JOINT STATE GOVERNMENT COMMISSION

General Assembly of the Commonwealth of Pennsylvania

DIABETES IN PENNSYLVANIA:

Prevention and Maintenance Programs

Sixth Biennial Report

September 2023

Serving the General Assembly of the Commonwealth of Pennsylvania Since 1937

REPORT

House Resolution 936 of 2014

Diabetes In Pennsylvania:
Prevention and Maintenance Programs

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The report is also available at http://jsg.legis.state.pa.us

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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.[1]

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.[2] Although an advisory committee member may represent a particular department, agency, association, or group, such representation does not necessarily reflect the endorsement of the department, agency, association, or group of all the findings and recommendations contained in a study report.

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[1] Act of July 1, 1937 (P.L.2460, No.459); 46 P.S. §§ 65–69.

[2] Consensus does not necessarily reflect unanimity among the advisory committee members on each individual policy or legislative recommendation. At a minimum, it reflects the views of a substantial majority of the advisory committee, gained after lengthy review and discussion.

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 receives the financial benefit of such volunteerism, along with their shared 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 to construe or apply its provisions.[3]

Since its inception, the Commission has published over 450 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.

[3] 1 Pa.C.S. § 1939.

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September 2023

To the Members of the General Assembly of Pennsylvania:

This is the sixth in a series of reports as directed by 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 diabetes response.

This report contains the latest available data about diabetes as a public health problem in Pennsylvania in the national context and describes the relevant programs run by the Pennsylvania departments and agencies charged with implementing public health policy and with assisting people with diabetes. Three significant developments in type 1 diabetes care are discussed in the following pages. First, doctors and advocacy groups now recommend, based on medical evidence, that screening be expanded to include people without a family history of type 1 diabetes. Second, the FDA recently approved use of the drug Tzield (teplizumab) for people 8 years of age and older. Third, the FDA has approved a new insulin pump for people ages 6 and older.

Thirteen recommendations developed by Commission staff, in collaboration with stakeholders and care providers, are included in this report. These include three for the General Assembly's consideration addressing mandates in health insurance coverages. The remaining ten recommendations focus on how providers, healthcare systems, and insurers can enhance patient-centered care through expanded screening, effective education, and improved lifestyle supports.

The full report is available at http://jsg.legis.state.pa.us

Respectfully submitted,

Glenn J. Pasewicz
Executive Director

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INTRODUCTION

This is the sixth in a series of reports by the Joint State Government Commission (JSGC) in response to the mandate of 2014 House Resolution 936, which provides for an ongoing study of the public health problem posed by diabetes in Pennsylvania. The resolution directs the JSGC, in collaboration with several other state departments and agencies, to "assess the financial impact and reach diabetes has on the residents of this Commonwealth and the State departments and agencies collaborating on the report"; to conduct "an assessment of the benefits of implemented programs and activities aimed at controlling diabetes and preventing the disease"; and to provide recommendations "for the control and prevention of diabetes for consideration by the General Assembly," with the goal of reducing the impact of diabetes, pre-diabetes, and diabetes complications.[4]

Prevalence and Incidence of Diabetes and Its Economic Burden in Pennsylvania and Nationwide

The Centers for Disease Control and Prevention (CDC) continually tracks the prevalence of diabetes and other chronic diseases throughout the United States. CDC's Division of Diabetes Translation (DDT) focuses on preventing type 2 diabetes and reducing complications and disability associated with diabetes; it also strives to reduce diabetes-related disparities, which are differences in health across geographic, racial, ethnic, and socioeconomic groups.

Pennsylvania Diabetes Profile, as outlined by the CDC, includes the following key metrics:

- Total Diabetes Cases (Prevalence): 1.2 million
- New Diabetes Cases (Incidence): 68.1 thousand
- Per Year in Direct Medical Costs Attributed to Diabetes: $9.3 billion
- Per Year in Indirect Costs Attributed to Diabetes: $3.5 billion
- Fiscal Year 2022 Funding: $1.2 million.[5]

Pennsylvania has a Diabetes Action Plan. The State Health Improvement Plan (SHIP) for 2023-2028 was developed by the Pennsylvania Department of Health (DOH) in collaboration with the Healthy Pennsylvania Partnership (HPP). This multi-year strategic plan focuses on health equity, chronic disease prevention, and whole person care. Statewide data indicate that chronic

[4] HR 936, P.N. 4098 (2014).

[5] Centers for Disease, Control, and Prevention. *Pennsylvania Diabetes Profile*. Atlanta, GA: Centers for Disease, Control, and Prevention, U.S. Department of Health and Human Services, 2022, https://www.cdc.gov/diabetes/programs/stateandlocal/state-diabetes-profiles/pennsylvania.html.print, accessed April 24, 2023.

diseases remain a priority for most communities in the Commonwealth, and, accordingly, this issue has been identified as a priority in the State Health Improvement Plan. SHIP contains specific targets for decreasing diabetes-related hospitalization and for reducing adult and childhood obesity in Pennsylvania.[6]

The Centers for Disease Control and Prevention periodically publishes the *National Diabetes Statistics Report*, which provides information on the prevalence and incidence of diabetes and prediabetes as well as risk factors for complications, acute and long-term complications, death, and costs. These data are intended to focus efforts on prevention and control diabetes across the United States. The 2022 edition of the *National Diabetes Statistics Report* contains the following crude estimates for 2019 among the U.S. population overall:

Diabetes

- Total: 37.3 million people have diabetes (11.3% of the U.S. population)
- Diagnosed: 28.7 million people, including 28.5 million adults
- Undiagnosed: 8.5 million people (23.0% of adults are undiagnosed)

Prediabetes

- Total: 96 million people aged 18 or older have prediabetes (38.0% of the adult U.S. population)
- 65 years or older: 26.4 million people aged 65 years or older (48.8%) have prediabetes[7]

While the percentage of people with diabetes in the total U.S. population in 2019 is estimated to be 11.3 percent (37.3 million people), the percentage is even higher if calculated for the adult U.S. population only (people aged 18 years or older): 14.7 percent (37.1 million people). The percentage of adults with diabetes increased with age, reaching 29.2 percent among those aged 65 years or older.[8]

Prevalence of diabetes varied significantly in various race/ethnic groups, with the highest diabetes percentage in the Black/non-Hispanic group (17.4 percent), followed by the Asian/non-Hispanic group (16.7 percent), the Hispanic group (15.5 percent), and the White group/non-Hispanic group (13.6 percent). It is worth noting that differences in undiagnosed diabetes percentages were even more pronounced: from the smallest percentage of 2.7 percent in the White/non-Hispanic group to 4.4 percent in the Hispanic group, to 4.7 percent in the Black/non-Hispanic group, and the highest percentage – 5.4 percent – in the Asian/non-Hispanic group.[9] The

[6] Pennsylvania Department of Health. *State Health Improvement Plan 2023-2028,* https://www.health.pa.gov/topics/Documents/SHIP/SHIP_2023-2028.pdf.
[7] Centers for Disease, Control, and Prevention. *National Diabetes Statistics Report 2022: Estimates of Diabetes and Its Burden in the United States*. Atlanta, GA: Centers for Disease, Control, and Prevention, U.S. Department of Health and Human Services, 2022, https://www.cdc.gov/diabetes/data/statistics-report/index.html, accessed April 24, 2023.
[8] Centers for Disease, Control, and Prevention. *National Diabetes Statistics Report 2022: Prevalence of Both Diagnosed and Undiagnosed Diabetes*. Atlanta, GA: Centers for Disease, Control, and Prevention, U.S. Department of Health and Human Services, 2022, https://www.cdc.gov/diabetes/data/statistics-report/diagnosed-undiagnosed-diabetes.html, accessed April 24, 2023.
[9] Ibid.

prevalence of undiagnosed diabetes is clinically important as when diabetes remains untreated for a longer period of time, it tends to become more severe and create complications earlier.

The analysis of trends in prevalence of diabetes in the United States demonstrates that during 2001-2020, the age-adjusted prevalence of total diabetes significantly increased among adults aged 18 or older. Prevalence estimates for total diabetes were 10.3 percent in 2001-2004 and 13.2 percent in 2017-2020.[10]

Incidence of newly diagnosed diabetes among the U.S. adults aged 18 years or older is reflected in the following crude estimates for 2019, with no significant variance by race/ethnicity:

- 1.4 million new cases of diabetes – or 5.9 per 1,000 persons – were diagnosed
- Compared to adults aged 18 to 44 years, incidence rates of diagnosed diabetes were higher among adults aged 45 to 64 years (10.1 per 1,000 persons) and those aged 65 years and older (5.8 per 1,000 persons)[11]

The analysis of trends in incidence of diabetes among adults shows that it was similar in 2000 (6.2 per 1,000 adults) and 2019 (5.7 per 1,000 adults). A positive and significant decreasing trend in incidence was detected after 2008 (8.4 per 1,000 adults) through 2019.[12]

Trends of incidence of diabetes among children and adolescents are concerning as data show continuous increase in both diabetes type 1 and type 2.

Type 1

Among the U.S. children and adolescents aged less than 20,

- For the period 2002-2015, overall incidence of type 1 diabetes significantly increased.
- During 2002-2010, Hispanic children and adolescents had the largest significant increases in incidence of type 1 diabetes.
- During 2011-2015, non-Hispanic Asian and Pacific Islander children and adolescents had the largest significant increases in incidence of type 1 diabetes.

Type 2

Among the U.S. children and adolescents aged 10 to 19 years,

- For the entire period 2002-2015, overall incidence of type 2 diabetes significantly increased.

[10] Ibid.
[11] Centers for Disease, Control, and Prevention. *National Diabetes Statistics Report 2022: Incidence of Newly Diagnosed Diabetes*. Atlanta, GA: Centers for Disease, Control, and Prevention, U.S. Department of Health and Human Services, 2022, https://www.cdc.gov/diabetes/data/statistics-report/newly-diagnosed-diabetes.html, accessed April 24, 2023.
[12] Ibid.

- During the 2002-2010 and 2011-2015 periods, changes in incidence of type 2 diabetes were consistent across race-ethnic groups. Specifically, incidence of type 2 diabetes remained stable among non-Hispanic Whites and significantly increased in all others, especially non-Hispanic Blacks.[13]

It has been observed that rates of some chronic conditions worsened since 2019:

> Nationally, between 2020 and 2021, the prevalence of multiple chronic conditions – the percentage of adults who had three or more of the following chronic health conditions: arthritis, asthma, chronic kidney disease, chronic obstructive pulmonary disease, cardiovascular disease, cancer (excluding skin), depression and diabetes – increased 5%, from 9.1% to 9.6%.[14]

Public health experts attribute this rise to several factors. They speculate that "because many Americans delayed receiving care during the pandemic, it is possible that some cases of chronic conditions went undiagnosed as screenings for diseases like cancer were delayed or foregone."[15] Then, Americans caught up on their care and could have received new diagnoses. In addition, it became clear that COVID-19 infection increased the risk of some of these diseases, including diabetes, which means that the pandemic itself could have led to new cases.[16]

The COVID pandemic may continue to have a deleterious impact on diabetes incidence trends in the near future. By now, it is well-known that infection with SARS-CoV-2 can not only cause acute, and often severe, disease, but also lead to long-term consequences. It has been shown that it can trigger or accelerate debilitating and costly chronic diseases, including diabetes. Comparatively early in the course of the COVID pandemic, clinicians and researchers discovered multi-faceted two-way interactions between COVID-19 and diabetes: "the two-way interaction between COVID-19 and diabetes mellitus sets up a vicious cycle wherein COVID-19 leads to worsening of dysglycemia and diabetes mellitus, in turn, exacerbates the severity of COVID-19."[17] In addition to the increased severity of COVID-19 in patients with diabetes, it has been observed that exposure to COVID-19 can precipitate diabetes onset.

Presently, there are multiple international reports of increased occurrence of diabetes following SARS-CoV-2 infection. Summarizing the findings of numerous investigations, a recent commentary in *JAMA* states: "A meta-analysis of reports from the US, Norway, the UK, Germany, and multisite consortia found an overall 66% increase in the incidence of new-onset diabetes following SARS-CoV-2 infection. Another review showed that 12 of 14 population-based studies found significantly increased incidence of diabetes following COVID-19, with excess cases ranging from 11% to 276% above control."[18] An extensive cohort study conducted in British

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[13] Ibid.
[14] The United Health Foundation, the American Public Health Association. *America's Health Rankings: Annual Report 2022*, https://assets.americashealthrankings.org/app/uploads/ahr_2022annualreport_executivebrief.pdf.
[15] Ibid.
[16] Ibid.
[17] Pal, Rimesh and Sanjay K. Bhadada. "COVID-19 and Diabetes Mellitus: An Unholy Interaction of Two Pandemics." *Diabetes & Metabolic Syndrome*. July-August 2020. Vol. 14. No. 4, doi: 10.1016/j.dsx.2020.04.049.
[18] Davis, Pamela B. "COVID-19 and Incident Diabetes – Recovery Is Not So Sweet After All." *JAMA Network Open*. April 18, 2023;6(4): e238866,, doi: 10.1001/jamanetworkopen.2023.8872.

Columbia, Canada from January 1, 2020, to December 31, 2021, using a surveillance platform that integrates COVID-19 data with population-based registries and administrative data sets, found that "SARS-VoV-2 infection was associated with a higher risk of incident diabetes overall and among males and that severe disease was associated with a higher risk of diabetes among males and females. These results suggest that infection with SARS-CoV-2 may have contributed to a 3% to 5% excess burden of diabetes, which may be associated with a substantial number of diabetes cases with bearing on health care needs for the management of diabetes and its complications."[19] Based on their findings, the authors conclude that health care providers need to be prepared for the increase in incidence of diabetes caused by COVID: "Our study highlights the importance of health agencies and clinicians being aware of the potential long-term consequences of COVID-19 and monitoring people after COVID-19 infection for new-onset diabetes for timely diagnosis and treatment."[20] Commenting on this Canadian study, a U.S. public health expert observes: "If this proportion is similar in the US, it will represent a substantial financial burden. In 2017, the cost of diabetes care was estimated at $237 billion, not including lost productivity, so a 5% increase would cost an additional $12 billion per year. Now, 6 years later, the cost is probably much greater. In addition, Naveen et al studied only adults, but US children also had an increased incidence of diabetes following COVID-19, so the length of time that these increased costs will accumulate will be even greater." [21]

Healthy People 2030 states that one of its main goals is to "reduce the burden of diabetes and improve quality of life for all people who have, or at risk for, diabetes."[22]

Prevalence of Obesity in Pennsylvania and New Developments in Treating Obesity in Children and Adolescents

One of the major risks factors for diabetes is obesity. Both obesity and diabetes type 2 can "substantially decrease life expectancy, diminish quality of life and increase healthcare costs."[23] For individuals of all ages, the risk of type 2 diabetes rises with increasing body weight. Citing the data from the National Institutes of Health, National Institute of Diabetes, Digestive and Kidney Diseases, the Obesity Action Coalition cautions that "the prevalence of type 2 diabetes is three to seven times higher in those who are obese than in normal weight adults, and is 20 times more likely in those with a body mass index (BMI) greater than 35 kg/m."[24]

A large-cohort, case-control study of cases from an electronic health records database provided by an integrated health system in the Middle Atlantic region found that "not only is BMI strongly and independently associated with the risk of being diagnosed with T2D, but also that the

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[19] Naveed, Zaeema et al. "Association of COVID-19 Infection With Incident Diabetes." *JAMA Network Open*. 2023;6(4): e238866, doi:10.1001/jamahetworkopen.2023.8866.
[20] Ibid.
[21] Davis, Pamela. Op. cit.
[22] *Healthy People 2030*, https://health.gov/healthypeople/objectives-and-data/browse-objectives/diabetes.
[23] Rogers, Joanne Z. and Christopher D. Still. *Obesity and Type 2 Diabetes*, https://www.obesityaction.org/community/article-library/obesity-and-type-2-diabetes/.
[24] Ibid.

magnitude of this positive association is larger for higher BMI values."[25] Higher BMI values are associated with poorer health outcomes and higher costs. Medical expenditures increase significantly with higher BMI values.

A study specifically designed to estimate the medical care cost savings that can be achieved from a given amount of weight loss by people with different starting values of BMI, with and without diabetes, found that adult obesity significantly raised annual medical care costs; moreover, "the relationship of medical care costs over BMI is J-shaped; costs rise exponentially in the range of class 2 and 3 obesity (BMI $\geq$ 35)."[26] The investigators concluded that "the savings from a given percent reduction in BMI are greater the heavier the obese individual, and are greater for those with diabetes than for those without diabetes."[27]

A recent comprehensive study of the BMI-associated medical expenditures among children and adolescents aged 2 to 19 in the United States produced similar findings. In this cross-sectional study using 2018 data for over 200,000 privately insured individuals across the U.S., annual total and out-of-pocket expenditures were higher for all other BMI categories compared with healthy weight. "Specifically, having underweight or severe obesity was associated with higher total medical expenditures of approximately $671 or $909, respectively, compared with having healthy weight."[28] Differences in total expenditures were highest for those with severe obesity compared with healthy weight. The investigators concluded that "these findings may indicate potential economic value of interventions or treatments aimed at reducing BMI-associated health risks."[29]

An adult is considered obese if he or she has "a body mass index of 30.0 or higher based on reported height and weight."[30] The percentage of Pennsylvania adults with this body mass index has remained basically the same in the past two years. Pennsylvania's rank among other states is 21, with its obesity rate 33.3 percent, which is close to the U.S. average.[31]

Overweight in children is defined as a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex, and childhood obesity is typically defined as a BMI at or above the 95th percentile for children and teens of the same age and sex.[32]

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[25] Ganz, Michael L. et al. "The Association of Body Mass Index with the Risk of Type 2 Diabetes: A Case-Control Study Nested in and Electronic Health Records system in the United States." *Diabetology and Metabolic Syndrome*. 2014. Vol. 6. No. 50, http://www/dmsjournalcom/content/6/1/50.

[26] Cawley, John et al. "Savings in Medical Expenditures Associated with Reductions in Body Mass Index Among US Adults with Obesity, by Diabetes Status." *PharmacoEconomics.* 2015. Vol. 33, doi: 10.1007/s40273-014-0230-2.

[27] Ibid.

[28] Kumar, Ashutosh et al. "Body Mass Index and Associated Medical Expenditures in the US Among Privately Insured Individuals Aged 2 to 19 Years in 2018." *JAMA Pediatrics*. Published online July 3, 2023, doi: https://10.1001/jamapediatrics.2023.2012.

[29] Ibid.

[30] United Health Foundation. *America's Health Rankings Analysis of CDC Behavioral Risk Factor Surveillance System: Annual Report*, 2022, https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/PA, accessed August 1, 2023.

[31] United Health Foundation. *America's Health Rankings Analysis of CDC Behavioral Risk Factor Surveillance System: Annual Report*, 2022, https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/PA, accessed August 1, 2023.

[32] American Academy of Pediatrics. "Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents with Obesity." *Pediatrics*. February 2023. Vol. 151. No. 2, http://publications.aap.org/pediatrics/article-pdf/151/2/e2022060640/1451060/peds_20220640640.pdf.

The percentage of Pennsylvania children ages 10-17 who are overweight or obese for their age based on reported height and weight (two-year estimate) is 30.1 percent, which is slightly below the United States value of 33.5 percent.[33]

Adolescent obesity has been recognized as a critical public health issue affecting 26 percent of American adolescents.[34] According to the data referenced by the American Academy of Pediatrics (AAP), the percentage of the U.S. children and adolescents affected by obesity more than tripled from 5 percent in 1963 to 1965 to 19 percent in 2017 to 2019, and it keeps growing among certain populations. According to a predictive epidemiologic model, also cited by the AAP, "if 2017 obesity trends hold, 57% of children aged 2 to 19 years will have obesity by the time they are 35 years of age, in 2050."[35] As the number of children and adolescents affected by obesity has increased, while the environment has become increasingly obesogenic, and as new treatment options have become available, the AAP issued its clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. This extensive document includes an in-depth analysis of obesity as a complex, multifactorial condition that has become one of the most common pediatric chronic diseases. The AAP guideline describes obesity as a long-lasting condition that has "persistent and negative health effects, attributable morbidity and mortality, and social and economic consequences that can impact a child's quality of life" and recommends that "a life course approach to identification and treatment should begin as early as possible and continue longitudinally through childhood, adolescence, and young adulthood, with transition into adult care."[36]

Preventing and treating obesity may decrease children's risk of diabetes and help adults who are at high risk for diabetes to prevent or delay its development; it may also improve glycemic control in individuals who already have diabetes. Obesity can be treated by lifestyle changes; in certain cases, medications or bariatric surgery may be appropriate.

