for 16 weeks and then once a month for 6 months to learn ways to incorporate healthier eating, moderate physical activity, and problem-solving and coping skills into their daily lives.

Research has shown that weight loss of 5 to 7 percent of body weight achieved by reducing calories and increasing physical activity reduces the risk of developing type 2 diabetes by 58 percent in people at high risk for the disease, and for people over 60 years old, the program reduces risk by 71 percent. A follow-up study found, after ten years, that those who had participated in the earlier lifestyle change intervention had a 34 percent lower rate of type 2 diabetes.<sup>77</sup>

PADOH's goal is to grow the CDC-recognized DPP network in the following high need regions by June 30, 2015:

<b>Southwest</b>	Adagio Health <sup>78</sup> centers in Fayette and Beaver counties, and at Conemaugh Hospital in Cambria County
<b>Southcentral</b>	Four sites, all YMCAs, serving three counties in the South-central area (Dauphin, Franklin, and Blair)
<b>Southeast</b>	Schuylkill Health and a community center in Shenandoah in Schuylkill County, and Rising Sun Health Center in Philadelphia
<b>Northeast</b>	Blue Mountain Health System in Carbon County and YMCA in Carbondale, Lackawanna County

1. Cost and source of funding: Federal - Preventive Health & Health Services Block Grant: \$915,000
2. Partners: Listed above
3. Contractors or grantees: Adagio Health, American Lung Association, Health Promotion Council, Burn Foundation<sup>79</sup> and Public Health Management Corporation<sup>80</sup>
4. Population addressed: People with prediabetes or at high risk of developing type 2 diabetes. In Pennsylvania, an estimated 7 percent have ever been told by a health professional that have prediabetes or borderline diabetes.

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<sup>77</sup> Diabetes Prevention Program Research Group, "Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin" *New England Journal of Medicine* 346: 393-403 (February 7, 2002), <http://www.nejm.org/doi/full/10.1056/NEJMoa012512>.

<sup>78</sup> Adagio Health, based in Pittsburgh, delivers care in 23 counties in Western Pennsylvania. Its webpage is at <http://www.adagiohealth.org/>.

<sup>79</sup> The Burn Foundation is a community based organization serving the Delaware Valley. Its webpage is at <http://www.burnfoundation.org/index.cfm>.

<sup>80</sup> The Public Health Management Corporation is a nonprofit public health institute based in Philadelphia. Its website is at <http://www.phmc.org/site/index.php>.

Future Capacity. In order to continue growing the DPP, state diabetes funds were allocated to train four DPP master trainers before June, 2015. These DPP master trainers will each commit to providing two free DPP Lifestyle Coach Trainings in Pennsylvania each state fiscal year, based on demand. This will allow interested organization and health systems to receive free training to certify staff to provide DPP classes.

1. Cost and source of funding: State diabetes allocation: \$50,000
2. Partners: Adagio Health, American Lung Association, Health Promotion Council, the Burn Foundation and Public Health Management Corporation Grantees or contractors: Health Promotion Council
3. Population addressed: People with prediabetes or at high risk of developing type 2 diabetes.

Insurance Coverage. PADOH is working with the Office of Administration (OA) with the goal of having PEBTF provide insurance coverage for CDC-recognized lifestyle change programs to beneficiaries. The Department is also working with the Pennsylvania Department of Human Services (PDHS) Office of Medical Assistance Programs (OMAP) and Medicaid Managed Care Organizations (MCO) to encourage coverage for Medicaid beneficiaries.

1. Partners: OA; PDHS-OMAP; Medicaid MCOs
2. Population Addressed: People with prediabetes or at high risk of developing type 2 diabetes.

Amounts from the blended fund are used for the following Department programs as well as diabetes: heart disease and stroke; nutrition, physical activity, obesity; and school health

Obesity and Wellness Program. PADOH administers an Obesity and Wellness Program, which has the following components:<sup>81</sup>

- Educating Practices/Physicians in their Communities (EPIC): Pediatric Obesity Evaluation, Treatment and Prevention in Community Settings (2011-present). This presentation on obesity screening, patient education, and referrals was given 57 times by 139 regional presenters to 1,487 practitioners, potentially reaching 367,015 patients.
- Safe Routes to Schools and Capacity Building Mini-Grant Programs (2011-present). This initiative is intended to encourage pupils to ride and bike to school, using five components referred to as the five E's: Education, Education, Encouragement, Enforcement, and Evaluation
- New School Foods and Labeling System Initiative (2010-12), featuring the "Go" food label to designate healthy foods
- WalkWorks (2010-12) to improve access to local walking routes and social support of individuals wanting to improve their physical activity. Walking routes were established in six Western Pennsylvania counties.

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<sup>81</sup> <http://www.health.pa.gov/My%20Health/Healthy%20Living/Obesity/Pages/default.aspx#.VpfFiy5bjsB> (link inoperative, January 28, 2016).

- Young Lungs at Play (YLAP). This established 837 tobacco free parks and playgrounds in more than 133 municipalities.
- Pediatric Obesity Update 2010 Counter Details (2010-12). This appears to be a training module for physicians to improve prevention, education, and early identification for patients.

## **Department of Aging**

The OPTIONS program offers home and community-based services to eligible consumers aged 60 years or older to assist them in maintaining independence with the highest level of functioning in the community and to delay the need for more costly care. The OPTIONS program supports over 45,000 older adults annually. Services include:

- Adult day services
- Care management
- Consumer reimbursement:
- Emergent services:
- In-home meals
- Personal Emergency Response System (PERS)
- Personal care services
- Home health
- Home modifications
- Home support
- Medical equipment, supplies, assistive/adaptive devices
- Transportation

The Pharmaceutical Assistance Contract for the Elderly (PACE) Program and PACE Needs Enhancement Tier (PACENET) programs assist qualified older adults age 65 years or older in paying for their prescription medications. PACE pays the cost of prescriptions drugs and insulin supplies over a copay. PACENET pays the cost of prescription drugs and insulin supplies after a claimant meets the premium requirement and a copayment. The PACEPlus Medicare Program pays Medicare premiums for Part D for PACE and PACENET cardholders. PACENET cardholders repay the Part D premiums for the program. The PACE and PACENET programs support over 300,000 older adults annually.

In fiscal year 2013-2014, The Department of Aging provided services to a total of 83,323 individuals with diabetes, 58,436 of whom received pharmaceutical assistance through the PACE and PACENET programs. The remaining 24,887 received services through the OPTIONS program.

## Department of Conservation and Natural Resources (DCNR)

### *Outdoor Recreation*

Physical activity plays a vital role in combating diabetes, and can be particularly potent factor in Pennsylvania, where an estimated 65 percent of adults are overweight or obese.<sup>82</sup> Fortunately, Pennsylvania is home to millions of acres of forests and fields which serve as the setting for almost any recreational pursuit imaginable.

Currently, The Department of Conservation and Natural Resources (DCNR) runs 120 state parks and over 2.2 million acres of state forest land which can aid in combating the obesity epidemic through outdoor recreation. DCNR also partners with various programs that aim to reconnect people to the outdoors to promote health and wellness. This includes the Get Outdoors PA program which promotes guided outdoor recreation activities such as hiking, canoeing and biking, to engage new audiences and to create meaningful and lasting connections between Pennsylvania's residents and its natural resources. The activities of Get Outdoors PA are made possible through the cooperation of DCNR, PADOH, the Pennsylvania Fish & Boat Commission, the Pennsylvania Game Commission, the Pennsylvania Recreation & Park Society, the Pennsylvania Parks & Forests Foundation, and the Pennsylvania Land Trust Association, among others.<sup>83</sup>

In addition, DCNR is charged with establishing community conservation partnerships with grants and technical assistance to benefit rivers, trails, greenways, local parks and recreation, regional heritage parks, open space and natural areas. The grants DCNR provides at the State and local level benefits Pennsylvania's citizens by allowing opportunity for recreation right in their own neighborhood. Encouraging and supporting these programs helps to ensure ample opportunity for Pennsylvanians to get and remain active. Over 68,000 participated in programs in 2012.<sup>84</sup>

Studies have shown that proximity to outdoor recreation spots, such as parks, increases physical activity among a variety of populations.<sup>85</sup> For this reason, Pennsylvania should continue to encourage developing recreational uses for green spaces on the State and local levels.