Recently, a lot of attention has been given to the use of hormone analogues (various versions of semaglutide – brand names Wegovy, Ozempic, and Rybelsus) for weight loss. It was the center of discussion at the ADA annual Scientific Sessions program in June 2023.[37] This group of drugs – glucagon – like polypepside – 1 receptor agonists (GLP–1 RAs) – appears to be potent agents in achieving weight loss. As more drugs of this class appear on the market and their popularity grows, scientists and clinicians continue to study their benefits and risks in order to determine what populations would benefit from them. One of the disputed issues is whether the use of this class of drugs is appropriate for adolescents; the use of GLP–1 RAs for obesity in adolescents was recently approved by the FDA.

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[33] United Health Foundation. *America's Health Rankings Analysis of CDC Behavioral Risk Factor Surveillance System: Annual Report*, 2022, https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/PA, accessed August 1, 2023.

[34] Hu, K. and A.E. Staiano. "Trends in Obesity Prevalence Among Children and Adolescents Aged 2 to 19 years in the US from 2011 to 2020." *JAMA Pediatric*. 2022. Vol. 176. No. 1039, doi: 10.1001/jamapediatrics.2022.2052.

[35] American Academy of Pediatrics. "Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents with Obesity." *Pediatrics*. February 2023. Vol. 151. No. 2, http://publications.aap.org/pediatrics/article-pdf/151/2/e2022060640/1451060/peds_20220640640.pdf.

[36] Ibid.

[37] Abbasi, Jennifer. "New Wight Loss Drugs Make Headlines at Diabetes Meeting." *JAMA*. Published online July 12, 2023, doi:10.1001/jama.2023.12718.

The new AAP guideline advocates for comprehensive obesity treatment. Alongside other interventions, it includes a recommendation that "pediatric health care providers should offer adolescents 12 years and older with obesity (BMI ≥ 95th percentile) weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment."[38]

While clinicians are well-aware of the risks presented by childhood obesity and welcome the AAP's attention to this issue, this specific recommendation was met with mixed response. Some pediatricians were alarmed by the prescriptive nature of this recommendation; they would prefer the guideline used a different phrasing – "may offer pharmacotherapy" instead of "should offer pharmacotherapy" – as they believe medication should be offered to adolescents only after an adequate trial of lifestyle modification.[39] Pediatricians express several concerns about resorting to powerful pharmacotherapy prior to exhausting other interventions. These concerns include lack of precision in the adolescents' BMI as a decisive measure of adiposity and as a predictor of adult obesity, serious consequences of putting teenagers on medications that they would need to continue taking for 70 to 80 years, as well as the issue of labeling: "We do not know the effect on self-identify and self-esteem of telling one-fourth of adolescents that they have a chronic disease and offering long-term medication for treatment of that disease."[40] While many health care professionals who take care of adolescents acknowledge that effective pharmacotherapy is now available for this population and should be used, when appropriate, along with lifestyle modification, they strongly believe that clinicians should offer weight loss medications to teenagers only after an adequate trial of lifestyle treatment and only after "a shared-decision making discussion that includes the risks and benefits of long-term medication, as well as the values and preferences of the adolescent and their parent."[41]

Adolescent mental health professionals are dissatisfied with limited consideration the studies underpinning the AAP guideline give to "the unintended consequences of interventions designed for managing pediatric obesity, including adverse events (AEs), harms, and psychosocial outcomes."[42] They caution that some of the core components of pediatric weight management interventions, such as dietary changes, focus on weight loss and/or maintenance goals, "may plant the seed for individuals with obesity to develop eating disorders."[43] Adolescent mental health experts stress the importance of assessing the balance of intervention benefits versus harms and note that "this balance is particularly relevant for pediatric health care practitioners who seek to engage in shared decision-making with children and their families regarding pediatric obesity management."[44] Suggestions that pediatricians and psychiatrists make to advance the field of

[38] Hampi, Sarah E. et al. "Executive Summary: Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents with Obesity." *Pediatrics*. February 2023. Vol. 151. No.2. e2022060641, doi: 10.1542/peds.2022-06064.
[39] Skolnik, Neil. "American Academy of Pediatrics Obesity Guidelines – A Critical Appraisal." JAMA Pediatrics, August 2023. Vol. 177. No. 8 / jamapediatrics_skolnik_2023_vp_230012_1690995291.35422.pdf.
[40] Ibid.
[41] Ibid.
[42] Alberga, Angela S.; Sacco, Sabrina; and Linda Booij. "Overlooked Outcomes in Pediatric Obesity Management – Unintended Consequences." *JAMA Pediatrics*. Published online August 7, 2023, doi:10.1001/jamapediatrics.2023.2190.
[43] Ibid.
[44] Ibid.

pediatric obesity research focus on the need for "adequate consideration of potentially negative and positive psychosocial outcomes and AEs"; these experts believe that once such consideration is well-documented, "clinical guidelines and practices might need to be modified to reflect the more nuanced and balanced literature on benefits vs harms in addressing pediatric obesity."[45]

Some doctors with expertise in obesity prevention, while recognizing that GLP-1 RAs provide an important option to bariatric surgery to youth experiencing weight-related complications, argue that "the justified excitement surrounding new-generation weight loss drugs should not lead to deprioritizing development of nonpharmacologic interventions aimed at the root causes of the epidemic." They strongly assert that "especially for children, diet and lifestyle must remain at the forefront of obesity prevention and treatment."[46] These experts remind that "although GLP-1 RAs have a good track record of safety, we cannot yet know the potential risks of long-term treatment, begun in adolescence, with this or any drug that modulates fundamental metabolic pathways."[47] As this treatment has to be long-term, in fact, lifelong, because the drug discontinuation is followed by rapid weight gain, it raises not only clinical, but also financial concerns: "At $1400 per month, GLP-1 RA treatment of all adolescents with obesity in the US would cost approximately $100 billion annually. Treatment of all adults with obesity would cost approximately $1 trillion."[48]

Health policy experts share concerns about estimating costs to determine the value of interventions to manage unhealthy weight. They point out that "in a world with many competing priorities, stakeholders need to understand the value of investing in childhood obesity policy changes to prioritize funding clinical and policy interventions."[49] As the use of bariatric surgery and pharmacotherapy to treat obesity in child and adolescent populations is likely to increase, "these more costly treatments may have maintenance costs over a lifetime horizon, meaning that we might see children at a normal BMI class but with very high expenditures due to the use of pharmacotherapy, and we will no longer be able to rely solely on current BMI class-related expenditures as a marker for the costs attributable to unhealthy weight."[50] New approaches to assessment of costs associated with obesity will be required.

Clinicians, policymakers and healthcare payers must be aware of the new developments in obesity treatment and take into account their potential long-term impacts on both patients' health status and health care expenditures.

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[45] Ibid.
[46] Ludwig, David S. and Jens J. Holst. "Childhood Obesity at the Crossroads of Science and Social Justice." *JAMA.* Published online May 1, 2023, https://doi:10.1001/jama.2023.7592.
[47] Ibid.
[48] Ibid.
[49] Luviano, Andrea; Pandya, Ankur; and Davene R. Wright. "Current and Future Challenges Regarding Estimating Costs to Determine the Value of Interventions to Manage Unhealthy Weight." *JAMA Pediatrics*. Published online. July 3, 2023, https://doi:10.1001/jamapediatrics.2023.2018.
[50] Ibid.

DIAGNOSIS AND CLASSIFICATION OF DIABETES MELLITUS

Definition and Description

Diabetes mellitus is defined as "a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both."[51]

Diabetes develops because of several pathogenic processes, ranging from autoimmune destruction of the beta-cells of the pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin action. Both type 1 diabetes and type 2 diabetes are "heterogeneous diseases in which clinical presentation and disease progression may vary considerably."[52] In both type 1 and type 2 diabetes, "various genetic and environmental factors can result in the progressive loss of β-cell mass and/or function that manifests clinically as hyperglycemia. Once hyperglycemia occurs, people with all forms of diabetes are at risk for developing the same chronic complications, although rates of progression may differ. The identification of individual therapies for diabetes in the future will be informed by better characterization of the many paths to β-cell demise or dysfunction."[53]

Acute, life-threatening consequences of uncontrolled diabetes are hyperglycemia with ketoacidosis or the nonketonic hyperosmolar syndrome. Hypoglycemia (abnormally low level of blood sugar), which is often associated with diabetes and its treatment, can also lead to severe consequences and can sometimes be life-threatening as it is a potential cause of acute cardiovascular events.

The chronic hyperglycemia of diabetes (abnormally high level of blood sugar) is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels. Long-term complications of diabetes include retinopathy with potential loss of vision; nephropathy leading to renal failure; peripheral neuropathy with risk of foot ulcers and amputations; and autonomic neuropathy causing gastrointestinal, genitourinary, and cardiovascular symptoms and sexual dysfunction. Patients with diabetes have an increased incidence of atherosclerotic cardiovascular, peripheral arterial, and cerebrovascular disease.

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[51] American Diabetes Association. *Diagnosis and Classification of Diabetes Mellitus,* http://www.ncbi.nlm.nih.gov/pmc/articlaes/PMC2792783.

[52] American Diabetes Association. "Classification and Diagnosis of Diabetes: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-S002.

[53] Ibid.

Classification

Diabetes is currently classified into the following general categories:

1. Type 1 diabetes (due to autoimmune β-cell destruction, usually leading to absolute insulin deficiency, including latent autoimmune diabetes of adulthood)

2. Type 2 diabetes (due to a non-autoimmune progressive loss of adequate β-cell insulin secretion frequently on the background of insulin resistance and metabolic syndrome)

3. Specific types of diabetes due to other causes, e.g., monogenic diabetes syndromes (such as neonatal diabetes and maturity-onset diabetes of the young), diseases of the exocrine pancreas (such as cystic fibrosis and pancreatitis) and drug - or chemical - induced diabetes (such as with glucocorticoid use, in the treatment of HIV/AIDS, or after organ transplantation)

4. Gestational diabetes mellitus (diabetes diagnosed in the second or third trimester of pregnancy that was not clearly overt diabetes prior to gestation)[54]

Classification is important for determining therapy. At the same time, one of the current trends in understanding diabetes and approaches to treatment is the acknowledgement of significant overlap across the spectrum of diabetes. More precise definition of the diabetes subsets remains an important area of research, with the goal of optimizing treatment approaches for various subsets of diabetes.

Most common forms of diabetes are type 1 diabetes and type 2 diabetes.

Type 1 Diabetes

Type 1 diabetes, or immune-mediated diabetes, previously called "insulin-dependent diabetes" or "juvenile-onset diabetes," accounts for 5-10 percent of diabetes and is due to cellular mediated-autoimmune destruction of the pancreatic β-cells; it is identified by the presence of one or more specific autoimmune markers.[55] This form of diabetes commonly occurs in childhood and adolescence, but, as has been recently acknowledged, it may occur at any age. As most of the mutations that cause type 1 diabetes are dominantly inherited, it leads to important genetic considerations. Genetic screening has been used to identify high-risk populations. To be useful, genetic testing must be followed by genetic counseling. Islet autoantibody testing of individuals genetically at risk for type 1 diabetes (for example, relatives of those with type 1 diabetes or individuals from the general population with type 1 diabetes-associated genetic factors) identifies individuals who may develop type 1 diabetes. When such testing is coupled with education about diabetes symptoms and close follow-up of these individuals, it may enable earlier identification of type 1 diabetes onset.

[54] Ibid.
[55] Ibid.

Recently, there has been a call for expanded screening, not limited to individuals who have family members with type 1 diabetes. It is estimated that approximately 90 percent of those who develop type 1 diabetes do not have a family history.[56] At its March 2021 meeting, the Type 1 Diabetes Trial-Net Steering Committee devoted one session to the discussion of the ongoing efforts for screening in the general population. Participants analyzed benefits and risks of screening for early-stage type 1 diabetes and suggested initial recommendations for individuals with positive screens so that standardized guidelines for monitoring and follow-up can be established.[57]

The consideration of the need for and feasibility of population screening to identify those at increased risk was triggered by recent successes in disease-modifying therapies to impact the course of early-stage disease. In the fall of 2022, the Food and Drug Administration (FDA) approved the first treatment to delay the onset of stage 3 type 1 diabetes: Tzield (teplizumab). This injectable drug is approved for individuals 8 years and older who are considered to be in stage 2 of type 1 diabetes. The agency based its approval on data from a 2019 randomized, double-blind, placebo-controlled trial with 76 patients who had stage 2 type 1 diabetes. The study showed that patients with stage 2 type 1 diabetes who received Tzield moved to stage 3 after a longer period of time than those who took placebo. Stage 3 occurs when patients develop overt hyperglycemia, typically with multiple symptoms of diabetes. Delaying the onset of stage 3 is a significant achievement that can make a big difference in the lives of those who have type 1 diabetes and their families.

Tzield cannot prevent or cure diabetes. However, it can slow the disease progression and thus, "delay the need for exogenous insulin therapy and its associated risks and intensive regimen." The American Association of Pediatrics (AAP) pronounced the delay "clinically meaningful, particularly because T1D often presents in patients younger than 10 years who may face challenges with complex disease management."[58]

Type 1 experts and advocates are encouraged by the newly acquired possibility "to identify the majority of children and adults who will develop type 1 diabetes and to take action to delay or prevent the disease prior to needing insulin."[59] It is important to realize that changing screening and treatment practices will require further studies and thoughtful, well-coordinated implementation policies.

The ability to intervene in the disease course during a presymptomatic phase is a key tenant of population screening, but likewise, identifying effective therapies and applying them in clinical settings depends on identifying those at risk who are most likely to benefit from them.

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[56] Sims, Emily K. "Screening for Type 1 Diabetes n the General Population: A Status Report and Perspectives." *Diabetes*, April 2022. Vol. 71, https://doi.org /10.2337/dbi20-004.

[57] Ibid.

[58] American Association of Pediatrics. "FDA Approved First Drug That Can Delay Onset of Type 1 Diabetes." *AAP News*, January 1, 2023, https://www.fda.gov/media/164864/download#:~:text=The%20Food%20and%20Drug%20Administration%20(FDA)%20has%20approved%20Tzield%20(,who%20have%20stage%202%20T1D.

[59] Sims, Emily K. "Screening for Type 1 Diabetes n the General Population: A Status Report and Perspectives." *Diabetes*, April 2022. Vol. 71, https://doi.org /10.2337/dbi20-004.

Collaborations between groups involved in screening and therapeutics will be needed to fulfill this objective.[60]

Experts believe that screening for type 1 diabetes "has entered a new phase" and that, when it is combined with the availability of new therapies, "the opportunity for dramatically changing the future of this disease is enormous."[61]

Another important development in type 1 diabetes treatment is the FDA approval of a new automated insulin dosing system. This insulin pump and dosing software from Beta Bionics were approved by the FDA for managing type 1 diabetes in people aged 6 years or older. Together, the pump, software and a previously approved continuous glucose monitor form an "automated insulin dosing system," called the iLet Bionic Pancreas.[62] The new pump eliminates the need to change the pump's settings manually as, unlike conventional insulin pumps, the only input its algorithm needs is the patient's body weight. The iLet Bionic Pancreas does not require patients to keep track of the number of carbohydrates in their meals. Instead, users can rate the approximate amount of carbohydrates in their meal as small, medium, or large. Eventually, the new system's algorithm learns to respond to the patient's unique insulin needs.[63] The FDA approval of the iLet Bionic Pancreas was based on the results of a randomized clinical trial, which demonstrated that "participants with the bionic pancreas had a greater reduction in glycated hemoglobin than those receiving standard insulin delivery methods."[64]

Type 2 Diabetes

Type 2 diabetes, previously referred to as "non-insulin-dependent diabetes" or "adult-onset diabetes," accounts for 90-95 percent of all diabetes; this form "encompasses individuals who have relative (rather than absolute) insulin deficiency and have peripheral insulin resistance."[65] At least initially, and often throughout their lifetime, these patients may not need insulin treatment to survive. There are various causes of type 2 diabetes. Its specific etiologies remain unknown, but autoimmune destruction of β-cells does not occur, and many patients do not have any of the other known causes of diabetes. It is often associated with a strong genetic predisposition, and the risk of developing this form of diabetes increases with age, obesity, and lack of physical activity. There are also other known risk factors. Type 2 diabetes occurs more frequently in people with prior gestational diabetes mellitus or polycystic ovary syndrome and in individuals with a history of hypertension or dyslipidemia. Type 2 diabetes is more common in certain racial/ethnic subgroups such as African American, Native American, Hispanic/Latino, and Asian Americans. Awareness of these facts can facilitate early testing and patient education, which, in turn, can prevent or delay the development of diabetes or, at least, ensure early diagnosis and timely treatment.

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[60] Ibid.
[61] Ibid.
[62] Harris, Emily "Medical News in Brief." *JAMA*. Published online May 31, 2023, doi: 10.1001jama.2023.9602.
[63] Ibid.
[64] Ibid.
[65] American Diabetes Association. "Classification and Diagnosis of Diabetes: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-S002.

Type 2 diabetes often remains undiagnosed for many years because hyperglycemia develops gradually and, at earlier stages, is not severe enough for the patient to recognize the classic diabetes symptoms. Even undiagnosed patients are at increased risk of developing macrovascular and microvascular complications, and the duration of glycemic burden is a strong predictor of adverse outcomes, so the American Diabetes Association strongly recommends early detection and early intervention, underscoring the availability of simple tests to detect preclinical disease and the existence of effective interventions that prevent progression from prediabetes to diabetes and reduce the risk of diabetes complications.[66] Multiple controlled trials and computer simulation modelling studies suggest that "major benefits are likely to accrue from the early diagnosis and treatment of hyperglycemia and cardiovascular risk factors in type 2 diabetes," and, "moreover, screening, beginning at age 30 or 45 years and independent of risk factors, may be cost-effective (<$11,000 per quality-adjusted life-year gained)."[67] The ADA "Standards of Care in Diabetes – 2023" contain an extensive discussion of various approaches to screening and testing for prediabetes and type 2 diabetes in asymptomatic adults, children, and adolescents.

Gestational Diabetes

Gestational diabetes mellitus (GDM) has been gaining more attention in the past few years. This form of diabetes was traditionally defined as "any degree of glucose intolerance that was first recognized during pregnancy," regardless of the degree of hyperglycemia.[68] Today, many experts acknowledge that though this definition served as the basis for detection and treatment of GDM, it has several limitations. Ample evidence indicates that many cases of GDM represent preexisting hyperglycemia that is detected by routine screening in pregnancy, as routine screening is not widely performed in nonpregnant individuals of reproductive age. In addition, the ADA underscores that "it is the severity of hyperglycemia that is clinically important with regard to both short- and long-term maternal and fetal risks."[69] As the prevalence of obesity and diabetes in people of reproductive age has increased significantly, more women are diagnosed with preexisting type 2 diabetes in early pregnancy. The ADA points out that "ideally, undiagnosed diabetes should be identified preconception in individuals with risk factors or in high-risk populations" because it has been shown that "the preconception care of people with preexisting diabetes results in lower A1C and reduced risk if birth defects, preterm delivery, perinatal mortality, small-for-gestational-age birth weight, and neonatal intensive care unit admission."[70] If women are not screened prior to pregnancy, universal early screening at 15 weeks of gestation or earlier may be preferable to selective screening, especially in populations with high prevalence of risk factors and undiagnosed diabetes in people of child-bearing age. An argument can be made that as strong racial and ethnic disparities exist in the prevalence of undiagnosed diabetes, "early screening provides an initial step to identify these health disparities so that they can begin to be addressed."[71] If early screening is negative, pregnant women should be rescreened for GDM between 24 and 28 weeks of gestation. As GDM is often indicative of underlying β-cell dysfunction, which confers marked increased risk for later development of diabetes […] in the

[66] Ibid.
[67] Ibid.
[68] Ibid.
[69] Ibid.
[70] Ibid.
[71] Ibid.

mother after delivery," the ADA recommends that "individuals diagnosed with GDM should receive lifelong screening for prediabetes to allow interventions to reduce diabetes risk and for type 2 diabetes to allow treatment at the earliest possible time."[72]

It is well-known that gestational diabetes is associated with short - and long-term adverse effects and risks for women and offspring. Mothers who had GDM are several times more likely to develop diabetes later in life (this correlation is especially pronounced in certain racial and ethnic groups); women who had GDM are also at higher relative risk for future cardiovascular disease.[73] In offspring, fetal exposure to gestational diabetes in utero has been linked to macrosomia (growth beyond a specific threshold) and adiposity (severe overweight) in newborns as well as impaired glucose tolerance and obesity in childhood, which, in turn, increases "risks for adverse cardiometabolic outcomes for offspring across the lifespan."[74] The Hyperglycemia and Adverse Pregnancy Outcome (HAPO), a ground-breaking large-scale, multinational cohort study convincingly demonstrated that risk of adverse maternal, fetal, and neonatal outcomes continuously increased as a function of maternal glycemia even if maternal glucose levels were below those diagnostic of diabetes.[75] Based on their "findings of significant associations between adverse outcomes and higher levels of maternal glucose" within what was considered a non-diabetic range, the investigators argued for the "need to reconsider current criteria for diagnosing and treating hyperglycemia during pregnancy."[76] That foundational study led to reconsideration of the diagnostic criteria for GDM and its management. At present, experts are striving to establish a uniform approach to diagnosing GDM that would benefit patients, caregivers, and policymakers.[77]

[72] Ibid.
[73] Shah, Nilay S. et al. "Trends in Gestational Diabetes at First Live Birth by Race and Ethnicity in the US, 2011-2019." *JAMA,* August 2021. Vol. 326. No. 7, doi: 10.1001/jama.2021.7217.
[74] Ibid.
[75] The HAPO Study Cooperative Research Group. "Hyperglycemia and Adverse Pregnancy Outcomes." *The New England Journal of Medicine*. May 8, 2008. Vol. 358. No. 19, https://www.nejm.org/doi/pdf/10.1056/nejmoa0707943.
[76] Ibid.
[77] American Diabetes Association. "Classification and Diagnosis of Diabetes: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-S002.

NEW DEVELOPMENTS IN DIABETES RESEARCH AND THERAPEUTIC APPROACHES

The field of diabetes care keeps changing with the emergence of new research, technology, and treatments that have the potential of improving the health and well-being of people with diabetes. The two leading world organizations – the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD) – closely follow the latest developments and devise recommendations for clinicians, based on the newly acquired knowledge and accumulated evidence. This section discusses the current standards of care suggested by these two organizations as well as some of the latest discoveries and trends in diabetes treatment and management.

Management of Hyperglycemia in Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)

The American Diabetes Association and the European Association for the Study of Diabetes convened a panel to update the previous consensus statements on the management of hyperglycemia in type 2 diabetes in adults. Those statements have been published since 2006, with the previous one issued in 2019. "The target audience is the full spectrum of the professional health care team providing diabetes care in the U.S. and Europe."[78] The new recommendations are based on the panel's systematic examination of publications since 2018. The updated recommendations include additional focus on social determinants of health, the health care system, and physical activities, including sleep; a greater emphasis on weight management as part of the holistic approach to diabetes management; and enhanced guidelines on cardiorenal protection in people with diabetes at high risk of cardiorenal disease.

It is universally recognized that type 2 diabetes is "a chronic complex disease, and management requires multifactorial behavioral and pharmacological treatments to prevent or delay complications and maintain quality of life."[79] The consensus report endorses this understanding and underscores that it "necessitates that care be delivered in an organized and structured way, such as described in the chronic care model, and includes a person-centered approach to enhance engagement in self-care activities."[80] This particular report addresses one of the critical aspects of

[78] "Management of Hyperglycemia on Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)." *Diabetes Care*. Vol. 45, No. 11, November 2022, https://doi.org/10.2337/dci22-0034.
[79] Ibid.
[80] Ibid.

diabetes care: approaches to management of blood glucose levels in nonpregnant adults with type 2 diabetes.

The consensus report discusses the rationale, importance, and context of glucose-lowering treatment. The authors assert that "the expanding number of glucose-lowering interventions – from behavioral interventions to pharmacological interventions, devices, and surgery – and growing information about their benefits and risks provide more options for people with diabetes and providers but complicate decision making." In their report, the authors summarize "a large body of recent evidence for practitioners in the U.S. and Europe with the aim of simplifying clinical decision-making and focusing our efforts on providing holistic person-centered care."[81]

The report reenforces the idea that "attaining recommended glycemic targets yields substantial and enduring reductions in the onset and progression of microvascular complications" and that early intervention is essential. The investigators also point out an important detail: "the greatest absolute risk reduction comes from improving very elevated glycemic levels, and a more modest reduction results from near normalization of plasma glucose levels."[82] The impact of glucose control on macrovascuar complications is less certain; it is, however, supported by multiple studies. The consensus report identifies various groups of population for whom higher or lower HbA1C targets can be appropriate dependent on their age, life expectancy, hypoglycemia or other adverse treatment effects. The authors strongly suggest that "glycemic treatment targets should be tailored based on an individual's preferences and characteristics."[83]

The ADA/EASD consensus report outlines imperative principles of care for patients with diabetes. Notably, the first of these principles addresses language used by medical providers in their communication with people who have type 2 diabetes. This communication is at the core of integrated care. Clinicians treating their patients with diabetes are strongly advised to use language that is neutral, free of stigma, and based on facts. The medical provider's language must be strength-based (focused on want is working); respectful and inclusive; it should be person-centered and encourage collaboration. "People living with diabetes should not be referred to as "diabetics" or described as "noncompliant" or blamed for their health condition."[84]

The report re-asserts the role of diabetes self-management, education, and support (DSMES) as a key intervention, as important to the treatment plan as the selection of pharmacotherapy, and central to establishing and implementing principles of care. As type 2 diabetes changes constantly, DSMES should be offered on an ongoing basis, especially at critical junctures such as at diagnosis, with the appearance of complications, and during transitions in life and care. Quality DSMES programs have been consistently shown to provide multiple benefits: improve patients' knowledge, glycemic levels, and clinical and psychological outcomes; reduce hospital admissions and all-cause mortality; they are also cost-effective. DSMES must be tailored to the individual's context and can be provided using multiple approaches and in variety of settings, including telehealth and web-based programs (the latter were used with success during the COVID-19 pandemic). Emerging digital strategies to support behavior change can extend the

[81] Ibid.
[82] Ibid.
[83] Ibid.
[84] Ibid.

reach to a broader segment of the population with diabetes and appear to be promising; however, data from trials of digital strategies are still preliminary in nature and vary significantly.

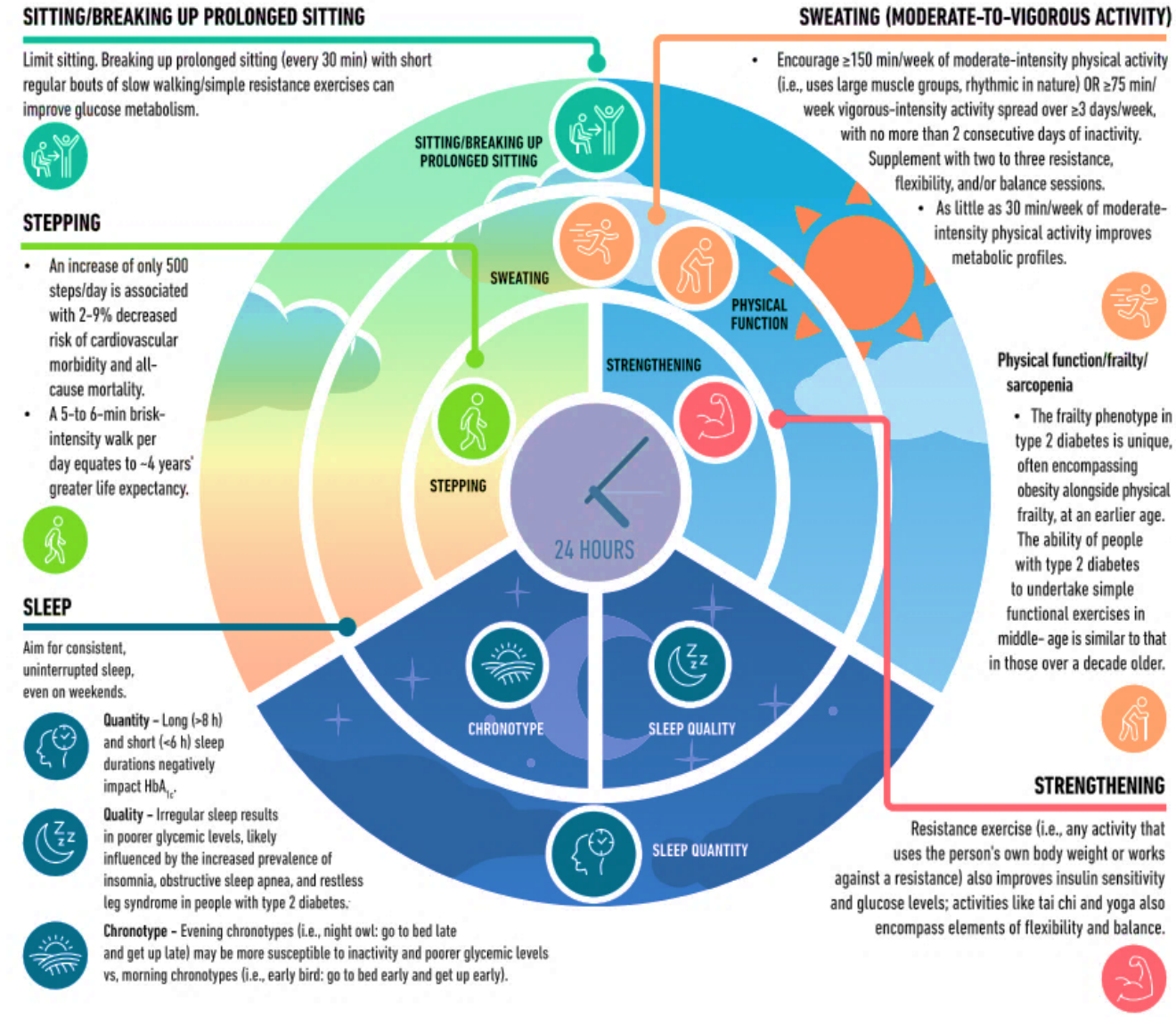
The report underscores the heterogeneous nature of diabetes and strongly endorses individualized and personalized approach to treatment. Person-centered care that addresses multimorbidity and is responsive to individual preferences and barriers is perceived as essential for effective diabetes management.

Weight reduction has been elevated as a targeted intervention for many people with type 2 diabetes as higher magnitude of weight loss has been demonstrated to confer better outcomes and as some of the weight loss' benefits may extend beyond glycemic management to improve risk factors for cardiometabolic disease and quality of life.

The report addresses various kinds of glucose monitoring and analyzes treatment behaviors. Persistence and adherence are essential for diabetes care. However, suboptimal medication-taking behavior and low rates of continued medication use affect almost half of people with type 2 diabetes; this, in turn, leads to suboptimal glycemic control and increases risk of diabetes complications, hospitalizations, and mortality. The report carefully examines various factors contributing to inconsistent medication use and treatment discontinuation among patients with diabetes and advocates for focusing on facilitators of adherence. The authors acknowledge that "ultimately, individual preferences are major factors driving the choice of medications" and clinicians should realize that their choice of a particular medication for a particular patient needs to be based not only on the evidence from critical trials, but also on the patient's preferences regarding route of administration, injection devices, side effects, or cost.

The report examines key therapeutic options: the lifestyle and healthy behavior, weight management, and pharmacotherapy for the treatment of type 2 diabetes. Nutrition therapy, which is integral to diabetes management, is discussed in detail, with emphasis on the importance of identifying healthy dietary habits that are feasible and sustainable. Specific pharmacological treatment options are summarized in detailed tables. Various classes of glucose-lowering medications are considered, with a recommended selection process offered as a result. The 2022 report specifically covers new evidence from cardiovascular outcomes studies published since the previous consensus report. Healthy sleep is promoted as a key lifestyle component in the management of type 2 diabetes, with clinical practice guidelines regarding sleep hygiene. A colorful graph summarizes recommendations on 24-hour physical behaviors for type 2 diabetes.

Importance of 24-Hour Physical Behaviors for Type 2 Diabetes



	Glucose/insulin	Blood pressure	HbA1c	Lipids	Physical function	Depression	Quality of life
SITTING/BREAKING UP PROLONGED SITTING	↓	↓	↓	↓	↑	↓	↑
STEPPING	↓	↓	↓	↓	↑	↓	↑
SWEATING (MODERATE-TO-VIGOROUS ACTIVITY)	↓	↓	↓	↓	↑	↓	↑
STRENGTHENING	↓	↓	↓	↓	↑	↓	↑
ADEQUATE SLEEP DURATION	↓	↓	↓	↓	?	↓	↑
GOOD SLEEP QUALITY	↓	↓	↓	↓	?	↓	↑
CHRONOTYPE/CONSISTENT TIMING	↓	?	↓	?	?	↓	?

IMPACT OF PHYSICAL BEHAVIORS ON CARDIOMETABOLIC HEALTH IN PEOPLE WITH TYPE 2 DIABETES

↑ **Higher levels/improvement** (physical function, quality of life); ↓ **Lower levels/improvement** (glucose/insulin, blood pressure, HbA1c, lipids, depression); ? no data available;
↑ Green arrows = **strong evidence**; ↑ Yellow arrows = **medium strength evidence**; ↑ Red arrows = **limited evidence**.

Figure 2—Importance of 24-h physical behaviors for type 2 diabetes.

Source: Diabetes Care 2022;45(11):2753–2786, https://doi.org/10.2337/dci22-0034. Chart downloaded from http://diabetesjournals.org/care/article-pdf/45/11/2753/691567/dci220034.pdf on April 18, 2023.

The consensus report contains additional considerations regarding age, race and ethnicity, and sex differences.

Older people with diabetes require a special approach. Type 2 is associated with accelerated biological aging. This means declines in physical capacity. It places older people living with type 2 diabetes at a higher risk of impaired physical function and frailty, which in turn reduces their quality of life and increases health care use. Accordingly, "frailty is increasingly recognized as a major complication of type 2 diabetes and an important target for treatment."[85] Treatment of older adults with diabetes requires careful, informed decisions with special attention to safety and tolerance; "consideration of de-prescribing medication to avoid unnecessary medication or medication associated with harm, such as hypoglycemia and hypotension, is important in such populations."[86]

Younger people with diabetes are currently receiving more attention as their numbers have grown significantly in the U.S. and around the world. In the past few years, adolescent and young adult population has exhibited higher rates of impaired glucose tolerance and type 2 diabetes, which experts tie with increases of obesity. According to recent estimates, about one of five adolescents and one of four young adults in the U.S. have prediabetes, and thus, are at higher risks of progression to type 2 diabetes and cardiovascular diseases.[87] Minority populations are particularly affected. While the incidence of type 1 diabetes has the highest rates in non-Hispanic white youth, the highest type 2 diabetes rates were observed among adolescent minority populations, with half or more of newly diagnosed cases of type 2 diabetes in childhood and adolescence occurring in Hispanic, non-Hispanic Black, Asian/Pacific Islander, and American Indian populations.[88] In addition to growing numbers, another concern about young adults with type 2 diabetes is that they tend to have "a more rapid deterioration in blood glucose levels, an attenuated response to diabetes medication, and more rapid development of diabetes complications."[89] Researchers noted that "early disease onset, higher levels of hyperglycemia, and the multiple cardiometabolic risk factors found in adolescents and young adults with impaired glucose tolerance and/or impaired fasting glucose and diabetes all contribute to an increase in risk of adverse outcomes."[90] The consensus report urges clinicians to select treatment options for

[85] Ibid.
[86] Ibid.
[87] Andes, Linda J., et al. "Prevalence of Prediabetes Among Adolescents and Young Adults in the United States, 2005-2016." *JAMA Pediatrics*. Vol. 174. No. 2, February 2020, doi: 10.1001/jamapediatrics20194498.
[88] "Management of Hyperglycemia on Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)." *Diabetes Care*. Vol. 45, No. 11, November 2022, https://doi.org/10.2337/dci22-0034.
See also: Dabelea, Dana, et al. Writing Group for the SEARCH for Diabetes in Youth Study Group. "Incidence of Diabetes in Youth in the United States." JAMA. Vol. 297. No. 24. June 2007, doi: 10.1001/jama.297.24.2716.
[89] "Management of Hyperglycemia on Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)." *Diabetes Care*. Vol. 45, No. 11, November 2022, https://doi.org/10.2337/dci22-0034.
[90] Ibid.
See also: Andes, Linda J., et al. "Prevalence of Prediabetes Among Adolescents and Young Adults in the United States, 2005-2016." *JAMA Pediatrics*. Vol. 174. No. 2, February 2020, doi: 10.1001/jamapediatrics20194498.

affected young individuals according to these data: "Younger people with type 2 diabetes should be considered at very high risk for complications and treated correspondingly."[91]

With regard to race and ethnicity, the report mentions that although specific populations are disproportionately affected by diabetes, they are consistently underrepresented in medical trials. Clinicians are advised to factor the increased burden of complications into personalized treatment plans and to use beneficial medications irrespective of race or ethnicity.

Specific considerations should be taken into account while treating women who have type 2 diabetes. In particular, the report recommends continued efforts to enroll women in outcome trials and "to identify and address modifiable cardiovascular risk factors in women with diabetes."[92]

The ADA/EASD report offers detailed consensus recommendations on the general principles, specific types of physical activity that would be most beneficial, ways to achieve medication adherence, and specific strategies for implementation, with practical tips for clinicians and a consistent emphasis on the holistic approach and individualization of care.

The *ADA Standards of Medical Care in Diabetes - 2022* *and* the *ADA Standards of Care in Diabetes - 2023*

To achieve its mission to prevent and treat diabetes and keep abreast of the latest developments in the scientific and clinical fields, the ADA issues its *Standards of Care in Diabetes* annually, updating its recommendations to reflect new discoveries. "Evidence-based recommendations drive better care for all people with diabetes, including vulnerable communities and those at high risk. ADA's *Standards of Care* are the gold standard for diabetes care and prevention that allows clinicians around the world to remain abreast of the rapidly changing healthcare landscape," says chief scientific and medical officer for the ADA, Dr. Robert Gabbay.[93] The recommendations include screening, diagnostic, and therapeutic actions that have been shown to lead to favorable outcomes in patients with diabetes. The classification system developed by the ADA indicates the quality of scientific evidence supporting its recommendations. Based on the strength of evidence, the ADA assigns appropriate ratings to each of its recommendations and updates them as new studies appear.