Every five years, Pennsylvania must generate a new statewide recreation plan to remain eligible to receive Federal Land and Water Conservation funds. *The 2014-2019 Statewide Outdoor Recreation Plan*<sup>86</sup> emphasizes the State's role in promoting health and wellness through outdoor recreation. In order to enhance the availability and the health benefits of these programs, PADOH should strengthen coordination with DCNR to ensure the public is aware of these opportunities. The plan included the following recommendations to help increase physical activity in the state:

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<sup>82</sup> Trust for America's Health and the Robert Wood Johnson Foundation, "The State of Obesity: Pennsylvania," (2015), <http://stateofobesity.org/states/pa/>.

<sup>83</sup> Get Outdoors PA, "About Us," <http://getoutdoorspa.org/aboutus>, (accessed January 20, 2016).

<sup>84</sup> DCNR, "2014-2019 Statewide Outdoor Recreation Plan," n.d. <http://www.paoutdoorreplan.com/>, (accessed January 21, 2016).

<sup>85</sup> DCNR, "2014-2019 Statewide Outdoor Recreation Plan," 35.

<sup>86</sup> DCNR, "2014-2019 Statewide Outdoor Recreation Plan," n.d. <http://www.paoutdoorreplan.com/>, (accessed January 21, 2016).

- funding and supporting innovative pilot programs that build a health and wellness connection with outdoor recreation programming that emphasizes, volunteer recruitment and training and inclusion of diverse populations;
- linking state grant program criteria to community projects designed to enhance health through outdoor recreation;
- supporting the continuation of PennDOT and DCNR trail development, including bicycle and pedestrian trail coordination and grant making;
- developing park/trail “prescription” programs in cooperation with health care providers, insurance companies, health foundations, economic development organizations, local government associations and social services providers;<sup>87</sup>
- encouraging partnerships between recreation and planning professionals and the health care community to identify private funding opportunities, cooperate in community wellness efforts and implement community health assessment strategies; and
- convening statewide and regional summits that bring together health care and parks and recreation professionals.

### **Department of Education (PDE)**

PDE is responsible for helping about 7,500 school pupils who are afflicted with diabetes, primarily Type 1. See Table 11. The PADOH publication “Diabetes in School Children: Recommendations & Resource Guide for School Personnel, 2009” as the primary resource for school faculty and staff. The guide was initiated through the PADOH Diabetes Prevention and Control Program (DPCP) and compiled by PADOH staff in consultation with the Diabetes Nurse Consultants and School Health Nurse Consultants in PADOH’s Division of School Health and Bureau of Health Statistics and Research. The guidelines are based largely on “Helping the Student with Diabetes Succeed: A Guide for School Personnel,” which was developed by the National Diabetes Education Program (NDEP), a joint program of the NIH and the CDC. The Pennsylvania guide reflects national best practices and complies with Pennsylvania law and education policies.

The guide focuses on diabetes management and provides information targeted at specific groups within the school setting. Diabetes management in a school setting relies on the successful implementation of school health teams, groups of faculty and staff, who are informed and play active roles in helping each other help students manage the disease. The guide recommends that health teams include the student with diabetes, along with parents and guardians, the school nurse, principal, teachers, guidance counselor, and other building administrators and staff.<sup>88</sup> It includes further guidelines for coaches and physical education instructors, food service managers and lunchroom staff, as well as school bus transportation and emergency response.

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<sup>87</sup> “Park prescriptions is a concept that links the healthcare system and public lands, such as local parks, to create healthier people. NRPA is collaborating with the Centers for Disease Control and Prevention (CDC) and the Institute at the Golden Gate in California, to convene leaders from across the country to elevate the concept of park prescriptions to a best practice in preventive health. The goal of this effort is to create a national agenda for implementing park prescriptions more widely by further understanding and defining “park prescriptions,” identifying successful models from across the country, and developing standardized measurement and data collection methods that define effectiveness of these programs.” National Recreation and Park Association, “Park Prescriptions,” [www.nrpa.org/Grants-and-Partners/Recreation-and-Health/Park-Prescriptions/](http://www.nrpa.org/Grants-and-Partners/Recreation-and-Health/Park-Prescriptions/), accessed January 21, 1206.

<sup>88</sup> “Diabetes in School Children: Recommendations & Resource Guide for School Personnel, 2009.”

## *PDE Plans*

Diabetes Medical Management Plan. Each student is expected to have an individualized Diabetes Medical Management Plan that is developed by his or her family along with their healthcare provider. The Diabetes Medical Management Plan forms the core of the student's Individualized Healthcare Plan (IHP) and Emergency Care Plan. Professional standards of practice require the school nurse to develop an IHP for each student with special medical needs.

504 Plan/Individual Education Plan. (IEP). Section 504 of the federal Rehabilitation Act of 1973 requires that each student who requires medical or educational accommodations has a service plan that meets his or her needs. Students with diabetes typically have 504 Plans/IEPs that establish:

- where and when blood glucose monitoring and treatment will take place;
- identity of licensed school nurses who are authorized to conduct blood glucose assessment,
- insulin and glucagon administration, and treatment of hypoglycemia and hyperglycemia;
- location of the student's diabetes management supplies;
- free access to the restroom and water fountain;
- nutritional needs, including provisions for meals and snacks;
- plans to enable full participation in all school sponsored activities and field trips;
- alternative times for academic exams if the student is experiencing hypoglycemia or hyperglycemia;
- permission for absences, without penalty, for doctors' appointments and diabetes-related illness; and
- maintenance of confidentiality and the student's right to privacy

Although each student with diabetes should have a Diabetes Medical Management Plan, they does not substitute for the federally mandated plans. "Diabetes in School Children" includes Recommendations & Resource Guide for School Personnel, 2009" provides templates for the required documents.

**Table 10**  
**Pennsylvania School Students with Diabetes**  
**by School Year**

<b>Year</b>	<b>Average Daily Enrollment</b>	<b>Students with Diabetes Type 1</b>	<b>Percent</b>	<b>Students with Diabetes Type 2</b>	<b>Percent</b>
2008-2009	1,958,987	5,840	0.3%	1,322	0.07%
2009-2010	1,977,591	6,123	0.31	1,342	0.07
2010-2011	1,972,043	6,167	0.31	1,331	0.07
2011-2012	1,909,124	6,084	0.32	1,216	0.06
2012-2013	1,900,013	6,261	0.33	1,222	0.06
*Statistics did not vary widely across districts					
Source: PADOH, Division of School Health, "Students with Medical Diagnoses of Diabetes by Health District and County," for school years 2008-2009 through 2012-2013.					

**Department of Human Services (PDHS)<sup>89</sup>**

The major involvement of the Pennsylvania Department of Human Services (PDHS) with people who have diabetes involves the Medical Assistance program. In calendar year 2012, there were 48,515 Medicaid recipients identified with diabetes. These recipients were "non-dual eligible," meaning they were eligible for Medicaid only and not both Medicare and Medicaid. There were 9,365 inpatient admissions in 2012 for adults with diabetes covered by Medical Assistance.