Standards of Care in Diabetes are regularly reviewed and updated by the Professional Practice Committee (PPC) of the American Diabetes Association. The PPC is a multidisciplinary committee comprised of physicians, diabetes educators, and others who have expertise in a range

[91] "Management of Hyperglycemia on Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)." *Diabetes Care*. Vol. 45, No. 11, November 2022, https://doi.org/10.2337/dci22-0034.
[92] Ibid.
[93] American Diabetes Association. *American Diabetes Association Releases 2023 Standards of Care in Diabetes to Guide Prevention, Diagnosis, and Treatment for People Living with Diabetes:* Press release. Arlington, VA. December 12, 2022, https://diabetes.org/newsroom/press-releases/2022/american-diabetes-association-2023-stahdards-of-care-diabetes-guide-for-prevention-diagnosis-treatment-for-people-living-with-diabetes.

of relevant areas, including adult and pediatric endocrinology, public health, endocrinology, hypertension, lipid research, and pregnancy care.

The ADA Standards of Medical Care in Diabetes – 2022 contained, in addition to minor changes clarifying recommendations or reflecting new evidence, several substantive revisions.

In the broad area of improving care and promoting health in populations, additional information was provided on online platforms to support behavior change and well-being. A section on cost considerations for medication-taking behaviors was expanded to include more discussion about costs of medications and treatment goals. The health literacy and numeracy subsection was expanded as well as the community health workers content.

In the section on diabetes classification and diagnosis of diabetes, the type 1 diabetes subsection and the recommendations within it were updated based on the publication of *The Management of Type 1 Diabetes in Adults: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)* published at the end of 2021.[94] The consensus report was prepared by the writing group convened by the ADA and the EASD. The group considered the rapid development of new treatments and technologies covering a wide range of areas encompassing type 1 diabetes diagnosis, aims of management, glucose monitoring, insulin therapy, hypoglycemia, pancreas and islet transplantation, and future perspectives. The authors discussed key areas of the management of type 1 diabetes and encouraged further, higher-quality research evidence that could help determine optimal care for people with type 1 diabetes; they also advocated for improved access to services.[95]

The ADA Standards of Care in Diabetes – 2022 recommended that, for all people, screening for diabetes and prediabetes should begin at age 35; in addition, recommendations for genetic testing for those without typical characteristics of type 1 or type 2 diabetes were revised. Recommendations for gestational diabetes mellitus included changes regarding preconception and early pregnancy screening for diabetes and abnormal glucose metabolism, with supporting evidence added to the text.[96]

The ADA Standards of Medical Care in Diabetes – 2022 modified recommendations on prevention or delay of type 2 diabetes and associated comorbidities and added a new subsection and recommendation on patient-centered care aimed at weight loss or prevention of weight gain, minimizing progression of hyperglycemia, and attention to cardiovascular risk. The section on immunizations was expanded. Other revisions addressed digital coaching and digital self-management interviews as effective methods of education and support, glucose variability and the association of hypoglycemia, selection of technology based on individual and caregiver preferences, ongoing education on the use of devices and continued access to devices across

[94] The full text of this report can be found at *The Management of Type 1 Diabetes in Adults: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)",* https://doi.org/10.2337/dci21-0043.

[95] "The Management of Type 1 Diabetes in Adults: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)". *Diabetes Care.* Vol. 44, No. 11, November 2021, https://doi.org/10.2337/dci21-0043.

[96] American Diabetes Association. "Summary of Revisions: Standards of Medical Care in Diabetes – 2022," *Diabetes Care*. 2022. Vol. 45. Suppl. 1, https://doi.org/10.2337/dc22-SREV.

payers, continuous glucose monitoring for various age groups. Evidence was added regarding the importance of approaches to obesity as both obesity and diabetes increase risk for more severe COVID-19 infections. More discussion was added to the diabetic retinopathy and chronic kidney disease subsections. More discussion was also added on classification of older adults and overtreatment of elder patients. Several recommendations were modified or expanded regarding diabetes care in children and adolescents. The section on management of diabetes in pregnancy has been expanded as well.

The ADA Standards of Care in Diabetes – 2023 uphold the focus on patient-centered care endorsed by the previous versions of the *Standards.*

The latest edition of the *ADA Standards of Care in Diabetes* (2023) includes the following notable updates:

- Emphasis on supporting higher weight loss (up to 15 percent) based on the efficacy of and access to newer medications when appropriate
- New recommendations related to sleep health and physical activity in people with diabetes
- Broad considerations of social determinants of health in guiding the design and delivery of care
- New hypertension diagnosis cut-offs
- The expanded role of SGLT2 inhibitor use in preserved and reduced heart failure ejection fraction
- The role of finerenone in individuals with diabetes and chronic kidney disease with albuminuria
- New lipid management recommendations suggesting lower LDL goals for high-risk individuals
- An expanded subsection on nonalcoholic fatty liver disease
- New details on digital health, telehealth, and telemedicine and the benefits on these modalities of care delivery
- The use of technology in older adults with diabetes
- The utility of point-of-care A1C testing for diabetes screening and diagnosis
- The use of person-first and inclusive language
- Updates in vaccination for people with diabetes
- Updates in COVID-19 and diabetes.[97]

Other noteworthy changes to the *ADA Standards of Care – 2023* are updates in alignment with the consensus report by the American Diabetes Association and the European Association for the Study of Diabetes *Management of Hyperglycemia in Type 2 Diabetes* published in 2022.[98]

[97] American Diabetes Association. *American Diabetes Association Releases 2023 Standards of Care in Diabetes to Guide Prevention, Diagnosis, and Treatment for People Living with Diabetes:* Press Release. Arlington, VA. December 12, 2022, https://diabetes.org/newsroom/press-releases/2022/american-diabetes-association-2023-stahdards-of-care-diabetes-guide-for-prevention-diagnosis-treatment-for-people-living-with-diabetes.

[98] For more details regarding this consensus report, see "Management of Hyperglycemia on Type 2 Diabetes, 2022: A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD).". *Diabetes Care*. Vol. 45, No. 11, November 2022, https://doi.org/10.2337/dci22-0034.

In his comments on the *ADA Standards of Care – 2023,* Dr. Charles Henderson, chief executive officer for the ADA, said, "This year's annual report provides necessary guidance that considers the role health inequities play in the development of diabetes, particularly for vulnerable communities and communities of color disproportionately impacted by the disease. This guidance will ensure health care teams, clinicians and researchers treat the whole person."[99]

Person-centered care remains a focal point of the *ADA Standards of Care.* The ADA defines patient-centered care as "care that considers individual patient comorbidities and prognoses; is respectful of and responsive to patient preferences, needs, and values; and ensures that patient values guide all clinical decisions."[100] In addition, the latest ADA *Standards* highlight social determinants of health (SDOH). Social determinants of health, which are often out of direct control of the individual and potentially represent lifelong risk, "contribute to health care and psychological outcomes and must be addressed to improve all health outcomes."[101] Primary care providers are encouraged to ensure their treatment decisions are timely, rely on evidence-based guidelines, include social community support, and are made collaboratively with patients based on their individual preferences, prognoses, comorbidities; informed financial considerations should also be taken into account. Approaches to diabetes management must be aligned with the Chronic Care Model.

In accordance with the emphasis on person-centered care, the new *Standards of Care* include notable revisions to incorporate person-first, inclusive and strength-based language. The authors state that "efforts were made to consistently apply terminology that empowers people with diabetes and recognizes the individual at the center of diabetes care."[102] For example, the title of Section 5 has been changed to "Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes" in order to enhance the positive outlook; the "Psychosocial Issues" subsection was renamed "Psychosocial Care" to remove negative implications and possible patient-blaming and to highlight the emphasis on providing appropriate psychosocial support to people with diabetes in conjunction with standard diabetes care; and in the "Diabetes Technology" subsection, the word "preference" for diabetes devices was added in all recommendations.

The *Standards of Care – 2023* consistently advocate for tailoring treatment for social context, with updated, evidence-supported recommendations like the following:

> 1.5 Assess food insecurity, housing insecurity/homelessness, financial barriers, and social capital/social community support to inform treatment decisions, with reference to appropriate local community resources.

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[99] American Diabetes Association. *American Diabetes Association Releases 2023 Standards of Care in Diabetes to Guide Prevention, Diagnosis, and Treatment for People Living with Diabetes:* Press Release. Arlington, VA. December 12, 2022, https://diabetes.org/newsroom/press-releases/2022/american-diabetes-association-2023-stahdards-of-care-diabetes-guide-for-prevention-diagnosis-treatment-for-people-living-with-diabetes.

[100] American Diabetes Association. "Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/cd23-as01.

[101] Ibid.

[102] American Diabetes Association. "Summary of Revisions: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-SREV.

1.6 Provide patients with additional self-management support from lay health coaches, navigators, or community health workers when available.

1.7 Consider the involvement of community health workers to support the management of diabetes and cardiovascular risk factors, especially in underserved communities and health care systems.[103]

Considerable changes were made to the immunization subsection to reflect new indications and guidance, particularly for COVID-19 and pneumococcal pneumonia vaccinations; this includes age-related recommendations and the bivalent COVID-19 booster.[104]

New information was added regarding continuous glucose monitoring devices (CGM), and a recommendation was modified to highlight the need to assure that people with diabetes have uninterrupted access to their supplies to minimize gaps in CGM use.

Continuous glucose monitoring was specifically recommended for certain groups of older adults with the main purpose of reducing hypoglycemia. Other significant new recommendations for older adults are also largely connected to minimizing the risk of hypoglycemia: deintensification of treatment goals is now recommended to reduce the risk of hypoglycemia, and simplification of complex treatment plans (especially insulin) is now recommended to reduce the risk of hypoglycemia and polypharmacy and decrease the burden of the disease if it can be achieved within the individualized A1C target.[105]

2022 National Standards for Diabetes Self-Management Education and Support

The *National Standards for Diabetes Self-Management Education and Support* provide guidance and evidence-based, quality practice for all diabetes self-management education and support (DSMES) services. The *National Standards* are issued by the American Diabetes Association (ADA) and the Association of Diabetes Care and Education Specialists (ADCES). The ADA and ADCES use the *National Standards* criteria in accrediting DSMES services. The *Standards* are required for Medicare-specific reimbursement. All payers are expected to review the *National Standards* and utilize them as "a tool to inform and modernize DSMES reimbursement requirements and to align with the evolving needs of people with diabetes [PWD] and physicians/other qualified health care professionals."[106]

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[103] American Diabetes Association. "Improving Care and Promoting Health in Populations: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-S001.

[104] American Diabetes Association. "Summary of Revisions: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi. org/10.2337/dc23-SREV.

[105] American Diabetes Association. "Older Adults: Standards of Care in Diabetes –2023." *Diabetes Care*. Vol. 46. Suppl. 1, January 2023, https://doi.org/10.2337/dc23-S013.

[106] American Diabetes Association and Association of Diabetes Care and Education Specialists. "2022 National Standards for Diabetes Self-Management Education and Support". *The Science of Diabetes Self-Management and Care*, sagepub.com/journals-permissions, doi: 10.1177/26350106211072203journals.sagepub.com/home/tde.

To reflect continuous changes in diabetes research and health care landscape, the *National Standards* are reviewed and revised approximately every five years by a task force composed of key stakeholders and experts within the diabetes care and education field. For each revision, the task force is charged with "reviewing the current National Standards for appropriateness, relevance, and scientific basis and making changes based on current evidence and expert consensus. In 2021, the group was tasked with reducing administrative burden related to DSMES implementation across diverse care settings."[107]

The 2022 update is believed to contain "some of the biggest changes since the National Standards were first introduced in 1984."[108] According to the ADCES chief science, practice, and education officer, Mr. Leslie Kolb, "the newly revised National Standards include revisions to help reduce administrative burden for the diabetes care and education specialist while allowing for more time and focus on providing person-centered education and care to the person with diabetes."[109]

The updated *National Standards* are streamlined, with the number of standards reduced from ten to six; qualifications and requirements for DSMES team members are defined more clearly; and stronger emphasis is put on personalizing DSMES and ensuring ongoing patient support and follow-up. Administrative burden is expected to be reduced thanks to a clear documentation structure for DSMES services that can be implemented in any paper or electronic system as well as an emphasis on the importance of communication and collaboration across the care team. In addition, the updates highlight the impact of organizational support for DSMES services and clarify issues regarding metrics and outcomes for continuous quality improvement.

The updated *Standards* re-emphasize the proven ability of DSMES to improve outcomes related to diabetes and beyond, from statistically significant and clinically meaningful improvement in A1C to reduced risk of all-cause mortality in type 2 diabetes patients. They cite several recent studies demonstrating improved clinical outcomes and quality of life while reducing hospitalizations and health care.[110]

On the basis on the current evidence, the 2022 *National Standards* focus on "the need to provide person-centered services that embrace cultural differences, social determinants of health, and the ever-increasing technological engagement platforms and systems."[111] The new *Standards* reassert the importance of the Chronic Care Model (CCM), which involves proactively managing chronic diseases such as diabetes. In addition, the 2022 *National Standards* endorse the Minimally

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[107] Ibid.

[108] American Diabetes Association. *ADA and ADCES Update National Standards for Diabetes Self-Management Education and Support: Press Release*, https://diabetes.org/newsroom/press-releases/2022/ada-and-adces-update-national-standards-for-diabetes-self-management-education-support.

[109] Ibid.

[110] See, e.g., Chrvala, Carole A., Sherr, Dawn and Ruth D. Lipman. "Diabetes Self-Management Education for Adults with Type 2 Diabetes Mellitus: A Systematic Review of the Effect on Glycemic Control." *Patient Education and Counseling*. June 2016. Vol. 99. No. 6, doi: 10.1016/j.pec.2015.11.003.

He, Xiaoqin et al. "Diabetes Self-Management Education Reduces Risk of All-Cause Mortality in Type 2 Diabetes Patients: A Systematic Review and Meta-Analysis." *Endocrine*, 2017. Vol. 55. No. 3, doi:10.1007/s12020-016-1168-2.

[111] American Diabetes Association and Association of Diabetes Care and Education Specialists. "2022 National Standards for Diabetes Self-Management Education and Support". *The Science of Diabetes Self-Management and Care*, sagepub.com/journals-permissions, doi: 10.1177/26350106211072203journals.sagepub.com/home/tde.

Disruptive Medicine (MDM), which is "a person-centered approach to health care that prioritizes the self-determined and self-chosen goals for life and health of PWD while minimizing the health care disruption on their lives. The goal of MDM is to maximize outcomes for PWD without additional burden; this approach can be incorporated with the CCM and diabetes self-management to reduce complexity."[112]

The *National Standards* are applicable to various care models, including solo practice, community, large practice, technology-enabled models of care as well as others, and they seek to delineate common features among effective and evidence-based DSMES strategies rather than recommend one particular approach. An important change in terminology compared to the last revision is replacing the title of the Diabetes Educator to the Diabetes Care and Education Specialist, defined as "a compassionate teacher and expert who, as an integral member of the care team, provides collaborative, comprehensive, and person-centered care and education for people with diabetes."[113]

The 2022 *Standards* identify several core content areas that a DSMES curriculum must include:

- Pathophysiology of diabetes and treatment options
- Healthy coping
- Healthy eating
- Being active
- Taking medication
- Monitoring
- Reducing risk (treating acute and chronic complications)
- Problem-solving and behavior change strategies.

There is also a reminder that "content must be prioritized to meet the individual person with diabetes's current needs and goals."[114]

In order to develop the most suitable plan to help a particular patient, the diabetes care and education specialist is encouraged to take into account a number of factors, including psychological adjustment: emotional response to the diabetes diagnosis, diabetes distress, family support, peer support, and other potential promoters and barriers. The *Standards* recommend DSMES follow-up and ongoing support. DSMES services can play a critical role in closing gaps in care by facilitating necessary referrals, for example, medical nutrition therapy, social work, psychology, pharmacy, lab tests, or specialists, or any other referrals beyond DSMES that can increase access to resources for the person with diabetes.

[112] Ibid.
[113] Ibid.
[114] Ibid.

The Pennsylvania Department of Health (DOH) is the leading agency in supervising programs aimed at prevention and management of diabetes. Most of the Commonwealth's diabetes programs are centralized within DOH to ensure that statewide efforts are coordinated. DOH works through Pennsylvania's healthcare system and coordinates its work with the other state departments, in particular the Office of Administration, to ensure diabetes prevention and management programs' coverage by the Pennsylvania Employees Benefit Trust Fund (PEBTF); the Department of Human Services Office of Medical Assistance Programs (OMAP) and Medicaid Managed Care Organizations, to collaborate in the Diabetes Self-Management Education and Support Program (DSMES) and to achieve Medicaid coverage for the Diabetes Prevention Program (DPP); with the Department of Aging, to promote prediabetes awareness and participation in DPP among older Pennsylvanians; and with the Department of Education, to offer recommendations and resources for the School Nurses Program.

This report will focus on two major programs currently administered by DOH: Diabetes Prevention Program (DPP) and Diabetes Self-Management Education and Support Program (DSMES). The report also contains an update on type 1 diabetes activity and funding allocation as well an overview of obesity as a significant risk factor of type 2 diabetes.

Diabetes Prevention Program (DPP)

The Diabetes Prevention Program (DPP) is an evidence-based lifestyle change intervention program for preventing or delaying type 2 diabetes among people of high risk. It is a long-term, structured program. Participants, who have prediabetes or are at risk of developing type 2 diabetes, meet in groups with a specially trained lifestyle coach once a week for six months (core phase) and then once or twice a month for six months (post-core maintenance period) to learn ways to incorporate healthier eating and moderate physical activity as well as problem-solving and coping skills into their daily lives. In order to accommodate various lifestyles, to respond to various clients' preference, and to improve attrition, DPP has lately utilized four delivery modes: in-person, online, distance learning, and a combination of these. The CDC Diabetes Prevention Recognition Program Standards and Operating Procedures require that the goals "should focus on moderate changes in both diet and physical activity to achieve one or more of the following outcomes: modest weight loss in the range of 5-7% of baseline body weight and 150 minutes of physical activity per week, or a modest reduction in hemoglobin A1C (HbA1C) of .2%".[115]

[115] *Centers for Disease Control and Prevention Diabetes Prevention Recognition Program Standards and Operating Procedures*, May 1, 2021, https://www.cdc.gov/diabetes/prevention/requirements-recoginition.htm.

The CDC established the CDC Diabetes Prevention Recognition Program Standards and Operating Procedures (DPRP) as part of the National Diabetes Prevention Program (National DPP) with the purpose of recognizing organizations that have demonstrated their ability to effectively deliver this evidence-based lifestyle change program (LCP). The recognition program "helps to assure that decisions about particular eligibility, program content, and data collection and reporting that could lead to health insurance benefits are based on accurate, reliable, and trustworthy information."[116] The DPRP ascertains the quality of recognized organizations and provides standardized reporting on their performance. A revised edition of the DPRP Standards was issued in 2021. It incorporates innovations from translational studies published since the original *Standards* release, best practices, eight years of program evaluation and DPRD data analysis as well as expert opinion.

The DPRP has three key objectives:

- Assure program quality, fidelity to scientific evidence, and broad use of the National DPP LCP throughout the United States;
- Develop and maintain a registry of organizations that are recognized for their ability to deliver an effective type 2 diabetes prevention National DPP LCP to people at high risk;
- Provide technical assistance to organizations to assist staff in effective program delivery and in problem-solving to achieve and maintain recognition status.[117]

Lifestyle changes have been shown to lower the risk for developing diabetes, as confirmed by several authoritative long-term studies. A 10-year follow-up Diabetes Prevention Program Outcomes Study (DPPOS) findings were that "participants who took part in the DPP Lifestyle Change Program continued to have a delay in the development of diabetes by 34 percent – and developed diabetes about 4 years later – compared with participants who took a placebo," and the impact among program participants ages 60 and older was even more pronounced: they had a delay in the development of diabetes by 49 percent.[118] In addition, participants in the DPP Lifestyle Change Program also improved their risk factors for cardiovascular diseases, such as high blood pressure and high cholesterol, and they achieved this goal with fewer blood pressure and cholesterol-lowering medications than study participants who took metformin or took a placebo.[119] A 15-year DPPOS follow-up has found that "lifestyle interventions or metformin significantly reduced diabetes development over 15 years"; specifically, during a mean follow-up of 15 years, diabetes incidence was reduced by 27 percent in the lifestyle intervention group and by 18 percent in the metformin group, compared with the placebo group, with declining between-group difference over time.[120] The results, thus, unequivocally support the importance of diabetes prevention and the effectiveness of lifestyle intervention in achieving this goal.

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[116] Ibid.
[117] Ibid.
[118] National Institute of Diabetes and Digestive and Kidney Diseases. *Diabetes Prevention Program (DPP)*, https://www.niddk.nih.gov/about-niddk/research-areas/diabetes/diabetes-prevention-program-dpp.
[119] Ibid.
[120] Diabetes Prevention Program Research Group. "Long-Term Effects of Lifestyle Intervention or Metformin on Diabetes Development and Microvascular Complications over 15-year Follow-up.: The Diabetes Prevention

CDC's Division of Diabetes Translation (DDT) funds state and local health departments to support programs and activities aimed at preventing or delaying the onset of type 2 diabetes and improving outcomes for people diagnosed with diabetes. The Pennsylvania Department of Health is supporting the implementation of the CDC National Diabetes Prevention Program by facilitating grant application submissions and working to increase the number of eligible Pennsylvania adults enrolled in the program through increasing program availability, awareness and promotion, coverage and reimbursement, along with screening, testing, and referrals.[121]

Increasing availability is attested to by the following achievements:

- ✓ Of Pennsylvania's 77 CDC-recognized organizations listed in the Diabetes Prevention Recognition Program (DPRP) Registry, 17 achieved full-plus recognition, 14 achieved full recognition, 21 achieved preliminary recognition, and 25 have pending recognition.

- ✓ 18,754 cumulative number of enrolled participants since 2018.

- ✓ Five Pennsylvania-based National DPP providers enrolled in Health Promotion Council's (HPC's) Umbrella Hub Organization, an arrangement that supports DPP suppliers with administrative functions including data collection, management, and submission, as well as access to HPC's billing and claims platform.[122]

Prediabetes and National DPP awareness:

- ✓ DOH collaborated with Feeding Pennsylvania to conduct, through a regional food bank, the Commission on Economic Opportunity (CEO)/Weinberg in Northeastern Pennsylvania, an online and on-site awareness initiative to promote participation in the National DPP among food bank clients. Three National DPP cohorts composed of food bank clients resulted from this collaboration.

- ✓ Latino Connection (LC) has had health-and-wellness mobile events and displayed ads on screens at corner stores across the Pennsylvania counties to educate low-income Latinx populations about prediabetes and the National DPP. These efforts led to the implementation of tow National DPP cohorts of Latino/Hispanic and African American participants.

Program Outcomes Study." *The Lancet Diabetes and Endocrinology*. Vol. 3. No. 11. November 2015, doi: http://dx.doi.org/10.1016/S2213-8587(15)00291-0.

[121] The following three subsections of the report are largely based on the information provided to the Joint State Government Commission by the Pennsylvania Department of Health in the personal e-mails from Ms. Barbara Orwan, Public Health Program Manager, DOH Bureau of Health Promotion and Risk Reduction, and Ms. Camelia Rivera, Public Health Program Administrator, DOH Bureau of Health Promotion and Risk Reduction, sent on July 3, July 31, and August 1, 2023.

[122] Additional information about the HPC activities can be found in a separate chapter of this report. See P. 69.

- Gains in screening, testing, and referrals include the following:

  - ✓ Quality Insights (QI) recruited and assisted 79 practices to implement systems to identify people with prediabetes and, as of June 2023, 31 practices were referring eligible patients to the National DPP.

  - ✓ HPC developed a referral hub in partnership with four referring health care organizations to strengthen bidirectional cohort pathways. Pottstown Medical Specialties, Inc. (PMSI) is one of the four organizations and also a National DPP provider that receives referrals from health care providers within the network and regularly starts new cohorts of participants every four to six weeks.

  - ✓ Harrisburg Area Young Men's Christian Association (YMCA) established a referral system for DPP in collaboration with three healthcare providers, one community partner and one Medicaid Managed Care Organization (MCO). The Highmark Wholecare MCO held a call campaign that resulted in 37 referrals.

- National DPP Coverage and Reimbursement:

  - ✓ The National DPP continues to be covered for state employees, retirees and their dependents, and also for Medicaid recipients under the HealthChoices agreement between Pennsylvania Medicaid and Pennsylvania Medicaid MCOs.

  - ✓ With funding and support from CDC, three Pennsylvania-based Medicare Diabetes Prevention Programs (MDPPs) were awarded funding and technical assistance by the National Association of Chronic Disease Directors (NACDD) under the MDPP Enrollment Project: The Sight Center of Northwest PA, Harrisburg Area YMCA, and The Gateway Pharmacy.

In the past few years, DOH improved and strengthened its relationships with more than 250 new and former partners, including the Pennsylvania Medical Society, the Pennsylvania Pharmacists Association, and the National Nurse-Led Care Consortium. Active engagement with a stakeholder network helps DOH to deliver the National DPP lifestyle change program across the state, to promote awareness and referral by clinical teams, to increase enrollment, and to achieve private and public coverage for this program. Under the awareness pillar of the National DPP Action Plan, clinicians were selected as the main audience and addressed with messages on the need for and benefits of screening and testing for prediabetes and making referrals for the National DPP.

In its implementation of the National DPP lifestyle change program, Pennsylvania addresses the following priority populations: rural population, Medicare and Medicaid beneficiaries, noninstitutionalized people with visual impairments or physical disabilities, African Americans, and Hispanics.

In Pennsylvania, Diabetes Prevention Program (DPP) work is completed under three funding sources:

1. Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (CDC-RFA-DP18-1815) -- $443,202

2. Preventative Health and Health Services Block Grant -- $790,000

3. State Funding $100,000

1. Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (CDC-RFA-DP18-1815)

Grantees and partners: Health Promotion Council (HPC), Quality Insights (QI), Pennsylvania Department of Aging, Pennsylvania Employees Benefit Trust Fund (PEBTF), Latino Connection, ProVention Health Foundation.

HPC Activities: manage existing partnerships with four healthcare organizations to continue to improve the referral workflows, including bidirectional referral workflows; support CDC-recognized organizations to enroll in Pennsylvania Medicaid and negotiate and contract with Medicaid MCOs to establish a sustainable Umbrella Hub Organization (UHO) through Medicaid billing; participate in collaborative meetings with one business coalition on health to promote coverage of the National DPP for private employers; and identify at least three community partners, champions, or influencers to promote the National DPP.

QI activities: complete baseline assessments of DPP referral processes at 79 recruited practices; engage two practices to create reports from the Electronic Health Records (EHR) identifying patients that qualify for DPP; ensure ongoing education on and integration of the Prediabetes Risk Test into clinical practice and facilitate referrals of patients to the National DPP; develop, update, and implement communication and education tools and processes with the recruited practices; develop patient-facing materials (such as rack cards or posters) to educate women with gestational diabetes about the risk of type 2 diabetes and the National DPP; and plan and hold a town hall meeting to promote National DPP enrollment and a one-hour webinar with CE/CME (Continuing Education/Continuing Medical Education) credits to educate healthcare providers on prediabetes screenings and referrals to the National DPP.

Pennsylvania Department of Aging activities: in partnership with Alosa Health, provide educational outreach (academic detailing) to approximately 500 practitioners to increase screening and prevention for prediabetes among Pharmaceutical Assistance Contract for the Elderly (PACE)-enrolled prescribers. This will allow for a wider range of older adults to be screened for prediabetes and encouraged to participate in a CDC-recognized lifestyle change program. [123]

[123] The Pennsylvania Department of Aging activities are covered in detail in a separate chapter of this report. See P. 53.

PEBTF: The DOH staff have quarterly meetings with the Pennsylvania Employees Benefit Trust Fund (PEBTF) and Office of Administration (OA) representatives to provide updates and collaborate on initiatives to, among other things, increase enrollment of eligible state employees in the National DPP.

LC activities: educate the low-income Latinx population about prediabetes and the National DPP through health and wellness events and through ads on screens at corner stores, disseminate the Prediabetes Screening Test at these events and refer eligible individuals to enroll in the National DPP.[124]

The DOH has allocated 1815 Grant funds to purchase a license of the Health and Lifestyle Training (HALT) diabetes software platform to deliver the National DPP online, and six providers have been enrolled and are delivering the National DPP on this platform.

2. Preventive Health and Health Services Block Grant

One of the *Healthy People 2030* objectives (D-D01) is to "increase the proportion of eligible persons completing Centers for Disease Control and Prevention (CDC)-recognized lifestyle change programs."[125] The grant is targeted towards this goal.

Grantees and partners: HPC, Tobacco Regional Primary Contractors (American Lung Association, Adagio Health, Erie County Department of Health), Pennsylvania Pharmacists Association (PPA), and Feeding Pennsylvania.

HPC: provide project management services for CDC-recognized National DPP organizations to deliver DPP at 14 cohorts across the Southeastern area of the state; provide organizations with technical assistance for enrollment as Medicare and Medicaid providers; plan and coordinate yearly three online or in-person meetings of lifestyle coaches in Pennsylvania to encourage relationship building and networking, share successes and best practices, and identify needs that can be met by DOH.

Tobacco Regional Primary Contractors: provide project management services for CDC-recognized National DPP organizations to deliver DPP across five health district areas and provide organizations with technical assistance for enrollment as Medicare and Medicaid providers.

Pennsylvania Pharmacists Association: provide program management services to increase capacity for the National DPP at pharmacy locations; support pharmacy staff to become lifestyle coaches and lifestyle coaches to become certified as master trainers; develop best-practice

[124] Latino Connection activities are covered in detail in a separate chapter of this report. See P. 73.

[125] *Healthy People 2030*, https://health.gov/healthypeople/objectives-and-data/browse-objectives/diabetes/increase-proportion-eligible-people-completing-cdc-recognized-type-2-diabetes-prevention-programs-d-d01.
This objective currently has developmental status, meaning it is a high-priority public health issue that has evidence-based interventions to address it, but doesn't yet have reliable baseline data. Once baseline data are available, this objective may be considered to become a core *Healthy People 2030* objective.

resources to assist pharmacies with the National DPP implementation; and conduct an Umbrella Hub feasibility study with pharmacies.

Feeding Pennsylvania: promote awareness of prediabetes and participation in the National DPP among low-income populations served by CEO/Weinberg Regional Food Bank. CEO has also received CDC recognition in 2021 as an in-person and online National DPP provider.

3. State Funding

The state funding was allocated to Harrisburg Area YMCA to provide DPP services at four sites (two in Harrisburg and two in Erie), including assistance with program promotion and marketing, as well as assistance with Welld, a web-based platform that supports referrals, program management, and claims reimbursement processes; provide technical assistance to other YMCA sites across the state with DPP implementation; enroll Medicare and Medicaid recipients in DPP and assist the sites, as applicable, with implementing and developing billing processes with private and public health insurers; collaborate with two healthcare providers, one community partner and one Medicaid MCO to enhance the referral system developed in previous years; implement bidirectional referral processes and incorporate new tools and procedures in the existing referral system. Harrisburg Area YMCA is both a Medicaid and Medicare DPP supplier.[126]

Diabetes Self-Management Education and Support (DSMES)

The Department of Health DSMES initiatives encourage people with diabetes to receive diabetes self-management education accredited by the Association of Diabetes Care and Education Specialists (ADCES) and/or recognized by the American Diabetes Association (ADA). DSMES 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. The process incorporates the needs, goals, and life experiences of the person with diabetes and is guided by evidence-based standards. Effective DSMES, based on a personalized and holistic approach, becomes a significant contributor to clinical improvement and long-term positive health outcomes.

In Pennsylvania, Diabetes Self-Management Education and Support (DSMES) work is completed under two funding sources:

1. Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (DP18-1815).[127]

2. Preventive Health and Health Services Block Grant.[128]

[126] YMCA activities are covered in detail in a separate chapter of this report. See P. 67.
[127] https://www.cdc.gov/rfa-dp18-1815/index.html.
[128] https://www.cdc.gov/phhsblockgrant/index.htm.

1. **Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (DP18-1815)**

- 4.75-year grant, beginning September 30, 2018 and ending June 29, 2023

- Funding for DSMES Contractors:
  - SFY 2022-2023 - $357,500

- Contractors for DSMES:
  - Health Promotion Council (HPC)
  - Pennsylvania Pharmacists Association (PPA)
  - Quality Insights (QI)
  - Latino Connection (LC)
  - Funding also supports a portion of 1815 evaluation efforts provided by Evaluation Institute for Public Health, University of Pittsburgh, and Behavioral Risk Factor Surveillance System (BRFSS) Diabetes questions

- Activities:

The DOH is implementing evidence-based strategies to contribute to the management of diabetes in high-burden populations in Pennsylvania. Strategies improve care and management of people with diabetes by increasing access to and use of DSMES programs and medication management processes.

Through the Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (1 NU58DP006541) (1815) cooperative agreement from the CDC, the Diabetes Prevention and Control Program (DPCP) is working, in partnership with the Cardiovascular Disease Program, to improve access to and participation in American Diabetes Association (ADA)-recognized and Association of Diabetes Care and Education Specialists (ADCES)-accredited DSMES programs in underserved areas and increase engagement of pharmacists in the provision of medication management or DSMES for people with diabetes.

The DOH is collaborating with the HPC and the PPA to increase access to recognized/accredited DSMES programs by providing technical assistance to programs seeking to achieve recognition or accreditation. Additional technical assistance is provided to support program sustainability. The DOH is also working with the PPA to identify how to incorporate medication management for people with diabetes into pharmacists' patient care process collaborations and best-practice protocols.

Through work with QI, the DOH is working to increase participation in recognized/accredited DSMES programs by educating providers, promoting DSMES within communities, and improving referral processes and networks. QI will engage health systems, independent practices, and electronic health record (EHR) vendors to assist in completing this work.

The DOH is working with LC to raise awareness of DSMES among the Latinx population through on-site educational outreach and message delivery within communities.

2. Preventive Health and Health Services Block Grant

- Funding for DSMES Contractors:
  - SFY 2022-2023 - $178,550
  - SFY 2023-2024 - $148,550

- Contractors for DSMES:
  - PPA
  - Multi-Cultural Health Evaluation & Delivery System (MHEDS)
  - Special Olympics Pennsylvania (SOPA)

- Activities:

Funding from the Preventive Health and Health Services Block Grant (PHHSBG) supports a comprehensive approach, integrating community-level efforts to strengthen foundational activities from 1815.

  - PPA – The DOH is building on work in 1815 to increase access to DSMES by supporting pharmacist-led DSMES program sustainability. Through the PPA, the DOH will create and present programming to pharmacy-led ADCES-accredited or ADA-recognized DSMES programs to support program sustainability. Programming may be in-person or virtual and will focus on topics identified by the pharmacists. Topics may include recruitment of participants, retention of participants, and/or medical insurance billing practices.

  - Multi-Cultural Health Evaluation & Delivery System – The DOH is collaborating with MHEDS to provide culturally tailored DSMES to people with diabetes from underserved populations. Underserved populations may include Asian (Bhutanese-Nepali, Burmese); Middle Eastern (Iraqi, Syrian); and African (Somali, Congolese) resettled refugees; Latinx; and black populations. Where necessary, cohorts will be educated with the assistance of bi-lingual cultural navigators.

  - Special Olympics Pennsylvania – The DOH is working with Special Olympics Pennsylvania to increase awareness of DSMES and to provide outreach to adult athletes in the Special Olympics program who also have diabetes. The purpose of this activity is to increase participation in DSMES for people with both diabetes and intellectual disabilities and to improve health outcomes for this disparate population.

Recently, the DOH has gained access to additional funding for its diabetes prevention and control programs, thanks to a new diabetes cooperative agreement. The DPCP applied for funding or a new 5-year cooperative agreement from CDC for state fiscal years 2023-2028.

> This new funding opportunity (NOFO) seeks to decrease risk for type 2 diabetes among adults with prediabetes and improve self-care practices, quality of care, and early detection of complications among people with diabetes. Additionally, this NOFO will support implementation of evidence-based, family-centered childhood obesity interventions as a type 2 diabetes risk reduction strategy. All work supported under this NOFO will focus on reducing health disparities for priority populations defined as those who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.[129]

To complete the application process is always a substantial undertaking. Gaining access to this new funding source is a significant achievement on the part of the DOH, making these important programs available to many citizens of the Commonwealth, especially those who might otherwise not have a chance of benefiting from participation in them.

Cooperative agreement: A Strategic Approach to Advancing Health Equity for Priority Populations with or at Risk for Diabetes (CDC-RFA-DP-23-0020)[130]

Total Funding – $1,250,000 Annually

Anticipated funding for contractors – $753,020

DPP will collaborate with

- QI – to work with 20 recruited practices and other clinical and community partners to generate referrals of priority populations to the National DPP lifestyle intervention and the Medicare Diabetes Prevention Program (MDPP).

- HPC – to implement clinical and community-based referral processes that maximize enrollment and retention in the National DPP of priority populations: Medicare and Medicaid recipients, Black, Hispanic and LGBTQIA+ persons, non-English speaking people, people with undocumented status, and those living with disabilities.

- Pennsylvania Department of Aging – to provide educational outreach (academic detailing) to approximately 400 practitioners; review best practices for continued identification of eligible older adult patients and referral to the National DPP and/or MDPP; connect interested providers with quality improvement initiatives conducted by QI.

- ProVention Health Foundation – to promote and manage the Health and Lifestyle Training (HALT) virtual platform in Pennsylvania to deliver the National DPP online

[129] *A Strategic Approach to Advancing Health Equity for Priority Populations with or at Risk for Diabetes*, https://www.cdc.gov/diabetes/funding-opportunity/NOFO-CDC-RFA-DP23-0020.html.
[130] Ibid.

to support enrollment to priority populations, particularly people belonging to racial and ethnic minority groups, people who are uninsured, and people with lower incomes.

- PPA – to establish an UHO with one subsidiary pharmacy, to offer the National DPP lifestyle intervention to priority populations, particularly Medicaid and Medicare beneficiaries. Equitable Cities (EC) – to train a minimum of 75 DPP providers and lifestyle coaches on social determinants of health and effective high-need population outreach and engagement practices.

In its various statewide activities, DSMES will collaborate with

- HPC – to increase access to and participation in DSMES programs and complementary diabetes support programs in high-need counties and populations. HPC will provide technical assistance to build culturally inclusive, tailored outreach and programming, bidirectional referrals, communication practices, and social determinants of health (SDOH) referrals.

- QI – to promote and increase referrals to DSMES programs and complementary diabetes support programs near recruited healthcare practices and other clinical and community partners in high-need counties.

- PPA – to enhance team-based care for people with diabetes. PPA will work with existing statewide.

- DSMES programs to implement business plan strategies that will support sustainable billing services and will train pharmacy personnel on SDOH.

Additional Activities:

- State Alliance of YMCAs – to implement, spread and sustain Healthy Weight and Your Child (HWYC), a 25-session evidence-based, family-centered childhood obesity intervention. HWYC focuses on nutrition education and physical activity to encourage healthier eating habits and an active lifestyle to reach a healthy weight.

- EC – to assess capacity related to SDOH and existing strategies to identify, reach and engage high-need populations.

- Hospital and Healthsystem Association of Pennsylvania (HAP) – to expand and scale the Collaborative Opportunities to Advance Community Health (COACH) initiative to continue addressing food and nutrition security, as well as implement trauma-informed and healing care approaches.

- Public Health Management Corporation (PHMC) – to conduct overall program evaluation and to complete a social determinants of health landscape assessment for people with or at risk of diabetes.

- HPC – to assist in establishing social determinants of health planning and implementation taskforce to address identified challenges for diabetes educators and for people with or at risk of diabetes.

Type 1 Diabetes Activity

Funding sources for 2022-2023:
State Funding $100,000

This funding was allocated to Cedar Crest College to develop and implement awareness, education, and outreach activities targeting key populations involved in the recognition and diagnosis of type 1 diabetes and diabetic ketoacidosis within the Lehigh Valley.