*Office of Medical Assistance Programs (OMAP)*

HealthChoices Physical Health is PDHS's mandatory managed care program for medical assistance recipients who receive physical health services.<sup>90</sup> The "Governor's Executive Budget 2015-2016" estimates that medical assistance coverage will be made available to more than 600,000 Pennsylvania residents during the fiscal year.<sup>91</sup> The budget proposes an approximate total of \$5.2 billion for the Commonwealth's medical assistance programs.<sup>92</sup>

The federal Balanced Budget Act (BBA) of 1997 requires that state agencies contract with External Quality Review Organizations (EQRO) to conduct performance evaluations of the services provided by contracted Medicaid Managed Care Organizations (MCOs). Included in evaluations

<sup>89</sup> This section is based on material supplied to the Commission by Meaghan Sprout, Deputy Director, Office of Legislative Affairs, PDHS.

<sup>90</sup> Pennsylvania Office of the Budget, "Governor's Executive Budget 2015-2016," E30-14.

<sup>91</sup> Ibid.

<sup>92</sup> Ibid., E30-17.

are: analysis and evaluation of aggregated info on quality, timeliness, and access to healthcare services that the MCO furnishes to Medicaid Managed Care recipients.<sup>93</sup>

PDHS requires that managed care organizations (MCOs) that provide coverage to medical assistance recipients submit performance data to the HealthChoices program for purposes of monitoring and evaluation. PDHS uses three sets of performance data to conduct the evaluations:

- HEDIS (Healthcare Effectiveness Data and Information Set), established by the National Committee for Quality Assurance (NCQA)
- Consumer Assessment of Healthcare Providers and Systems (CAHPS), established by the Agency for Healthcare Research and Quality (AHRQ)
- Pennsylvania Performance Measures, which were selected by PDHS as part of the review conducted in compliance with federal BBA requirements.

HealthChoices annual report, “Performance Trending Report 2014,” included data from January 1, 2011, through December 31, 2013.<sup>94</sup> The performance areas chosen for comprehensive diabetes care included evaluating percentages of how many medical assistance recipients with diabetes received the following services from their MCOs during each of the three years:

- LDL-C screening
- Eye exams
- A1C screening
- Medical attention for nephropathy<sup>95</sup>

<b>Table 11</b> HealthChoices Performance Areas Medical Assistance Recipients with Diabetes Average Annual Percentages, 2011-2013 <sup>1</sup>			
<b>Type of Screening or Exam</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
LDL-C	79.5%	77.1%	79.1%
Eye	61.4	58.3	58.1
A1C	83.6	81.9	84.6
Nephropathy	81.1	81.7	83.6
<sup>1</sup> HEDIS reports 2011, 2012, and 2013 data as from years 2012, 2013, and 2014.			
Source: PDHS, Office of Medical Assistance Programs, “Performance Trending Report 2014,” (March 2015), 20-27.			

The differences between years are not statistically significant and do not indicate measureable trends.

<sup>93</sup> See 42 CFR § 438.358.

<sup>94</sup> PDHS, Office of Medical Assistance Programs (OMAP), “Performance Trending Report 2014,” (March 2015), i.

<sup>95</sup> Ibid., 20-27.



## INSURANCE COVERAGE

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### **Pennsylvania Benefits Trust Fund**

The Pennsylvania Employees Benefit Trust Fund (PEBTF) was established in 1988 as the administrator of health benefits coverage for eligible employees of the Commonwealth.<sup>96</sup> PEBTF is not an insurance company in and of itself. Rather, it contracts with independent health insurers to administer and manage day-to-day benefits claims made by its beneficiaries. PEBTF makes payments on beneficiaries' claims through the contracted private health insurers.

Health benefits available through PEBTF are determined by the fund's board of trustees. Benefits include a wide range of preventive screenings and tests, including those that monitor people's health for risk of chronic illness such as diabetes. Glucose, blood pressure, and cholesterol screening is available once per calendar year as preventive benefits. Healthy diet counseling and medical nutritional counseling are each available twice per calendar year, depending on the beneficiary's health risks and condition.<sup>97</sup> Pregnant women are eligible for gestational diabetes screening.

People with diabetes are further eligible for diabetes education as provided by a nutritionist or dietician, and foot care up to four times per calendar year, PEBTF provides coverage for patient supplies, such as syringes, needles, lancets, and test strips. Diabetes medications, including insulin, are covered through the PEBTF Prescription Drug Plan. Eyeglasses and contact lenses are covered once per 12 months for beneficiaries whose diabetes diagnosis requires them; otherwise, the benefit provides for eyeglasses and contact lenses once per 24 months.<sup>98</sup>

The most recent data show that PEBTF covered diabetes benefits for 11,962 claimants, which is a rate of 6.67 claimants per 100 covered members.<sup>99</sup>

PEBTF offered a "Get Healthy Program" for employees and covered spouses/domestic partners from September 1, 2015 to December 31, 2015. Beneficiaries who registered with the program and reported results of health screenings for blood glucose, blood pressure, cholesterol, and body mass index were eligible for a discount in their health benefits contribution.<sup>100</sup> Council 13 of the Association of Federal, State, County, and Municipal Employees (AFSCME), the union representing the bulk of Commonwealth employees, reported that the discount provided a reduction in contribution of from 5 percent to 2 percent of salary.<sup>101</sup>

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<sup>96</sup> PEBTF, "Summary Plan Description (March 2015)," PEBTF, <https://www.pebtf.org/LiteratureRequests/SPD.aspx>, 1.

<sup>97</sup> *Ibid.*, 34.

<sup>98</sup> *Ibid.*, 100.

<sup>99</sup> Email from Kathryn Farley, Executive Director, PEBTF to Commission staff, October 19, 2015.

<sup>100</sup> PEBTF, "Get Healthy Program," (information flyer) <https://www.pebtf.org/GetHealthy/>.

<sup>101</sup> William Kauffman, "Reminder: Know Your Numbers! Get a Wellness Screening While There's Still Time," AFSCME Council 13 newsletter, [http://afscme13.org/news\\_detail.php?id=70](http://afscme13.org/news_detail.php?id=70).

Retirees and their eligible dependents are covered through PEBTF either under the Retired Employees Health Program (REHP) or Medicare Part A or Part B. The REHP covers health benefits expenses for retirees who are not eligible for Medicare. Retirees who are eligible for Medicare are required to enroll for benefits under both Part A and Part B programs.<sup>102</sup>

### Private Health Insurers

Commission staff contacted the health insurers that contract to provide PEBTF benefits. The following information was sought:

- the number of individuals with diabetes impacted or covered.
- the number of individuals with diabetes and family members impacted by prevention and diabetes control programs
- the financial toll or impact of diabetes and its complications
- the financial toll or impact of diabetes and its programs in comparison to other diseases and conditions

The materials in this chapter consist of the insurers’ submissions to the Commission in response to its inquiry, unless otherwise indicated.

In addition, the Commission requested any formal plan the insurance provider has that relates to diabetes and a description of coverage for a diabetes prevention program (DPP), diabetes self-management education (DSME), and any other treatment modalities related to diabetes. Responses were received from Blue Cross of Northeastern Pennsylvania, Crozer-Keystone Health System, Geisinger Health System, Highmark, and UnitedHealthcare.<sup>103</sup> Each provided information to the Commission with respect to their coverages for diabetes. Because of the considerable differences in size and scope of their membership, not all insurers responded to all questions and the insurers’ responses are not directly comparable. For example, the insurers were asked for the number of members who are beneficiaries of PEBTF. Not all respondents were able to categorize plan members by that identifier. Table 12 shows the number of people with diabetes who are covered by each of the five respondents.