During February 1, 2022 – June 30, 2022, Cedar Crest College developed and launched, in collaboration with a parent advocate and subject matter experts, three main promotional and educational events and activities:

1. The Better Kid Care Module Part Three – Peer Allies for Children and Youth with Diabetes, provided free of charge to Pennsylvania residents to bring greater awareness and support for type 1 Diabetes, and available at the following link: https://extension.psu.edu/programs/betterkidcare/lessons/peer-allies-for-children-and-youth-with-diabetes

2. Day Camp for Youth with type 1 Diabetes, held in conjunction with the Mayfair Festival of the Arts on the campus of Cedar Crest College on Sunday, May 29, 2022. "CampConnecT1D" video footage was captured for use in the Better Kids Care module and other forms of educational outreach to the community.

3. Education Outreach – "CampConnecT1D" video footage was captured for use in the third Better Kids Care module and other forms of educational outreach to the community, including through the resource website: https://www.cedarcrest.edu/type1diabetes/

From February 1, 2023 to June 30, 2023, Cedar Crest College developed and launched, in collaboration with a parent advocate and subject matter experts, three main promotional and educational events and activities:

1. A multidisciplinary educational series for youth with type 1 diabetes held on the campus of Cedar Crest College during the months of March and April 2023;
2. A Camp ConnecT1D information tent at the Mayfair Festival of the Arts in May 2023; and
3. An online educational outreach through the comprehensive website developed in previous years and through social media.

Obesity Prevention and Wellness Activities

Obesity is considered to be a risk factor for several additional diseases or health conditions. These include type 2 diabetes, cardiovascular disease, obstructive sleep apnea, non-alcoholic fatty liver disease, arthritis, infertility, and several types of cancer. The risk of developing many of these conditions and the severity of many weight-related complications can be reduced with weight loss, even if obesity remains. Most medical organizations recognize a 5–10 percent weight loss as "clinically significant," meaning that a weight loss of this size may be sufficient to show a meaningful improvement in health.

Obesity is a complex chronic metabolic disease that results from a combination of causes and contributing factors. Effective strategies to prevent and address obesity involve changes in policy, healthcare systems, and environment that can support healthy behaviors. These may include increasing access to healthy foods, reducing health disparities, and developing communities that support safe and accessible physical activity and active transportation.

Evidence-based guidelines recommend three categories of evidence-based options to treat obesity: lifestyle-based treatments, like the National Diabetes Prevention Program or Healthy Weight and Your Child; medications; and bariatric surgery.

The DOH Bureau of Health Promotion and Risk Reduction has an Obesity Prevention and Wellness Section, dedicated to the coordination of various evidence-based strategies aimed at curbing this important risk by facilitating access to nutritious foods and safe physical activity.[131]

Obesity Prevention & Wellness strategies are supported by four funding sources:

1. State Physical Activity and Nutrition Program (CDC-RFA-DP18-1805) – $419,364

2. Preventive Health and Health Services Block Grant – $1,136,984

3. CDC Federal Funding through the National Association of Chronic Disease Directors (NACDD), Building Resilient Inclusive Communities – $39,500

4. Improving Student Health and Academic Achievement through Nutrition, Physical Activity and the Management of Chronic Conditions in School (CDC-RFA-DP23-0002) – $225,382

[131] This subsection of the report is largely based on the information provided to the Joint State Government Commission by the Pennsylvania Department of Health in the personal e-mail from Ms. Tiffany Bransteitter, Obesity Prevention and Wellness Section Chief of the DOH Bureau of Health Promotion and Risk Reduction, sent on August 4, 2023.

1. PA Healthy Pantry Initiative (HPI)

Grantees and partners:

Feeding Pennsylvania, Central PA Food Bank, Philabundance, Greater Pittsburgh Community Food Bank, Second Harvest Food Bank of Northwest Pennsylvania, Public Health Management Corporation

Strategy:

The PA Department of Health partners with Feeding Pennsylvania to increase access to healthy food and beverage options. Feeding Pennsylvania and its member food banks increase healthy inventory available to food pantries. A registered dietitian with Feeding Pennsylvania and a nutrition educator in the three participating food banks guide pantries through phases, which include assessing pantries to determine needs, using marketing materials and layout changes to nudge clients toward healthier choices, increasing healthier inventory, upgrading or adding materials to display and store healthier options, and offering hands-on nutrition education with pantry clients. Feeding Pennsylvania created its first nutrition policy in 2019 and is updating the policy now. Participating food banks continue to create and update their nutrition policies to emphasize the importance of healthy options, which will sustain the healthy changes long-term.

Currently, 120 food pantries are participating in the program. The Public Health Management Corporation (PHMC) provides evaluation support for this strategy.

In 2021, under the Building Resilient Inclusive Communities (BRIC) grant, PA HPI began working to increase cultural inclusivity. SEAMAAC, a support and service organization for marginalized communities, joined the PA HPI partnership to survey pantry clients in Philadelphia on cultural needs and preferences. SEAMAAC used data gathered from the survey to review PA HPI materials through a health equity lens and put forth recommendations to widen the program's reach to diverse communities. As a result, new educational materials for food pantry staff, such as a resource explaining food packaging dates and recommendations for special diets, were created. In addition, existing produce cards, which were found to be relevant to people from all cultures, were translated into four additional languages: Russian, Ukrainian, Arabic and Mandarin. In 2022, PA HPI created a Health Equity Food Sourcing Task Force with BRIC funding. The task force, made up of all nine Feeding Pennsylvania member food banks and other food sourcing partners, met six times in 2022 to achieve common goals of increasing cultural competence and identifying strategies for procuring culturally familiar foods. Each food bank also created its own action plan to work toward increased cultural competence, depending on where they were with the work. The task force continues to meet quarterly.

The program aims to meet the Healthy People 2030 Objective NSW-03: Reduce the proportion of adults with obesity.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2022/2023 state fiscal year: $304,606 National Association of Chronic Disease Directors (NACDD), Building Resilient Inclusive Communities; 2022 calendar year: $30,000

2. Good Food Healthy Hospitals (GFHH)

Grantees and partners:

Philadelphia Department of Public Health (PDPH), the Hospital and Healthsystem Association of PA (HAP), The Food Trust, Pennsylvania Healthy Pantry Initiative (HPI), Healthcare Without Harm, and Public Health Management Corporation

Strategy:

Good Food, Healthy Hospitals (GFHH) is an initiative transforming Pennsylvania's hospital food environments by bringing healthier options to thousands of employees, visitors, and patients every day. The DOH partners with PDPH and HAP to increase the availability of and access to healthier food options by encouraging hospitals to adopt food service standards. The DOH and partners have scaled this initiative to hospitals and health systems across the Commonwealth. Under the guidance of a healthy food in healthcare specialist (who is a registered dietician), participating hospitals and health systems pledge to increase the availability of healthy foods across five different food domains: purchased foods and beverages, cafeteria meals, patient meals, catering, and vending. As a hospital continues to adopt standards, its GFHH designation increases from Participant (1 domain) up to Platinum (all 5 domains). Participating hospitals and health systems receive technical assistance on nutrition, menu planning, and food service guidelines (FSG) implementation. Participating food service stakeholders then adopt food service guidelines to create healthier food environments and attend task force meetings to collaborate with other participating hospitals. Beginning this year, participating hospitals are strongly encouraged to initiate a program that addresses nutrition security and/or health equity. Options include collaboration with farmers and local vendors to expand access to local foods and investment in local food systems, establishing or expanding upon an existing "healthy food prescription" or voucher program, healthy food pantry, or a collaboration with the PA HPI. GFHH currently has 51 hospitals in 11 health systems participating. The Public Health Management Corporation provides evaluation support for this strategy.

The program aims to meet the Healthy People 2030 Objective NWS-03: Reduce the proportion of adults with obesity.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2022/2023 state fiscal year: $89,105

State Physical Activity and Nutrition Program (SPAN) from the Centers for Disease Control and Prevention; 2022/2023 grant year: $50,000

3. Food Service Guidelines in Community Settings

Grantees and partners:

Erie County Department of Health, Public Health Management Corporation

Strategies:

The DOH partners with the Erie County Department of Health to support the implementation of food service guidelines in community settings in Erie County. In June 2022 Erie County adopted the American Heart Association Food Service Guideline policy. The Erie County Department of Health provides technical assistance to food service sites to implement this policy; it monitors and assesses for compliance. The Erie County Department of Health also convenes a Food Policy Council to advance food service guidelines in Erie County, in addition to other food policy priorities. The Public Health Management Corporation provides evaluation support for this strategy.

Funding:

State Physical Activity and Nutrition Program (SPAN) from the Centers for Disease Control and Prevention; 2022/2023 grant year: $21,000

4. Breastfeeding

Grantees and partners: Pennsylvania Chapter of the American Academy of Pediatrics (PA AAP), Pennsylvania Breastfeeding Coalition (PABC), Public Health Management Corporation

Strategy:

The DOH is partnering with PA AAP to implement the Community-Based Breastfeeding-Friendly Practice Program "BEST Plus" to provide primary care practices, including pediatric, OB-GYN and Pennsylvania's Community Health Centers (or Federally Qualified Health Centers - FQHCs) with a structured program to assist with implementation of high-quality breastfeeding continuity of care. BEST Plus is a quality improvement program designed to improve the quality of care for breastfeeding during the postpartum period and beyond. The program helps pediatric, OB-GYN and family practices across Pennsylvania improve their knowledge of breastfeeding and delivery of evidence-based care, breastfeeding benefits and best practices and is designed to improve breastfeeding duration and exclusivity rates in their communities. This approach incorporates a 10-step curriculum toward a breastfeeding-friendly practice (based on the World Health Organization's *Ten Steps to Successful Breastfeeding*), making success more achievable. The program includes education, technical assistance, and resources to enable participating

practices to progress through the 10 steps and obtain "Breastfeeding-Friendly Practice" status. In state fiscal year 2022/2023, seven practices participated in the program, which included a Maintenance of Certification Program for affiliated pediatricians. Outcomes reported will include “Breastfeeding Friendly” achievement by practices, program growth, statewide impact, policy development, and innovative practices. Additional qualitative data in the form of case studies may be collected for the purposes of evaluation and participant education and motivation.

Breastfeeding work focused on addressing disparities included a pilot program funded by the Association of State and Territorial Health Organizations (ASTHO), which leveraged Block Grant funding to initiate Breastfeeding Family Friendly Communities (BFFC) in the cities of Williamsport and Chester, two municipalities with low overall breastfeeding rates and documented Black breastfeeding disparities. UPMC Williamsport’s pediatric practice participated in BEST Plus and obtained Breastfeeding-Friendly designation. (Crozer-Chester’s pediatric practice obtained Breastfeeding-Friendly designation in 2021.)

Supplemental SPAN funding to address disparities in breastfeeding support was also awarded for FY 2022. Four regions (Erie, Luzerne and Schuylkill, Mercer and Lawrence, and Washington, Fayette and Greene Counties) were selected based on 2017-2019 breastfeeding initiation data, racial disparity gaps, consideration of the total population of women of reproductive age (15-44), and existing support infrastructure. As regions were examined, a distinct need in rural areas was acknowledged. In collaboration with partners PA AAP and PHMC, a secondary data analysis and needs assessment survey are currently being conducted in the four regions; needs assessments include key informant interviews and breastfeeding provider surveys directed toward parents and lactation support providers. Data will be summarized and shared to support development of local plans to address barriers to breastfeeding support with a focus on policy, systems, and environmental (PSE) changes. The Public Health Management Corporation provides evaluation support for breastfeeding strategies.

The program aims to meet the Healthy People 2030 Objective MICH-15: Increase the proportion of infants who are breastfed exclusively through age 6 months.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2022/2023 state fiscal year: $96,135

State Physical Activity and Nutrition Program (SPAN) from the Centers for Disease Control and Prevention; 2022/2023 grant year: $125,296

5. Physical Activity Access

Grantees and partners:

Pennsylvania Downtown Center (PDC), Pennsylvania Department of Transportation (PennDOT), Pennsylvania Department of Conservation and Natural Resources (DCNR), Public Health Management Corporation

Strategy:

The DOH partners with the Pennsylvania Downtown Center to connect activity-friendly routes to everyday destinations that make it safe and convenient for people of all abilities to walk, run, bike, skate, or use wheelchairs. Through the WalkWorks program, a competitive application is released to municipalities and similar entities to apply to receive funding and technical assistance for the development of an active transportation plan that will guide the establishment of activity-friendly routes that connect to everyday destinations. A minimum of eight communities are selected to develop a plan or policy from October through the following September. PDC provides ongoing technical assistance, resources, and other requested information, as needed, throughout the duration of the funding period. To date, the program has supported the development and adoption of 43 plans or policies, with 7 more expected to be adopted by September 30, 2023. The Public Health Management Corporation provides evaluation support for this strategy.

The program aims to meet the Healthy People 2030 Objective NWS-03: Reduce the proportion of adults with obesity.

In 2021, WalkWorks began to promote healthy living and reduce social isolation during the COVID pandemic through the Building Resilient Inclusive Communities (BRIC) Program. WalkWorks conducted multiple focus groups to explore ways to increase access to WalkWorks, with a goal of addressing obstacles and making the process more equitable and inclusive for all communities. The focus group findings identified 11 recommendations. Since then, WalkWorks has been focused on best practices to apply those recommendations in a community capacity-building action plan, focused on building active transportation capacity in vulnerable communities and to develop a plan to enhance equity and anti-racism throughout the WalkWorks program.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2022/2023 state fiscal year: $257,135

State Physical Activity and Nutrition Program (SPAN) from the Centers for Disease Control and Prevention; 2022/2023 grant year: $66,068

National Association of Chronic Disease Directors (NACDD), Building Resilient Inclusive Communities; 2022 calendar year: $12,750

6. Early Care and Education

Grantees and partners:

Tuscarora Intermediate Unit (TIU), PA AAP Early Childhood Education Linkage System (ECELS), University of North Carolina (UNC), Pennsylvania Departments of Education and Human Services, Office of Childhood Development and Early Learning, Keystone Kids Go, Public Health Management Corporation

Strategy:

The Pennsylvania Nutrition and Physical Activity Self-Assessment for Child Care (PA NAPSACC) is a continuous quality improvement (CQI) process that is focused on obesity prevention practices and policies in early childhood education (ECE) settings. The program's purpose is to "combat obesity and food insecurity by equipping ECE programs with the knowledge and resources to implement policies and practices that increase access to healthy food and eating practices and physical activity opportunities for young children."[132] The DOH partners with TIU and ECELS to implement PA NAPSACC with a cohort of 100 early childhood education (ECE) programs annually. The PA NAPSACC CQI process uses the nationally recognized Go NAPSACC tool, developed by UNC to guide participating ECE programs through self-assessment, action planning, implementation, policy development, re-assessment, and reflection. Current funding supports 100 mini grants annually for participants.

From years 1 to 4 of the SPAN grant, the NAPSACC program has reached 285 ECE programs from 52 counties, involving over 20,000 children. Over 200 (over 70 percent) of participating ECE programs either established or enhanced their nutrition and physical activity policies.[133]

The implementation of obesity prevention strategies at the individual ECE level is enhanced by the DOH through support of the Keystone Kids Go (KKG) stakeholder group and efforts to embed high-impact obesity prevention standards into state ECE systems and system supports. KKG is one of the longest running statewide ECE partner networks in the country – 20 years strong. Members represent state agencies such as the Pennsylvania Departments of Education (PDE) and Human Services (DHS), PA AAP Early Childhood Education Linkage System (ECELS), Office of Child Development and Early Learning (OCDEL), Penn State Better Kid Care (BKC), Penn State Cooperative Extension and Tuscarora Intermediate Unit (TIU) as well as many other organizations with an interest in early childhood education. Over the past four years, KKG has utilized CDC's Spectrum of Opportunities Quick Start Action Guide to develop a results-oriented and equity-driven action plan. These activities aimed to harness a diversity of stakeholder expertise and ensure equitable access to obesity prevention resources and action planning opportunities. Several notable outcomes include:

[132] Pennsylvania Department of Health. *Building and Sustaining Healthy Policies: Statewide Impact of the PA NAPSACC Program Through the SPAN Grant*. May, 2023, statewide_impact_of_the_pa_napsacc_program.pdf (keystonekidsgo.org).
[133] Ibid.

- Providing Equity, Diversity and Inclusion training to KKG Workgroup members through the Institute for Public Health Innovation;

- Incorporating all 9 national high-impact obesity prevention standards from Caring For Our Children into an infant feeding module for CACFP sponsors;

- Conducting "Tools for Promoting High-Impact Obesity Prevention Practices in Early Childhood Education: An Integrated Approach to Coaching" training for statewide technical assistance providers in Early Learning Resource Centers;

- Partnering with OCDEL to integrate CACFP participation in Keystone STARS, Pennsylvania's Quality Rating Improvement System - STAR 3 and 4 programs participating in CACFP can earn bonus points to increase overall quality ratings; and

- Creating a CACFP story map in partnership with Child Care Aware to identify areas of under-utilization and help partners identify potentially eligible programs to encourage them to participate in an effort to increase access to nutritious meals and snacks and curb disparities in food access across Pennsylvania.

The Public Health Management Corporation provides evaluation support for this strategy.

The program aims to meet the Healthy People 2030 Objective NWS-04: Reduce the proportion of children and adolescents with obesity.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2022/2023 state fiscal year: $267,003

State Physical Activity and Nutrition Program (SPAN) from the Centers for Disease Control and Prevention; 2022/2023 grant year: $80,000

7. School-Based Initiatives

Grantees and partners:

PA School Wellness, Slippery Rock University; University of Pittsburgh Office of Child Development; Erie's Public Schools; Pennsylvania Society of Health and Physical Educators (SHAPE PA); Intermediate Units (IU); Pennsylvania Farm to School Network, including Pennsylvania Departments of Education (PDE) and Agriculture (PDA), Office of Child Development and Early Learning (OCDEL), The Food Trust, and other statewide organizations representing farm-to-school interests.

Strategy:

Implementing the Whole School, Whole Community, Whole Child (WSCC) framework in Pennsylvania at a statewide level by offering professional development, training and technical assistance on a variety of school health topics as guidelines to create healthier food environment and emphasize the importance of evidence-based school policies and practices. Using the WSCC model in schools provides all students equitable opportunity to attain the knowledge, skills, and services needed to achieve the highest level of health and academic success. WSCC is implemented at the local level in partnership with Erie's Public Schools and supports a district Wellness Coordinator to oversee assessment, planning and implementation of system changes related to nutrition, comprehensive school physical activity programs and management of chronic health conditions among students. The WSCC model is CDC's framework for addressing health in schools. The WSCC model is student-centered and emphasizes the role of the community in supporting the school, the connections between health and academic achievement. The DOH also supports the administration of the Pennsylvania Farm to School Network and recent strategic planning efforts to grow the Network capacity by expanding membership and collaborating with partners to promote and implement existing Farm to School initiatives.

Recent outcomes of this work include

- Collaborating with PA Department of Agriculture to administer the Farm to School Grant Program; and

- Building capacity for Health and/or Physical Educators (H/PE) in two school districts to develop leadership skills and become agents for change in their school buildings. Slippery Rock University's (SRU) School Wellness Education Department provides training and technical assistance to H/PE staff in the districts. Training includes curriculum review and assisting districts with transitioning from a traditional physical education model to a school wellness education model, including strategies that schools can use to provide a greater focus on lifelong physical activity and student well-being.

The University of Pittsburgh, Office of Child Development provides evaluation support for this strategy.

The program aims to meet the Healthy People 2030 Objective NWS-04: Reduce the proportion of children and adolescents with obesity.