<b>Table 12</b> Individuals Covered by Insurers contracted by PEBTF	
<b>Insurers</b>	<b>Individuals with diabetes</b>
Blue Cross of Northeastern PA	16250
Crozer-Keystone Health System*	681
Geisinger Health System	47933
Highmark	255503
UnitedHealthcare*	1500
*Included only employees covered by PEBTF	

<sup>102</sup> PEBTF, “Retired Employees Health Program Benefits Handbook, July 2014,”

<https://www.pebtf.org/LiteratureRequests/SPD.aspx>, 1

<sup>103</sup> Aetna declined to participate in this report. E-mail from Margaret Durkin, BravoGroup, to Commission staff, July 30, 2015.

Table 13 shows the costs associated with different chronic medical conditions, as provided by the Crozer-Keystone Health System, Highmark, and Blue Cross of Northern Pa.

<b>Table 13</b> Selected Health Conditions Number of Cases and Insurance Costs Pennsylvania, 2015									
Condition	Crozer-Keystone Health System			Highmark			Blue Cross of Northeastern PA		
	No. of cases	Cost assoc. w/cond.	Avg. cost per claim	No. of cases	Cost assoc. w/cond.	Avg. cost per claim	No. of cases	Cost assoc. w/cond.	Avg. cost per claim
Diabetes	681	\$1,882,827	\$2,765	255,503	\$178,786,528	\$700	16,520	\$9,623,478	\$583
Asthma	667	707,530	1,061	156,444	51,289,051	328	8,240	3,158,347	383
Chronic Obstructive Pulmonary Disease (COPD)	n.d.	n.d.	--	78,959	71,806,643	909	2,930	2,486,646	849
Depression	n.d.	n.d.	--	204,963	84,377,417	412	13,021	11,005,208	845
Coronary Artery Disease (CAD)	n.d.	n.d.	--	143,374	341,512,391	2,382	5,393	24,270,853	4,500
Congestive Heart Failure (CHF)	n.d.	n.d.	--	60,907	39,701,359	652	754	2,605,511	3,456
Hypertension	1,764	2,358,740	1,337	694,689	117,155,077	169	32,398	6,534,577	202
Chronic Kidney Disease (CKD)	n.d.	n.d.	--	59,173	22,199,403	375	n.d.	n.d.	--
Hyperlipidemia	n.d.	n.d.	--	635,122	50,157,183	79	n.d.	n.d.	--
Irritable Bowel Disease	n.d.	n.d.	--	18,107	99,630,542	5,502	n.d.	n.d.	--
Low Back Disorder	n.d.	n.d.	--	n.d.	n.d.	--	29,052	24,287,755	836

Source: Information provided to Commission staff by insurance carriers.

### Crozer-Keystone Health System<sup>104</sup>

Crozer-Keystone Health System (CKHS) is a not-for-profit health system headquartered in Springfield, Pennsylvania. It operates five hospitals, including Crozer-Chester Medical Center in Upland, Delaware County Memorial Hospital in Drexel Hill, Taylor Hospital in Ridley Park, Springfield Hospital in Springfield, and Community Hospital in Chester. In addition, the health system operates several outpatient centers, the Healthplex Sports Club, and a comprehensive physician network of primary-care and specialty practices.

<sup>104</sup> This section is based on material provided by Susan Winkles Director, Benefit Communications Crozer-Keystone Employee Benefit Services.

Based on 2014 medical and prescription drug claims data, CKHS covered 681 PEBTF beneficiaries who had a diagnosis of diabetes.

*Coverage*

Coverage for medically necessary care is included Crozer-Keystone Medical Plans. Up to 100 percent coverage is available if care is provided in a CKHS facility and low office visit copays apply if care is provide in a Crozer-Keystone Health Network physician office. Over 90 percent of employee enrolled in a CKHS health plan are covered under these plans.

The CKHS Center for Diabetes includes prevention and control programs and is available to those with prediabetes and diabetes. Other diabetes programs include a Nurse Navigator Diabetes Management program and Group Wellness Programs. Weight management, nutrition counseling, and fitness programs are available as well.

Fifty percent of PEBTF beneficiaries covered under a CKHS medical plan participated in voluntary non-fasting biometric screenings in 2013 or 2014. A1C levels for this group highlight the importance of educating people with prediabetes about their risks. See Table 14.

<p align="center"><b>Table 14</b>                      CKHS PEBTF Beneficiaries                      A1C Test Results                      2013-2014</p>			
<b>A1C Levels</b>	<b>Range</b>	<b>Participants</b>	<b>Percent of Total Participants</b>
Normal	< 5.7	1,629	60.92%
Pre-Diabetic	5.7 - 6.5	846	31.64
Diabetic	6.6 - 10	176	6.58
Diabetic Extreme	> 10	23	0.86

## Geisinger Health Plan (GHP)<sup>105</sup>

### *Coverage*

All members within GHP with diabetes have formal outreach via newsletters and GHP's online portals. All members have access to an online service, which contains self-management education content on nutrition and exercise as well as a diabetes module. A nurse-led health management program provides outreach and health coaching by a specially trained registered nurse. This program focuses on teaching the member and his or her family about diabetes self-management, including diet, exercise, glucose monitoring, medication management, symptom monitoring, complication prevention, and standards of care. A case management program is available for members with diabetes who are hospitalized or who have significant co-morbidity. All hospitalized diabetics receive a phone call from one a case managers within 24-48 hours after discharge. The case manager works with the member for a minimum of four weeks to insure a safe transition from hospital to home. These sessions focus on medication reconciliation, development of an action plan for emergencies, and appropriate in home support. Once the member transitions safely through those four weeks, the case manager refers the member to a Health Manager if there are remaining gaps in care. For very high risk members (those with readmissions or declining health), home visits are available with community health assistants or case managers.

### *Cases and Expenses*

In total, GHP identified almost 50,000 members with diabetes, representing on average about 9 percent of the total health plan population (512,000 members). Up to 26 percent of GHP's Medicare Advantage population has a diagnosis of diabetes and 36 percent of its Special Needs Plan (SNP) has a diagnosis of diabetes. Five percent of its Medicaid population are diagnosed with diabetes. See Table 15.

<b>Medical Plan</b>	<b>Number of Plan Members</b>	<b>Diabetes Patients</b>	<b>Percent</b>
CHIP	8,753	22	0%
Commercial	210,867	12,923	6
Exchange	37,220	2,545	7
Nurse Identified	4,769	2	0
Medicaid	162,321	8,801	5
Medicare	83,725	21,889	26
SNP	4,811	1,751	36
Total	512,466	47,933	9

<sup>105</sup> This section is based on material provided to the Commission by Janet F. Tomcavage, Chief Population Health Officer, Geisinger Health System.

GHS has screened 59 percent of all members with diabetes and enrolled 48 percent in the nurse-led diabetes disease management program. In its commercial line of business, 46 percent of the known diabetics and enrolled 45 percent of those screened into the nurse led program. Rather than refer all those with diabetes to a disease management program, GHS uses predictive modeling tools and EHR data to identify those members with gaps in care. An enrollment rate of 45-50 percent is considered a best practice.

Geisinger Health System's overall average cost per member per month is \$400. The average per member per month cost for people with diabetes is \$1,500. The insurer's Medicare coverage for diabetes costs an average of \$1,740 per member per month. Coverage for all Medicare beneficiaries in a Geisinger plan averages \$900 per member per month.

Geisinger estimated that its diabetes expenses are comparable to the expense of other chronic diseases, such as chronic obstructive pulmonary disease and heart failure. The exception, with regard to cost of chronic diseases, is end-stage renal disease, which averages about \$8,000 per member per month.

## **Highmark / Independence Blue Shield<sup>106</sup>**

### *Coverage*

Highmark covers diabetes treatment under all plans in Western and Central Pennsylvania. This includes equipment and supplies, such as insulin and other medications to control blood sugar; blood glucose monitors and monitor supplies; and injection aids and infusion devices. Coverage is also provided for diabetic education programs, including visits upon the diagnosis of diabetes and subsequent visits. Diabetes treatment is subject to the plan's cost-sharing. Coverage is provided for early diabetes screening and for high-risk patients. Diabetes screening is covered for all costs. Health coaching is also provided for this condition.

Prevention of obesity is encouraged for children and adults. This includes coverage for additional annual preventive visits specifically for obesity, nutritional counseling visits specifically for obesity, laboratory tests including alanine aminotransferase (ALT), aspartate aminotransferase (AST), A1C or fasting glucose (FGS), and cholesterol screening.

Some Highmark beneficiaries have elected to expand their benefits for selected chronic conditions. People with diabetes who apply for and qualify for such benefits under the carrier's Value Based Benefits Program receive health coaching along with reduced or waived cost-sharing on medical and prescription drug services considered necessary to manage the member's condition. These include office visits, lipid panel, hemoglobin, liver function testing, basic metabolic panel, and insulin pump and supplies.

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<sup>106</sup> This section is based on material supplied to Commission staff by Betsy H. Taylor, Counsel, Highmark Health. The service provider for PEBTF beneficiaries in southeastern Pennsylvania is Independence Blue Shield, which is contracted through Highmark.

## *Cases and Expenses*

The total number of diabetes cases covered by Highmark under claims submitted from July 2014 to June 2015 was 255,503. The number of cases was determined through a primary or secondary diagnosis of diabetes. Of these cases, 210,062 met the criteria for Highmark Diabetes Disease Management Program. Criteria for the Diabetes Disease Management Program include a diagnosis of Diabetes plus a gap in care, certain utilization level, and other factors; a diagnosis of diabetes is not sufficient by itself. Of the total diabetes cases, 124,126 met the criteria for one of our other case or disease management programs. Criteria for another case or disease management program include members with comorbid conditions or multiple conditions, such as congestive heart failure, coronary obstructive pulmonary disease, or breast cancer. (Insureds can be identified to participate in multiple case management or disease management programs.) The total amount paid for services to diabetes patients was slightly more than \$3 billion, including all inpatient and outpatient services, professional services, and pharmacy.

### **Blue Cross of Northeastern Pennsylvania<sup>107</sup>**

#### *Coverage*

*Standard Coverage for Diabetes.* Blue Cross of Northeastern Pennsylvania (BCNEP) covers diabetes treatment under all plans in the 13 counties of Northeastern Pennsylvania. This includes equipment and supplies such as insulin and other agents to control blood sugar, blood glucose monitors, monitor supplies, injection aids, and infusion devices. Coverage is also provided for Diabetic Education programs, including visits upon the diagnosis of diabetes and subsequent visits. Diabetes treatment is subject to the plan's cost-sharing. Coverage is provided for early diabetes screening as well as screening for high-risk patients. Diabetes screening is covered at 100%. Health coaching and Disease Management are also provided for diabetes.

*Standard Coverage for Obesity.* Prevention of obesity is encouraged for children and adults. Plans include coverage for additional annual preventive visits specifically for obesity, nutritional counseling visits specifically for obesity, laboratory tests including alanine aminotransferase (ALT), aspartate aminotransferase (AST), A1C, or Fasting Glucose (FBS) and cholesterol screening.

#### *Cases and Expenses*

The total number of diabetes cases covered by BCNEP under claims submitted from July 2014 through June 2015 under policies sold in Pennsylvania and paid through July 2015 was 16,520. Of these cases, 12,363 met the criteria for BCNEP's Diabetes Disease Management Program. Criteria for the Diabetes Disease Management Program require a primary diagnosis of diabetes plus defined utilization levels or defined diabetes pharmacy utilization. A diagnosis of Diabetes is not sufficient by itself. The number of cases is determined by a primary or secondary diagnosis of diabetes and diabetes related illnesses (i.e., diabetic retinopathy). Of the total diabetes cases, 6,080 met the criteria for one of the other case or disease management programs. Criteria for case or disease management program include co-morbid conditions or multiple medical conditions, such as congestive heart failure, coronary obstructive pulmonary disease, or breast cancer. (Insureds can be

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<sup>107</sup> This section is based on material provided to Commission staff by Betsy H. Taylor, Counsel, Highmark Health.

identified to participate in multiple case management or disease management programs.) The total amount paid for services to diabetes patients was \$202.3 million, including all inpatient and outpatient services, professional services, and pharmacy.

### Merger with Highmark

On June 1, 2015, Highmark, Inc. merged with BCNEP after securing approval from the Pennsylvania Insurance Department. Upon completion of the agreement, the newly merged company will operate as Highmark Blue Cross Blue Shield and continue to provide health insurance coverage and administrative services to 550,000 people in BCNEP's service area. As part of the merger agreement, Highmark has agreed to maintain operations and substantial staffing levels in the region, and to create a local advisory board that will include BCNEP board members who will maintain the region's voice in major issues for at least four years. These representatives will offer insight and support in matters relating to the former BCNEP business. Highmark will add four representatives from the BCNEP board to the Highmark board of directors. Highmark and BCNEP will also contribute up to \$100 million through a charitable foundation to support health and wellness efforts across the BCNEP coverage area.

### **UnitedHealthcare of Pennsylvania<sup>108</sup>**

#### *Coverage*

#### Community and State

UnitedHealthcare of Pennsylvania (UHP) has a Disease Management Program for diabetes that includes an education component outlining recommended, routine appointment frequency, necessary testing and monitoring, and self-care.

The Disease Management Program improves the health outcomes of consumers and enables real-time information exchange and point of care decision making. Disease management is a proactive, population-based approach to managing specific conditions and disease states, and includes interventions designed to address the needs of individual members. Goals include improving the quality of care, quality of life, and health outcomes for consumers; helping individuals understand and manage their condition; improving tolerance of physical activity and eliminating health risk factors by adhering to treatment plans; reducing unnecessary hospital admissions and emergency room visits related to complications; improving the coordination of care; and preventing disease progression, among others.

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<sup>108</sup> This section is based on material provided to Commission staff by Gregory L. Acquaviva, Esq., Vice President, State Government Affairs, New Jersey, Pennsylvania, and Delaware.



Education is a key component. The program provides members with educational materials and newsletters with condition-specific information. These consumer empowering materials are based upon evidence based medical guidelines and are written at a fourth grade reading level in English and Spanish. Finally, in an effort to constantly improve, the health plan regularly surveys members to assess understanding and usefulness of educational materials.

UnitedHealthcare of Pennsylvania does not have a Diabetes Prevention Program within its Community and State lines.

### **Commercial Business**

UHP's Diabetes Prevention Program seeks to slow and even prevent the onset of diabetes through weight loss and lifestyle management by, among other things, implementing evidence-based strategies and education and utilizing regular communication on patient achievement to physicians. To ensure that as many persons with prediabetes as possible are enrolled, testing is integrated into existing wellness/biometric events, and on-the-spot, in-person enrollment is offered.