Funding:

Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention; 2023/2024 state fiscal year: $212,625

Improving Student Health and Academic Achievement through Nutrition, Physical Activity and the Management of Chronic Conditions in School (CDC-RFA-DP23-0002; 2023/2024 state fiscal year: $225,382

8. Building Resilient Inclusive Communities (BRIC)

Grantees and partners:

PA Department of Aging; Equitable Cities; SEAMAAC; Feeding PA; Pennsylvania Downtown Center; Philadelphia Department of Public Health; Public Health Management Corporation (PHMC)

Strategy:

The National Association of Chronic Disease Directors (NACDD) provides BRIC funding to 20 states to promote healthy living and reduce social isolation. The grant was awarded in January 2021 and renewed for a second calendar year, 2022.

Through BRIC, strategies are implemented at the state and community level, specifically in Philadelphia to build sustainable systems and programming to improve safe access to physical activity, promote healthy eating through improved nutrition security, and reduce social isolation in older adults.

Core values of BRIC include a specific focus on reducing health inequities, promoting social justice for marginalized communities and people most impacted by the COVID-19 pandemic, and building state and community resiliency.

Nutrition Security: The DOH in collaboration with SEAMAAC, Feeding PA and PHMC evaluated PA HPI materials, such as recipe cards, to ensure cultural relevance to the populations being served. As a result, PA HPI materials were updated or created to meet more diverse communities. With BRIC funding, the DOH started a Health Equity Food Sourcing Task Force in 2022, which continues with PA HPI block grant funding. The task force, made up of all nine Feeding Pennsylvania food banks and other food sourcing partners, addresses barriers to providing culturally familiar foods for pantry clients.

Physical Activity Access: DOH is utilizing BRIC resources to further support equity and inclusion in the development of a community capacity-building plan that enables the DOH to better reach vulnerable communities. Reaching priority communities has been challenging as they have limited resources and capacity to apply for WalkWorks grants. Community input was gathered to develop the community capacity building plan and several short- and long-term strategies to increase reach to vulnerable communities have been implemented. The DOH is working with several communities who either plan to implement or who have already implemented demonstration projects to improve bicycle and pedestrian infrastructure, with a goal of creating a video that promotes the benefits of active transportation. The DOH is also committed to enhancing equity and anti-racism in WalkWorks, further enhancing the inclusion of diverse populations in development of community plans and policies.

Social Connectedness: The DOH partnered with the Department of Aging (PDA) to support equity and social connectedness objectives in the State Plan on Aging. Training was provided to Area Agencies on Aging, Health & Wellness Programs on social determinants of health and its application when engaging with underserved, non-traditional aging populations.

The DOH partners with the Philadelphia Department of Public Health (PDPH) to implement BRIC strategies in Philadelphia. Community-level activities focus on increasing access and connectivity to safe, healthy, and welcoming environments by supporting the co-creation of inclusive public spaces. PDPH implements these strategies in collaboration with many partners, including Philadelphia Parks and Recreation, Fairmount Park Conservancy, and others in communities in West Philadelphia. PDPH is enhancing partnerships to intersect all components of nutrition security and physical activity access strategies with social connectedness strategies. Community members are engaged to inform community investments.

The Public Health Management Corporation provides evaluation support for this strategy.

Funding:

National Association of Chronic Disease Directors (NACDD), Building Resilient Inclusive Communities; 2023 calendar year: $39,500

The mission of the Pennsylvania Department of Aging (PDA) is to promote independence, purpose and well-being in the lives of older adults through advocacy, service and protection.[134]

PDA will strategically focus its efforts on the following five overarching goals in order to position Pennsylvania to meet the needs of and enhance services for older adults:

> *Goal One*: Strengthen aging network's capacity, promote innovation and best practices, and build efficiencies to respond to the growing and diversifying aging population.
>
> *Goal Two*: Improve services for older adults and the ability to advocate for them by using evidence-informed planning, committing to data integrity, and being accountable for results.
>
> *Goal Three*: Establish and enhance efforts to support healthy living, active engagement and a sense of community for all older Pennsylvanians.
>
> *Goal Four*: Emphasize a citizen-first culture that provides outreach, embraces diversity, and honors individual choice.
>
> *Goal Five*: Advocate for the rights of older adults and ensure their safety and dignity by raising awareness of and responding effectively to incidences of abuse, injury, exploitation, violence and neglect."[135]

Health & Wellness Program

The Health & Wellness Program operates under the auspices of the PDA's Education and Outreach Office (EOO). The EOO oversees health and consumer education programs initiated by PDA, including the Pennsylvania Medicare Education and Decision Insight, or PA MEDI, and the Health & Wellness Program.[136]

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[134] Pennsylvania Department of Aging. 2020-2024 State Plan, https://www.aging.pa.gov/publications/state-plan-on-aging/Documents/2020-2024_State_Plan_on_Aging.pdf.

[135] Pennsylvania Department of Aging. 2020-2024 State Plan, https://www.aging.pa.gov/publications/state-plan-on-aging/Documents/2020-2024_State_Plan_on_Aging.pdf.

[136] This chapter of the report is largely based on the information prepared by Ms. Katrina Kyle, Health & Wellness Statewide Coordinator of the Department of Aging Education and Outreach Office; Ms. Theresa Brown, Chief for Research and Evaluation, Bureau of Pharmaceutical Assistance; and Ms. Susan Neff, Aging Services Supervisor, and provided to the Joint State Government Commission by the Pennsylvania Department of Aging in a personal e-mail on July 24, 2023.

The role of PDA's Health & Wellness Program is to

- Research and interpret federal guidelines regarding the Older Americans Act (OAA) Title IIID funding for disease prevention and health promotion services;
- Coordinate efforts among community resources;
- Act as a catalyst for the Area Agencies of Aging (AAA) and PDA's Health & Wellness initiatives;
- Provide training, technical assistance, and materials, as appropriate, for any of the PDA-endorsed evidence-based programs.

The goals of PDA's Health & Wellness program are to

- Abolish the myth that inevitable functional decline comes with age;
- Empower older adults with the information they need to age well;
- Support older adults in making lifestyle changes to improve their overall health;
- Reduce the utilization of the healthcare system.

PDA receives federal funding from the Administration for Community Living (ACL), through the OAA Reauthorization 2020 Title IIID, to provide evidence-based disease prevention and health promotion services through the Health & Wellness Program. Under Title IID of the OAA, funding has been provided since 1987 to states and territories based on their share of the population aged 60 and over the programs that support healthy lifestyles and promote healthy behaviors.

PDA issued Aging Program Directive (APD)# 19-04-01: Older Americans Act Title IIID Funding for Evidence-Based Programs and Health & Wellness Program. APD# 19-04-01 outlines the roles, responsibilities, and directives between PDA's Health & Wellness Program and the 52 AAA's Health & Wellness Programs serving Pennsylvania's 67 counties.

Chronic Disease Self-Management Program (CDSMP) and Diabetes Self-Management Program (DSMP) are two of the PDA-endorsed evidence-based programs that the AAAs may choose to conduct in their service areas that address diabetes.

Chronic Disease Self-Management Program

The Chronic Disease Self-Management Program (CDSMP) was developed by the Stanford University Patient Education Research Center as a collaborative research project with the Northern California Kaiser Permanente Medical Care Program. This program teaches older adults practical

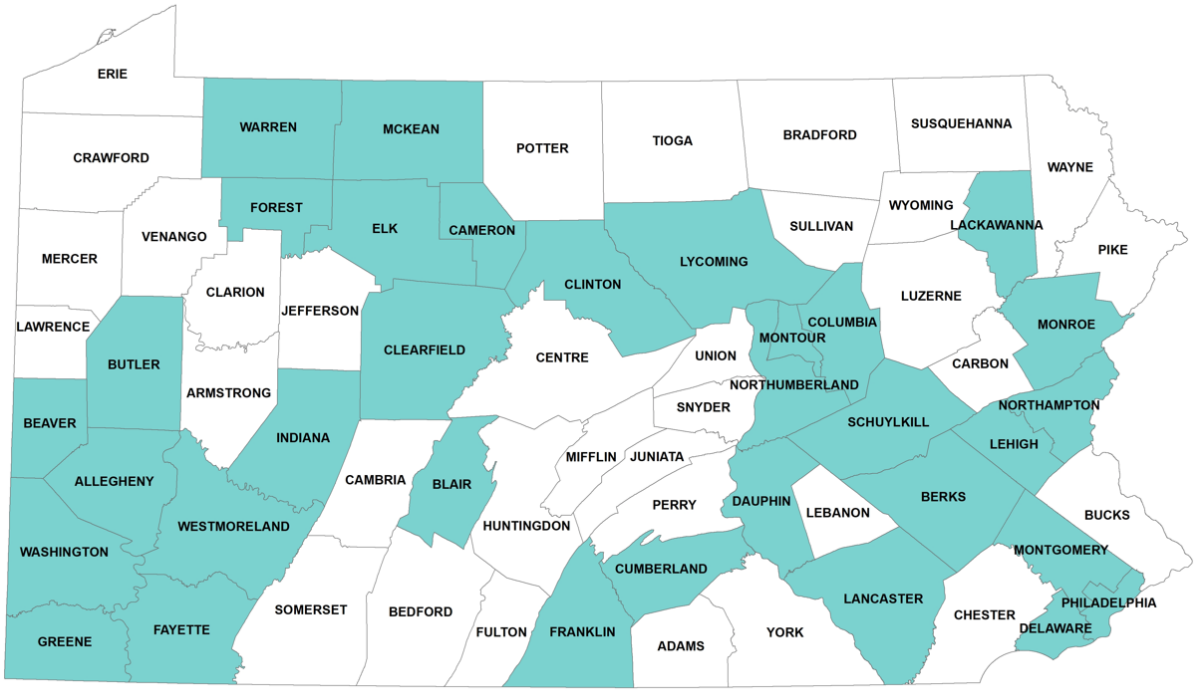
skills for managing chronic health conditions such as diabetes, hypertension, heart disease, and stroke. The objective is for participants to gain the confidence and motivation needed to manage the challenges of living with chronic health conditions. Certified CDSMP Lay Leaders or CDSMP Master Trainers conduct workshops, which consist of 2.5-hour weekly sessions held over six weeks. Workshops are held at senior community centers, senior housing facilities, faith-based organizations, libraries, health centers, and various other community sites.

Beginning in 2010, PDA purchased a multi-agency license for CDSMP from Stanford University. Since 2010, PDA has supported the delivery of CDSMP to almost 9,000 Pennsylvania residents.

The licensing entity of CDSMP has since moved from Stanford University to the Self-Management Resource Center (SMRC). Under PDA's license with the Self-Management Resource Center, as of July 1, 2023, there are 22 CDSMP Master Trainers and 122 CDSMP Lay Leaders trained to conduct CDSMP workshops reaching Pennsylvanians in 67 counties.

In state fiscal years 2021-2022 and 2022-2023 there were 802 CDSMP participants across 33 counties in 27 AAA service areas (See Map 1). Completion rate averaged 84.6 percent, which is above the national average of 74% according to the National Council on Aging database. Of these 802 CDSMP participants, 27 percent reported they had been diagnosed with diabetes. After completing a CDSMP workshop, 79 percent of participants reported a 7 or above on a scale of 1 to 10 on their confidence in managing their own chronic condition(s).

Map 1
SFYS 2021-2022 and 2022-2023 CDSMP Workshops in Pennsylvania



Source: Pennsylvania Department of Aging.

The challenges of COVID-19 provided the opportunity for ACL and the State Units of Aging to introduce virtual programing for outreach to older adults who may not normally leave their home to attend an in-person workshop due to physical challenges, access to transportation or caregiver responsibilities. When the Federal Public Health Declaration ended in the Spring of 2023, ACL continue to permit State Units of Aging to utilize virtual programs. The PDA will continue to monitor the effectiveness of the virtual programs as well as maintaining the fidelity. Of the 83 CDSMP workshops conducted during SFYS 2021-2022 and 2022-2023, 22 were conducted virtually.

CDSMP has received favorable reviews nationwide and in other countries and is available in many different languages. According to the National Council on Aging, a study found that participants who took the program demonstrated the following outcomes:

- A 3-percent reduction in hospital admissions;
- A 5-percent reduction in Emergency Room utilization; and
- An average of $368 in healthcare savings per participant minus the cost of the program.[137]

Diabetes Self-Management Program

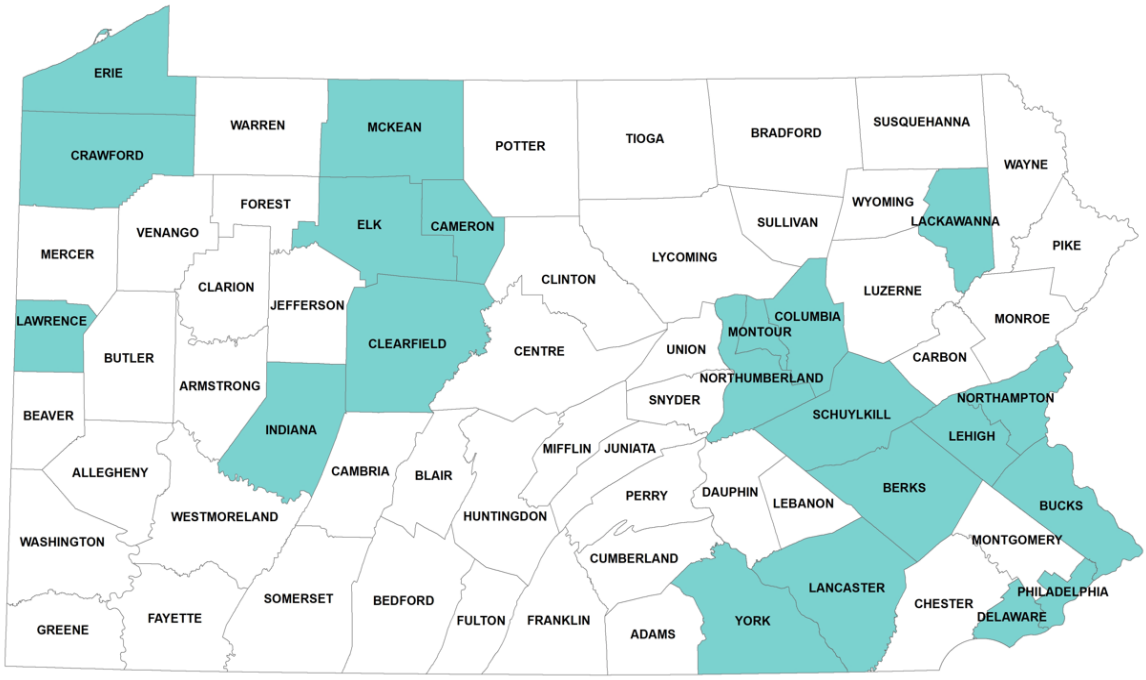
The Diabetes Self-Management Program (DSMP) was developed by Stanford University as a complement to the CDSMP and was added to PDA's SMRC license. Similar to CDSMP, DSMP uses certified Lay Leaders or Master Trainers to conduct workshops to teach older adults who have diabetes how to manage their condition. Workshops take place in senior community centers, senior housing facilities, faith-based organizations, libraries, health centers, and various other community sites. COVID-19 also provided the opportunity for DSMP to be available virtually by either video conference or with a DSMP toolkit mailed to the consumer with weekly conference calls. In state fiscal year 2021-2022 and 2022-2023, there were 40 DSMP workshops across the state, with 14 of them conducted virtually.

When PDA Master Trainers are cross-trained in DSMP, they are able to train new DSMP Lay Leaders. As of July 1, 2023, there are 15 DSMP active Master Trainers and 62 DSMP Lay Leaders serving approximately 30 counties.

In state fiscal year 2021-2022 and 2022-2023, there were 342 DSMP participants across 21 counties in 18 AAA service areas (See Map 2). Of these 342 DSMP participants, 56.4 percent reported they had been diagnosed with hypertension, and 28.3 percent reported obesity as a health care concern. Completion rate averaged 83.9 percent, which is above the national average of 75 percent according to the National Council on Aging database. After completing a DSMP workshop 91.4 percent of participants reported a 7 or above on a scale of 1 to 10 on their confidence in managing their own chronic condition(s).

[137] National Council on Aging. *Improving Quality of Life and Health Care Outcomes through CDSME Programs*, July 17, 2019, https://www.ncoa.org/healthy-aging/chronic-disease/.

Map 2
SFYS 2021-2022 and 2022-2023 DSMP Workshops in Pennsylvania



Source: Pennsylvania Department of Aging

In addition to CDSMP and DSMP, the AAA network utilizes approximately 29 other evidence-based programs that address areas such as injury and disease prevention, exercise, chronic conditions, nutrition, mental health, medication management, and substance abuse. These programs are provided at no charge to those 60 years old and older. Since 2021, the AAA network has provided Health & Wellness Evidence-Based Programs for up to 11,000 older adults per year across Pennsylvania.

PACE

Along with facilitating health and wellness programs teaching older adults practical skills that can help in maintaining good health, preventing illness and injury, and successfully managing their chronic conditions, the Department of Aging is also responsible for programs assisting eligible older Pennsylvanians in paying for their prescription medications. Taking the necessary medications is an essential part of disease management. It is especially critical for chronic conditions, such as diabetes.

The Pharmaceutical Assistance Contract for the Elderly (PACE) program and the PACE Needs Enhancement Tier (PACENET) program assist qualified older adults aged 65 years or older in paying for their prescription medications. PACE covers all medications requiring a prescription in the Commonwealth, as well as insulin, insulin syringes, and insulin needles, unless a

manufacturer does not participate in the Manufacturers' Rebate Program.[138] PACE pays the cost of prescription drugs and insulin supplies over a copay. PACENET pays the cost of prescription drugs and insulin supplies after a cardholder meets the premium requirement and pays a copayment. PACE pays Medicare premiums for Part D for PACE and PACENET cardholders. PACENET cardholders repay the Part D premiums. With the goal of providing seamless coverage, the PACE and PACENET programs provide benefits when Medicare Part D does not. For example, benefits are paid during the deductible and the coverage gap, for drugs excluded by Part D or for drugs not in a plan's formulary, and for copayment differentials between the Part D plan coverage and the PACE and PACENET copayments. In 2022, 230,700 older adults were enrolled in the PACE and PACENET programs, 39,000 of whom received antidiabetic pharmaceutical assistance.

The PACE Clearinghouse provides the expertise necessary to secure enrollment for eligible persons of all ages who seek assistance from manufacturers' medication discount programs. In 2022, 13,900 people received medication assistance, including diabetic agents, by contacting the Clearinghouse. The Clearinghouse connects persons with other social service resources, enrolls persons in benefits that are the result of Attorney General Lawsuit settlements, and assists Medicare Part D-enrolled cardholders with obtaining the Low-Income Subsidy benefit ("Extra Help").

Since 2018, PACE, through the Department Health, received funds under the Preventive Health and Health Services Block Grant. This ongoing project, continued into 2023, promotes awareness of prediabetes and the Diabetes Prevention Program to older Pennsylvanians by distributing information to prescribing clinicians. The PACE Academic Detailing Program developed a teaching tool to educate 500 clinicians each year, who care for PACE patients, about screening, testing and referring their eligible patients to local, no or low-cost Diabetes Prevention Programs.

An important component of the PACE program is updating physicians about changing therapies in complicated disease states. Type 2 diabetes is a common chronic condition with projected increases in prevalence for Pennsylvania that will continue to challenge health care providers. In April 2016, the program released an updated diabetes education module as part of its long-standing physician education program. In April 2019 and again in May 2022, the diabetes module was updated to reflect the new clinical trials and treatment guidelines that led to changes in diabetes medication utilization. From May 2022 through April 2023, 1,055 clinicians received one-on-one diabetes education.

The 2022 module includes

- Written evidence reports (print monograph)
- Summary document of top 4-5 key messages

[138] Pennsylvania Department of Aging. PACE *(Pharmaceutical Assistance Contract for the Elderly) Annual Report to the Pennsylvania General Assembly, January 1 - December 31, 2021,* https://www.aging.pa.gov/publications/annual-reports/Documents/2021%20PACE%20Annual%20Report.pdf.