UHP also offers an evidence based Diabetes Control Program designed to help people already diagnosed with diabetes to take charge of their health and connect them with specialty trained pharmacists in their community, who offer private, personal support to help with medication, nutrition, blood glucose monitoring, goal setting, and self-management education. Through personalized, local support, the Diabetes Control program makes management easier by allowing for private consultations with local, trained diabetic educator pharmacists and holistic support, encompassing biometrics and medication.



## RECOMMENDATIONS

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As this report has demonstrated, diabetes represents a severe threat to public health in this Commonwealth and should be met with a vigorous response. The following recommendations provide a menu of possible strategies that will enable public health authorities to help prevent Pennsylvanians from developing the disease and assist those who suffer from diabetes to better manage it and its complications.

### General Assembly Responses

#### *Mandatory coverages*

The General Assembly should mandate coverage for diabetes prevention programs for persons diagnosed with prediabetes in state-regulated insurance plans.

It is true that mandatory health insurance coverage can be viewed as a kind of tax because it imposes costs on some people for the benefit of others through the operation of law. Mandatory coverage for degenerative diseases like diabetes raises costs for young people to benefit older people. (Of course, other programs, most obviously the public school system, tax older persons to benefit the young.) Given the massive costs, both monetary and otherwise, of preventable diabetes on Pennsylvania citizens, it seems likely that the benefits of such a mandate will outweigh the costs.

The current mandates relating to diabetes apply generally to health insurance policies issued in Pennsylvania and appear in § 634(a) of the Insurance Company Law (ICL) (40 P.S. § 764e(a)). This section mandates coverage for “equipment, supplies and outpatient self-management training and education, including medical nutrition therapy for the treatment of insulin-dependent diabetes, insulin-using diabetes, gestational diabetes and noninsulin-using diabetes if prescribed by a health care professional legally authorized to prescribe such items under law.” Note that this provision does not mandate coverage for prevention programs even for persons with prediabetes.

Mandatory coverages have been enacted for other medical conditions besides diabetes:<sup>109</sup>

Cancer Therapy: ICL § 631 (40 P.S. § 764b)

Mammographic Examinations: ICL § 632 (40 P.S. § 764c)

Mastectomy and Breast Cancer Reconstruction: ICL § 633 (40 P.S. § 764d)

Hearing aids: ICL § 635 (40 P.S. § 764f). This applies only to Medicare and Medicaid policies.

Serious Mental Illness: ICL § 635.1 (40 P.S. § 764g)

Autism Spectrum Disorders: ICL § 635.2 (40 P.S. § 764h)

Colorectal Cancer Screening: ICL § 635.3 (40 P.S. § 764i)

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<sup>109</sup> Consult the cited provisions for exclusions and limitations.

*Advisory Committee (diabetes or chronic disease)*

The General Assembly should consider establishing an ongoing statewide advisory committee on diabetes specifically or as one of the major chronic diseases. A number of Commonwealth advisory committees presently exist with jurisdiction over health and safety topics, including the following:

Renal Disease Advisory Committee (Act of June 23, 1970 (P.L.419, No.140); 35 P.S. § 6204)

Cancer Control (Pennsylvania Cancer Control, Prevention and Research Act, Act 224 of 1980 (P.L.1241); 35 P.S. § 5631 et seq.) (This Act expires June 30, 2016.)

Tobacco Prevention and Cessation (Tobacco Settlement Act, Act 77 of 2001 (P.L.755), § 705); 35 P.S. § 5701.705)

Medical Care and Treatment R&D (Tobacco Settlement Act, § 902; 35 P.S. § 5701.902)

Advisory committees typically consist of members appointed by the Governor and the General Assembly. The President Pro Tem of the Senate, the Minority Leader of the Senate, the Speaker of the House of Representatives and the Minority Leader of the House each get an equal number of appointments. The legislation may designate certain groups that can forward to appointing authorities the candidates for membership. The members of the committee work without pay, but receive reimbursement for expenses.

Committees of this kind may facilitate expert advice on a continuing basis and may utilize executive staff to help develop recommendations. They can call upon departmental staff to gather information that will help refine and evaluate recommendations. This may be especially useful in gathering cost data that describe healthcare expenses and program expenditures.

*Action on Current Legislation*

1. The General Assembly should pass 2015 House Bill 1367 (Pr.'s No. 2004), which would provide for a personal income tax check-off to provide contributions for the State Food Purchase Program to help ensure that healthful foods are available to low income Pennsylvanians.
2. The General Assembly should pass 2015 House Bill 1366 (Pr.'s No. 1911), which would establish the Childhood Wellness Council.
3. The General Assembly should pass 2015 House Bill 1365 (Pr.'s No. 1910), which would allow for the opportunity for charter, cyber charter, and home school programs to partner with non-profit organizations to provide physical education and activities for their students.
4. The General Assembly should pass of 2015 Senate Bill 704 (Pr.'s No. 695) which would mandate insurance coverage for the treatment of pain associated with complications of diabetes, including diabetic peripheral neuropathy and other comorbid conditions.

## Commonwealth Agency Responses

### *Diabetes Screening*

About 325,000 Pennsylvanians with diabetes have not been diagnosed with the disease,<sup>110</sup> and ensuring that these people receive a diagnosis so that they can be made aware of their need for medical care is surely among the most important public health goals. Criteria for appropriateness of testing for prediabetes and diabetes have been established.<sup>111</sup> Accordingly, PADOH should place a high priority on ensuring that Pennsylvania healthcare providers are following the relevant protocols and should also do everything feasible to alert the broad public to the need to get screened and tested for diabetes and prediabetes.

### *Promoting Healthy Lifestyle*

1. PADOH should develop an ongoing social marketing campaign to encourage healthy lifestyles and inform Pennsylvania residents of healthy lifestyle opportunities and activities that are provided by state and local agencies.
2. Given the close connection between diabetes and obesity, PADOH and PDE should collaborate on a strategy to educate public school pupils on the importance of weight control and to increase emphasis on physical education.
3. PADOH should coordinate with other agencies, particularly the Department of Education and the Department of Conservation and Natural Resources, to encourage active lifestyles and promote activities and programs that currently exist for Pennsylvania residents.
4. The Commonwealth could take the lead in promoting active lifestyles by providing bicycle racks at state office buildings and sponsoring employee walking and exercise programs.
5. PADOH should work with food vendors to ensure that healthful food choices that meet its recommendations are available in state office buildings' snack bars and cafeterias.
6. PADOH and the Department of Agriculture should encourage Pennsylvania food producers to use food labels that show the U.S. FDA's recommended daily allowance for sugars in addition to the amount of sugars present in the food.
7. PDE should require school districts to limit the availability of sweetened foods and beverages from subsidized school meal menus, vending machines, and concessions.
8. The Commonwealth should provide subsidies for the purchase of healthful foods for school meals and recipients of the Supplemental Nutrition Assistance Program (SNAP). Currently, recipients of SNAP are permitted to use their benefits for items such as soft

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<sup>110</sup> ADA, "The Burden of Diabetes in Pennsylvania, accessed January 29, 2016, <http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/pennsylvania.pdf>.

<sup>111</sup> ADA, "Diabetes Care, 2. Classification and Diagnosis of Diabetes," accessed January 21, 2016, [http://care.diabetesjournals.org/content/38/Supplement\\_1/S8.full](http://care.diabetesjournals.org/content/38/Supplement_1/S8.full).

drinks, candy, cookies, snack crackers, ice cream, and bakery cakes. This policy should be revised to prohibit the use of benefits for food option recognized as unhealthful by diet and nutritionists.

9. PEBTF should continue to support beneficiary wellness programs that encourage employees to undergo wellness checks in exchange for reductions in their healthcare contribution rates.
10. The Office of Administration should encourage state agency wellness policies and programs for Commonwealth employees.

#### *Other Recommendations*

11. PADOH should ensure that its diabetes prevention and control programs remain significant components of its public health efforts in light of the CDC's Four Domains of Chronic Disease Prevention paradigm. Although the Four Domains approach is crucial to the prevention and management of many chronic diseases including diabetes, diabetes prevention and control programs must retain a fundamental emphasis.
12. PADOH should move forward with diabetes prevention and control initiatives presented elsewhere in this report.
13. PADOH and the PA eHealth Partnership Authority should utilize population diabetes information to locate concentrations of diabetes incidence so that resources can be directed to locations most in need.
14. Reports by PDHS on diabetes and chronic disease prevention and control services provided to medical assistance populations should be shared with the General Assembly, particularly the Diabetes Caucus.
15. The General Assembly should encourage agencies to reissue public reports with more current information to the extent feasible. Public reports on diabetes provide useful information to the public in a reasonably comprehensive and accessible form. Some reports that were issued previously are now somewhat dated.<sup>112</sup>
16. PEBTF should develop a reporting mechanism that tracks the incidence, expenses, and services for beneficiaries with diabetes and other chronic diseases and make these reports available to the General Assembly, particularly the Diabetes Caucus.

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<sup>112</sup> Examples include: PADOH, "The Juvenile Diabetes Cure Research Tax Check-Off Program Annual Report;" PADOH, "The Pennsylvania Diabetes Action Plan" (May 2007); DOH/DPCP "Diabetes in School Children: Recommendations & Resource Guide for School Personnel" (2009); PADOH, "The Burden of Diabetes in Pennsylvania" (2010); PHC4, "Chronic Health Conditions in Pennsylvania: Diabetes, Asthma, COPD, Heart Failure" (June 2010); and PHC4, "Diabetes Hospitalization Report" (November 2011).

## BIBLIOGRAPHY

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Albright, Ann L. and Edward W. Gregg. "Preventing Type 2 Diabetes in Communities across the U.S.: The National Diabetes Prevention Program." *American Journal of Preventive Medicine*. 2013. 44(4S4):S346 –S351.

American Diabetes Association. "The Burden of Diabetes in Pennsylvania."  
<http://main.diabetes.org/dorg/PDFs/Advocacy/burden-of-diabetes/pennsylvania.pdf>.

\_\_\_\_\_. "Diabetes Care, 2. Classification and Diagnosis of Diabetes." Accessed January 21, 2016.  
[http://care.diabetesjournals.org/content/38/Supplement\\_1/S8.full](http://care.diabetesjournals.org/content/38/Supplement_1/S8.full).

\_\_\_\_\_. "Diagnosing Diabetes and Learning about Prediabetes." Last edited, June 9, 2015.  
<http://www.diabetes.org/diabetes-basics/diagnosis/>.

\_\_\_\_\_. "Facts about Type 2." Last edited October 27, 2015. <http://www.diabetes.org/diabetes-basics/type-2/facts-about-type-2.html>.

\_\_\_\_\_. "Gestational Diabetes. Accessed January 6, 2016. <http://www.diabetes.org/diabetes-basics/gestational/>.

\_\_\_\_\_. "Type 1 Diabetes." Accessed January 6, 2016. <http://www.diabetes.org/diabetes-basics/type-1/?loc=db-slabnav>.

Centers for Disease Control and Prevention. (CDC). "National Diabetes Surveillance System—All States, 2013." <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>.

\_\_\_\_\_. "Prediabetes: Am I at Risk?" National Diabetes Prevention Program. Last updated January 14, 2016. <http://www.cdc.gov/diabetes/prevention/prediabetes.htm>.

Diabetes Prevention Program Research Group. "Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin." *New England Journal of Medicine* 346: 393-403. February 7, 2002. <http://www.nejm.org/doi/full/10.1056/NEJMoa012512>.

Healthline. "The Effects of Diabetes on the Body." Accessed September 3, 2015.  
<http://www.healthline.com/health/diabetes/effects-on-body>.

Joint State Government Commission. "Childhood Obesity: Report of the Advisory Committee on Childhood Obesity" (June 2014).  
[http://jsg.legis.state.pa.us/publications.cfm?JSPU\\_PUBLN\\_ID=371](http://jsg.legis.state.pa.us/publications.cfm?JSPU_PUBLN_ID=371).

\_\_\_\_\_. See Joint State Government Commission. "Diabetes Programs in Pennsylvania" (March 2015). <http://jsg.legis.state.pa.us/resources/documents/ftp/publications/2015-409-Diabetes%20Programs%20in%20PA%20March%2016%202015.pdf>.

- Mayo Clinic. "Diabetes Symptoms." Accessed January 6, 2016.  
<http://www.mayoclinic.org/diseases-conditions/diabetes/basics/symptoms/CON-20033091>.
- National Center for Chronic Disease Control and Health Promotion (CDC). Division of Diabetes Translation. "National Diabetes Statistics Report, 2014."  
<http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>.
- \_\_\_\_\_. Office of the Director. "The Four Domains of Chronic Disease Prevention: Working toward Healthy People in Healthy Communities."  
<http://www.cdc.gov/chronicdisease/pdf/four-domains-factsheet-2015.pdf>.
- National Institute of Diabetes and Digestive and Kidney Diseases, "Better Health and You: Tips for Adults." Accessed September 9, 2015. <http://www.niddk.nih.gov/health-information/health-topics/weight-control/better-health/Pages/better-health-and-you-tips-for-adults.aspx>.
- Rich, Paul A., Charles F. Schaefer, Christopher G. Parkin et al. "Using a Quantitative Measure of Diabetes Risk in Clinical Practice to Target and Maximize Diabetes Prevention Interventions." American Diabetes Association. *Clinical Diabetes*, April 2013, vol. 31, no. 2, 82-89. DOI: 10.2337, <http://clinical.diabetesjournals.org/content/31/2/82.full>.
- Pennsylvania Department of Conservation and Natural Resources (DCNR). "2014-2019 Statewide Outdoor Recreation Plan." n.d. Accessed January 21, 2016. <http://www.paoutdoorrecplan.com/>, (accessed January 21, 2016).
- Pennsylvania Department of Health (PADOH). "The Burden of Diabetes in Pennsylvania 2010."  
[http://www.portal.state.pa.us/portal/server.pt/community/diabetes/14160/diabetes\\_publications\\_\\_\\_documents/557820](http://www.portal.state.pa.us/portal/server.pt/community/diabetes/14160/diabetes_publications___documents/557820).
- \_\_\_\_\_. Bureau of Health Promotion and Risk Reduction. "Chronic Disease in Pennsylvania 2011." <http://www.health.state.pa.us/pdf/ChronicDiseaseBurdenReport.pdf>.
- \_\_\_\_\_. "Juvenile Diabetes Cure Research Tax Check-Off Program Annual Report Jan. 1–Dec. 31, 2013" (2014).  
[http://www.portal.state.pa.us/portal/server.pt/document/1426417/2013\\_juvenile\\_diabetes\\_cure\\_research\\_tax\\_check-off\\_program\\_annual\\_report\\_pdf](http://www.portal.state.pa.us/portal/server.pt/document/1426417/2013_juvenile_diabetes_cure_research_tax_check-off_program_annual_report_pdf).
- Pennsylvania Health Care Cost Containment Council (PHC4). "Chronic Health Conditions in Pennsylvania" (June 2010).  
<http://www.phc4.org/reports/chroniccare/10/docs/chroniccare2010report.pdf>.
- \_\_\_\_\_. "Diabetes Hospitalization Report (2009 Data)" (November 2011).  
<http://www.phc4.org/reports/diabetes/09/docs/diabetes2009report.pdf>.
- \_\_\_\_\_. "Potentially Preventable Hospitalizations in Pennsylvania" (June 2012).  
<http://www.phc4.org/reports/preventable/10/docs/preventable2010report.pdf>.



- \_\_\_\_\_. “Readmissions for the Same Condition—January 2013—August 2014 Data.” (June 2015).  
<http://www.phc4.org/reports/readmissions/samecondition/14/docs/full-report.pdf>.
- Pennsylvania State Data Center. “State and County Population Projections 2010 to 2040.” March 27, 2014. [https://pasdc.hbg.psu.edu/sdc/pasdc\\_files/researchbriefs/Projections\\_RB.pdf](https://pasdc.hbg.psu.edu/sdc/pasdc_files/researchbriefs/Projections_RB.pdf).
- Tabak, Adam G., Christian Herder, and Wolfgang Rathmann, et al. “Prediabetes: A High-Risk State for Developing Diabetes.” *Lancet*, June 16, 2012, vol. 379, no. 833, 2279-2290. DOI: 10.1016/S0140-6736(12)60283-9.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3891203/>.
- Trust for America’s Health and Robert Wood Johnson Foundation. “The State of Obesity: Pennsylvania,” (2015). <http://stateofobesity.org/states/pa/>.
- U.S. Department of Health and Human Services and U.S. Department of Agriculture. “*2015-2020 Dietary Guidelines for Americans*” 8<sup>th</sup> ed. (December 2015). Available at <http://health.gov/dietaryguidelines/2015/>.
- WebMD. “Understanding Diabetes—Diagnosis and Treatment.” Accessed September 10, 2015. <http://www.webmd.com/diabetes/understanding-diabetes-detection-treatment>.



THE GENERAL ASSEMBLY OF PENNSYLVANIA

HOUSE RESOLUTION

No. 936 Session of 2014

INTRODUCED BY OBERLANDER, LONGIETTI, BAKER, BOBACK, V. BROWN, CALTAGIRONE, CAUSER, COHEN, D. COSTA, DONATUCCI, FLECK, GIBBONS, GINGRICH, GODSHALL, GRELL, GROVE, HARHART, HEFFLEY, KAUFFMAN, KILLION, KIRKLAND, KOTIK, KULA, LUCAS, MAJOR, MENTZER, MILLARD, MURT, MUSTIO, O'BRIEN, READSHAW, SONNEY, SWANGER, TALLMAN, THOMAS, TOBASH, WHITE, YOUNGBLOOD, SCHLEGEL CULVER, JAMES, BENNINGHOFF, BRIGGS, PICKETT, WATSON, McCARTER, PYLE AND QUINN, JULY 1, 2014

AS REPORTED FROM COMMITTEE ON HEALTH, HOUSE OF REPRESENTATIVES, AS AMENDED, SEPTEMBER 17, 2014

A RESOLUTION

1 Directing the Joint State Government Commission, in
2 collaboration with certain other State departments and
3 agencies, to develop a report on diabetes and to issue the
4 report to the House of Representatives.

5 WHEREAS, More than 990,000 adults in this Commonwealth have
6 been diagnosed with diabetes; and

7 WHEREAS, An estimated 517,000 Pennsylvanians are undiagnosed;
8 and

9 WHEREAS, An estimated 3.27 million Pennsylvanians are at risk
10 of developing diabetes; and

11 WHEREAS, Diabetes and its complications are the seventh
12 leading cause of death in this Commonwealth; and

13 WHEREAS, Diabetes will cost Pennsylvanians an estimated \$1.7 <--
14 \$14.7 billion in 2015 and an estimated \$18.4 billion by the year <--
15 2025; and

1       WHEREAS, Statistics show that with appropriate management and  
2 early identification, costs related to diabetes can be  
3 significantly reduced; therefore be it

4       RESOLVED, That the House of Representatives direct the Joint  
5 State Government Commission to submit a report on diabetes that  
6 identifies goals and benchmarks and includes plans to reduce the  
7 incidence of diabetes, improve diabetes care and control  
8 complications associated with diabetes; and be it further

9       RESOLVED, That the Joint State Government Commission develop  
10 the report on diabetes in collaboration with all of the  
11 following:

- 12           (1) The Department of Health.
- 13           (2) The Department of Public Welfare.
- 14           (3) The Department of Education.
- 15           (4) The State Employees' Retirement System.
- 16           (5) The Health Care Containment Council.
- 17           (6) Any additional State departments or agencies the  
18           commission deems appropriate to develop, research and prepare  
19           the report;

20 and be it further

21       RESOLVED, That the Joint State Government Commission assess  
22 the financial impact and reach diabetes has on the residents of  
23 this Commonwealth and the State departments and agencies  
24 collaborating on the report, and that the assessment include all  
25 of the following:

- 26           (1) The number of individuals with diabetes impacted or  
27           covered by the State department or agency.
- 28           (2) The number of individuals with diabetes and family  
29           members impacted by prevention and diabetes control programs  
30           implemented by the State department or agency.

1           (3) The financial toll or impact diabetes and its  
2 complications placed on State department or agency programs.

3           (4) The financial toll or impact diabetes and its  
4 complications placed on the State department or agency  
5 programs in comparison to other chronic diseases and  
6 conditions;

7 and be it further

8       RESOLVED, That the Joint State Government Commission conduct  
9 an assessment of the benefits of implemented programs and  
10 activities aimed at controlling diabetes and preventing the  
11 disease, and that the assessment include the amount and source  
12 for any funding from the Federal Government and the General  
13 Assembly for programs and activities aimed at reaching those  
14 with diabetes; and be it further

15       RESOLVED, That the Joint State Government Commission provide  
16 a description of the level of coordination existing between  
17 State departments and agencies on activities, programmatic  
18 activities and messaging on managing, treating or preventing all  
19 forms of diabetes and its complications; and be it further

20       RESOLVED, That the Joint State Government Commission provide  
21 detailed plans and recommendations for the control and  
22 prevention of diabetes for consideration by the General  
23 Assembly, and that the plans and recommendations do all of the  
24 following:

25           (1) Identify proposed action steps to reduce the impact  
26 of diabetes, pre-diabetes and related diabetes complications.

27           (2) Identify expected outcomes of the action steps  
28 proposed in the following biennium.

29           (3) Establish benchmarks for controlling and preventing  
30 relevant forms of diabetes; and be it further

1       RESOLVED, That the Joint State Government Commission develop  
2 a detailed budget blueprint identifying needs, costs and  
3 resources required to implement the plans and recommendations of  
4 each department or agency, and that the blueprint include a  
5 budget range for all options presented in the recommendations  
6 identified by each department or agency for consideration by the  
7 General Assembly; and be it further  
8       RESOLVED, That the Joint State Government Commission provide  
9 the initial report on the estimated number of individuals with  
10 diabetes, pre-diabetes or related diabetes ~~within~~ WHO ARE SERVED <--  
11 BY each department or agency and any additional information the  
12 commission deems appropriate to the General Assembly by March 1,  
13 2015; and be it further  
14       RESOLVED, That the Joint State Government Commission submit a  
15 ~~final~~ COMPREHENSIVE report on the items listed in this       <--  
16 resolution to the Diabetes Caucus of the House of  
17 Representatives and the Human Services Committee AND THE HEALTH <--  
18 COMMITTEE of the House of Representatives by September 15, 2015,  
19 and by September 15 of each odd-numbered year thereafter  
20 following the release of the initial report.