- Academic detailing education sessions in physicians' offices delivered by trained outreach educators (pharmacists, nurses, physicians) who present the material face-to-face

- Reference cards for easy access to key materials

- Patient education brochures and tear-off sheets

The goals for the diabetes educational program are to help practitioners

- Define an HbA1c target based on a patient's health status and response to treatments; 7% for most patients and modifying the goal for many frail older patients with diabetes;

- Select initial treatment based on relevant comorbidities and HbA1c lowering need;

- Identify patients who are 1.5% or more above their goal to initiate treatment with two medications, within weeks of diagnosis;

- Revise treatment, adding insulin when other agents are not sufficient to achieve HbA1c goal;

- Plan to continuously promote weight control, exercise, and adherence to medications.

Educational modules are found at www.alosahealth.org, under Clinical Modules. PACE Academic Detailing Modules are designated for AMA PRA Category 1 Credits by the Harvard Medical School.

To evaluate the effectiveness of its academic detailing, the program conducted a collaborative research and evaluation project with Wilkes University, Wilkes-Barre, PA. This program evaluation study specifically examined prescribing patterns before and after prescribers participated in the program's 2013 diabetes management module. The module provided information on the comparative effectiveness and safety of diabetes medications, presented evidence regarding appropriate therapy strategies, and weighed the benefits, risks, and value of treatment options with the intent to improve the quality of prescribing and patient care. This interrupted time series evaluation focused on the third diabetes educational outreach intervention that was presented to 704 prescribers in 2013-14. In addition to the group of prescribers who received the diabetes management training, the evaluation analysis also includes a comparison group of prescribers who did not receive the training.

The quality metrics identified for this study included

- Prescribing metformin in older patients with diabetes

- Prescribing of HMG-CoA reductase inhibitors (statins) in diabetic patients

- Prescribing of either an angiotensin-converting-enzyme (ACE) inhibitor or an angiotensin II receptor blocker (ARB) for patients who have both diabetes and hypertension

- Avoidance of long-acting sulfonylureas (chlorpropamide, glyburide) in older patients with diabetes.

The results did not demonstrate differences between the intervention and comparison groups with respect to the four metrics. However, most prescribers in the detailed group had been exposed to more than one wave of diabetes training since 2007, and the quality metrics have become the standard of care. The findings are consistent with a ceiling effect in the metrics. Most prescribers were following treatment guidelines during the evaluation period. These results were published in American Health & Drug Benefits in 2019.

Medical Assistance (Medicaid)

In state fiscal year 2021-22 – the latest period for which data are available – there were 280,299 total Medicaid recipients with diabetes.[139]

The Department of Human Services' (DHS) Office of Medical Assistance Programs oversees the physical health component of the HealthChoices Program. The HealthChoices Program is the name of Pennsylvania's mandatory managed care program for Medical Assistance (MA, or Medicaid) recipients. Medicaid recipients gain access to medical care and appropriate physical health services through Physical Health Managed Care Organizations (MCOs).

Regular screenings are a key to successful diabetes management, to prevention, early detection, and prompt treatment of dangerous and expensive complications. As reflected in Table 1 below, the number of these critically important screenings for Medicaid patients in the Commonwealth was impacted by the COVID-19 public health emergency but is returning to pre-pandemic levels over time.

Table 1
HealthChoices Performance Areas
Medical Assistance Recipients with Diabetes
Annual Screenings by Type, 2019-2021

Type of Screening or Exam	Percentages of Recipients		
	2019	2020	2021
Percentage of Members with Diabetes Whose Blood Pressure Is Controlled (<140/90 mmHg)	70.7%	66.0%	67.0%
Eye Exam	60.0	53.3	55.2
A1C	87.6	83.7	85.2
Kidney Health Evaluation	N/A – New Measure	38.7	41.5

Source: Pennsylvania Department of Human Services

Education and outreach are an important part of improving diabetes control and maintenance.

[139] This section of the report is largely based on the information provided to the Joint State Government Commission by the Department of Human Services on June 30 and August 7, 2023.

All of the HealthChoices MCOs offer education and outreach to both providers and members concerning diabetes. Some of the information offered to providers describes best practices, how to code to identify diabetic members, and home lab testing and re-testing protocols for members with abnormal results. Examples of member education offered are diabetes disease specific education, instructions for obtaining screening and follow-up testing, and medication adherence coaching. Examples of member outreach include Diabetes Trac phone text messages, tele-monitoring, tele-retinal in-home screening, and community events, which offer hemoglobin A1C screenings and diabetic eye exams.

The MCOs have made some adjustments due to the new requirements in the HealthChoices program. The community-based care management (CBCM) model of care now requires MCOs to partner with community-based organizations (CBOs) who will coordinate care of members in the community. The concept of meeting to meet members in the community where they live is still the mainstay of the CBCM program. CBO staff consist of licensed and non-licensed staff such as registered nurses, social workers, community health workers, or pharmacists depending on the need of the MCO's population. CBO staff meet diabetic members face-to-face in their community or home to assist with filling out health care forms, making calls to the member's doctor's office to schedule an appointment, arranging transportation to the doctor's office, or obtaining a referral for a specialist. CBOs assist provider practices with their diabetic Medicaid members, using community health workers, pharmacists, diabetic navigators and/or social workers to assist with members who require higher-touch interactions to ensure medical services that are needed are obtained. Diabetic navigators alert providers about their members who are due or overdue for diabetic screenings and HbA1c testing. These navigators also educate members on diabetes, screenings and re-testing, medication adherence; they schedule appointments and ensure appointments are kept, assisting with any barriers that the member may have. These interactions are mostly face-to-face; however, they can also occur telephonically. The MCOs and CBOs have also taken advantage of virtual technology as a communication tool to interact with members. When a member cannot have a care coordinator in his or her home or attend an appointment at the physician's office for a face-to-face meeting, virtual video communication have made an impact on members receiving the vital care they need from providers.

MCO CBO partners now administer the Medication Therapy Management (MTM) program for their diabetic members. MTM involves a pharmacist who interacts with an MCO's diabetic member at the pharmacy to review the types, amounts, and duration of medications prescribed by the member's physician. Registered nurses or community health workers will also conduct home visits and review medications with the pharmacists by phone to ensure the member has the correct prescriptions and is taking them as prescribed.

In addition, some of the MCOs' partner CBOs offer Food as Medicine programs through partnerships with the Metropolitan Area Neighborhood Nutrition Alliance (MANNA) in Philadelphia, Geisinger's Fresh Food Farmacy (FFF), and Family Food (FF) programs. These programs provide diabetes education, along with meals for members and their families.

In October 2018, DHS and DOH began participation in the Centers for Disease Control and Prevention (CDC) 6 | 18 Initiative to implement the coverage of CDC-recognized Diabetes Prevention Programs (DPP) in the MA program. Starting in calendar year 2019, the MCOs were contractually required to implement a DPP pilot consistent with the CDC's DPP guidelines. DPP is an evidence-based lifestyle change program that requires a participant to complete all 22 sessions of the yearlong program (16 weekly sessions during the first six months and six monthly sessions during the second six months). The program is designed for individuals 18 years or older who have prediabetes or are at-risk for type 2 diabetes, but who do not already have diabetes. The year-long program is delivered in-person, online, or through a combination approach using group support. The goal of the program is to increase prediabetic individuals' knowledge of proper nutrition and eating habits, leading to weight loss, decreased hemoglobin A1C levels and to decrease likelihood of becoming insulin-dependent patients in the future.

On July 1, 2019, DHS began enrolling CDC-recognized DPP providers in the MA program so that they could begin to contract with the MCOs as in-network providers. As MCO network providers, these DPP providers will play an integral role in the MCOs' Diabetes Prevention Programs required within their community-based Care management programs. To date, a total of eleven (11) DPP providers are enrolled in Pennsylvania's MA Program.

In 2020, DPP programming with MA continued to evolve along two parallel tracks, with focus on provider capacity development as well as increased outreach to MCO members. The CDC 6|18 initiative offered states with a second round of DPP technical assistance for 2020. The National Association of Chronic Disease Directors (NACDD) provided DPP technical assistance to the DOH and DHS. The collaborative efforts between DOH and DHS continue to provide lifestyle change services to recipients with type 2 diabetes under the DPP. During the second year of technical assistance, DOH and DHS met monthly with NACDD. These meetings and discussions led to an increase in DPP provider capacity. On October 7, 2020, DOH hosted an educational workshop with NCADD for CDC recognized DPP organizations who wish to enroll in the MA program. The workshop allowed MA provider enrollment staff to educate DPP providers on the process of applying to enroll in the MA program.

Due to the success of the DPP pilots implemented by the MCOs during 2019, the MCOs were contractually required to implement the programs on an ongoing basis beginning in 2020. MCOs were also required to refer members who are identified as pre-diabetic to CDC-recognized or Medicare-enrolled Diabetes Prevention Programs. As a result, 610 HealthChoices beneficiaries have been enrolled in Diabetes Prevention Programs. MCOs consistently expanded and sustained their pilot programs, developing unique DPP strategies based on population demographics within the regions they serve. This work has continued since 2020, with a focus on offering virtual classes and using technology to make attendance as easy as possible for members due to the duration of the program, which can be a deterrent to participation. All MCOs are now offering virtual options and are seeing success. MCOs have also been exploring the use of member incentives to reward participation in the program with things like complimentary Weight Watchers memberships. MCOs continue to serve members with limited English proficiency who may benefit from this programming. Some MCOs are leveraging opportunities to share best practices by participating in the Health Promotion Council (HPC) and Pennsylvania Community Living Initiative (PA CLI)

Leadership Sustainability Group and the National Diabetes Prevention Program Virtual Learning Collaborative Statewide Engagement.[140]

Community HealthChoices (CHC)

The Community HealthChoices (CHC) program is administered by the Office of Long-Term Living. It is intended for dually eligible individuals (Medicare and Medical Assistance), older adults, and individuals with physical disabilities. The data available for SFY 2021-2022 indicates that 27.1 percent of Community Health Choices (CHC), the Managed Medicaid Long-Term Services and Supports program, members carry a diagnosis of diabetes.

CHC Members who had records with Diabetes Diagnosis SFY 2021-2022 ... 122,934[141]

Unique Count of CHC Enrollment SFY 2021-2022 453,522

Percentage of CHC Members with Diabetes Diagnosis SFY 2021-2022 ..... 27.1%

The Standards of Care set forth for the CHC program include the following:

a) Maintenance of participants' blood sugars and hemoglobin A1C levels within ADA guidelines both as inpatients and outpatients.

b) Maintaining appropriate diabetic diets and medications.

Some perceived challenges include

a) Consistent monitoring of patients' blood sugar level and their A1C level, especially as they transition from settings such as hospitals and nursing facilities to a home- and community-based setting.

b) Maintaining diabetic (consistent carbohydrate) dietary compliance in this population.

c) Specific challenges are involved in the CHC population who carry a diagnosis of schizophrenia as this group is noted to have a high prevalence of diabetes.

d) The diabetic population is at particular risk of morbidity and mortality from COVID-19 due to their immunocompromised status.

e) Specific challenges are involved in the CHC population for diabetic management of those experiencing housing insecurity/homelessness.

[140] Information on HealthChoices education and outreach was reported by each individual MCO in February 2023.
[141] The CHC member count of 122,934 is a subset of the total Medicaid recipient count of 280,299 as the CHC is funded by Medicaid and it is a Medicaid-managed care program.

f) Service coordinators (SCs) and their clinical acumen are key to improve diabetic management; however, there is high turnover for this worker population.

Strategies to address the above include the following steps:

a) All CHC MCOs have developed individual person-centered service plans for every participant deemed nursing-facility clinically eligible, and these plans address diabetic education, monitoring, and medication usage and compliance.

b) CHC plans to work with their service providers to educate participants who are immunocompromised and to ensure that they understand the risks COVID-19 poses to people with diabetes.

c) All CHC MCOs are reporting to both DHS and NCQA annually on the number of participants who are getting appropriate blood sugar and hemoglobin A1C checks.

Table 2
HEDIS Performance Areas
CHC Recipients with Diabetes
by Measurement Year

Healthcare Effectiveness Data and Information Set (HEDIS) Measure	MY 2018	MY 2019	MY 2020	MY 2021	MY 2022
Comprehensive Diabetes Care– Blood Pressure Control (<140/90)	N/A	N/A	51.31%	62.33%	68.07%
Comprehensive Diabetes Car–Eye Exams	70.87%	65.18%	57.01	62.54	63.14
Comprehensive Diabetes Care–HbA1C Testing	91.34	90.51	84.09	89.30	90.45
Kidney Health Evaluation for Patients with Diabetes–(Total)	N/A	N/A	38.34	42.73	45.10

Source: Pennsylvania Department of Human Services

New initiatives include the following:

1) AmeriHealth and Keystone First have implemented

a. Use of home testing kits for HbA1C

b. Incentive programs for HbA1C and diabetic retinopathy screening HEDIS measures.

2) PA Health and Wellness has done the following:

   a. Implemented recurrent and systematic teaching and training to 'cement' service coordinators' knowledge and to account for turnover in the SC population

   b. Began a program where an indication of a participant's positive response to questions related to diabetes in the PCSP and InterRIA assessments will trigger evaluations for care and/or disease management programs.

3) UPMC has implemented

   a. Better Food, Better Health pilot (BFBH). For this initiative, UPMC CHC has partnered with two Philadelphia community-based organizations to provide medically tailored meals, fresh produce, nutritional counseling, and food preparation/shopping education to 167 aligned CHC southeast members receiving HCBS who have a dual diagnosis of congestive heart failure plus diabetes or hypertension plus diabetes.

   b. Food Pharmacy. A food pharmacy program established in Western PA will support participants with type 2 diabetes and food insecurity. Participants will be supported by lifestyle coaching and community resources to improve overall health.

   c. Data monitoring. UPMC tracks diabetes on its clinical dashboard. UPMC has full visualization of utilization data about the group of members who have UPMC as their primary medical payer.

   d. High-risk certified diabetes care and education specialist (CDCES). Participant can be referred to such a specialist for no cost. The program includes problem-focused face-to-face visits to mitigate barriers and optimize diabetes management; telephonic and video visits are also available.

YMCA'S
DIABETES PREVENTION PROGRAM

YMCAs play an important part in chronic disease prevention. Pennsylvania YMCAs, in particular, work hard to increase awareness of type 2 diabetes and prediabetes and to offer people tools to reduce their risk for developing this disease and for improving their health outcome when they have it.

The YMCA's Diabetes Prevention Program uses a CDC-approved curriculum and is part of the CDC-led National Diabetes Prevention Program. The YMCA's Diabetes Prevention Program is available to all qualifying individuals regardless of their insurance status and their Y membership or lack thereof.[142] See Tables 3 and 4.

Table 3
Number of Enrollees by Y
2022

Y Association	Enrolled 2022
Harrisburg Area Metropolitan YMCA	24
Greater Wyoming Valley Area YMCA	10
YMCA of the Roses	8
Greater Valley YMCA	6
Greater Scranton YMCA	5
Carbondale YMCA	2
Total	**55**

Source: Pennsylvania State Alliance of YMCAs

[142] The following section of the report is largely based on the information provided to the Joint State Government Commission by Ms. Megan Maurer, Director of Administrative Services, Harrisburg Area YMCA, in the personal e-mail of June 27, 2023.

Table 4 Number of Enrollees by Y 2022	
Y Association	**Enrolled May 2023**
Greater Wyoming Valley Area YMCA	29
Harrisburg Area Metropolitan YMCA	24
YMCA of the Roses	9
Greater Valley YMCA	6
Greater Scranton YMCA	5
Carbondale YMCA	2
Total	**75**

Source:

As a result of the pandemic, YMCAs have seen a decrease in the amount of YMCA providers offering the YMCA's Diabetes Prevention Program. Efforts are being made in order to increase the number of providers. Ys are exploring umbrella HUB and shared service agreements, as well as distance-learning opportunities to better serve their communities.

One of the key partners in diabetes prevention and management in Pennsylvania is the Health Promotion Council (HPC). The HPC is a nonprofit corporation that has more than forty years of experience in chronic disease prevention and management, including asthma, diabetes, cancer, hypertension, nicotine addiction, and obesity. Since 1999, the HPC has been an affiliate of the Public Health Management Corporation (PHMC), a leading public health institute in the region, which allowed it to further expand its work in the fields of public health and chronic disease prevention and management. At present, the HPC reaches more than 20,000 Pennsylvanians every year. This organization is "focused on health equity and culturally responsive services delivered by diverse staff."[143] Its approach involves a combination of work that targets individuals and families as well as the environment in which people live and work. According to the HPC's statement, its goal is "to reduce risk for injury and prevent disease, to help those living with chronic conditions successfully manage their health and to promote wellness."[144]

With regard to diabetes, in particular, the HPC has played a major part in the implementation of diabetes prevention programs in the Commonwealth in collaboration with other state departments and agencies.[145]

National DPP and Related Work:

- HPC has achieved Full-Plus recognition by the CDC DPRP.
- HPC continued to build its Umbrella Hub working with five subsidiary organizations in Pennsylvania: Episcopal Community Services, Mi Salud Wellness Center, Montgomery County Office of Senior Services, YMCA of the Roses, and Jefferson Collaborative for Health Equity.
- HPC continues to recruit additional subsidiaries interested in receiving reimbursement for the National Diabetes Prevention Program.
- HPC became an MDPP Supplier on 7/14/21 and has submitted 18 claims totaling $1,617.44 with reimbursement from Medicare and Medicare Advantage plans in Pennsylvania.

[143] *Health Promotion Council*, https://www.hpcpa.org.
[144] Ibid.
[145] The following section is largely based on the information provided to the Joint State Government Commission by Mr. Eric Bumbaca, HPC Program Manager, Training and Capacity Building, in a personal e-mail sent August 24, 2023.

- HPC registered as a Pennsylvania Medicaid provider for DPP as an Umbrella Hub Organization (UHO) effective 1/29/21.

- HPC also has a contract with Health Partners Plan, a Medicaid MCO, and has begun furnishing services to HPP beneficiaries. Claims are expected to be processed in late 2023.

- HPC created the Health Referral Hub, a community-focused resource and communication center that connects community members with health resources in their areas. Currently, the Health Referral Hub is generating program referrals to DPP and DSMES, with planned expansion to other services.

- HPC completed a Health and Lifestyle Training (HALT) cohort serving 14 participants recruited with support from the Pennsylvania Employee Benefits Trust Fund (PEBTF). HALT is an asynchronous online delivery platform for DPP.

- In September 2023, HPC completed the 1705 cooperative agreement with NACDD and CDC: Scaling the National DPP in Underserved Areas.

- HPC has partnered with Accessible Pharmacy, a home delivery pharmacy specializing in providing medication and resources for people with low sight or who are blind, to deliver the National DPP to their patients. The cohort will be run by a member of Accessible Pharmacy and trained lifestyle coach who is blind. This is a significant opportunity to bolster services in Pennsylvania for people who are blind or have low vision.

- Through funding support from CDC-RFA-DP18-1815 and support from NACDD, HPC launched a pilot DPP initiative in collaboration with the Greater Philadelphia Business Coalition on Health (GPBCH), SEPTA, and Teamsters Union employees utilizing the HALT platform. This DPP pilot launched in February 2023 was looking to explore the benefits of the DPP program for employees, including the benefits for employers to cover evidence-based prevention programs like the DPP, including asynchronous delivery modes. GPBCH helped to recruit member employer organizations who would be interested in participating and had an employee base that could be recruited from. Through collaboration between NACDD, GPBCH, HPC, and the employers, customized recruitment materials were developed and distributed through a variety of strategies, including direct e-mail messaging, newsletter announcements, direct mailers, and word of mouth from fellow employees and organizational health staff. Recruitment efforts, which started in mid-January 2023 and ran for four weeks prior to the start date of the program, resulted in 64 employees across the two employer partners completing the pre-diabetes risk test, 51 of those employees being eligible for the program, and 24 employees enrolling in the program.

- HPC completed the Pennsylvania Outdoor Living Needs Assessment for People with Disabilities report in partnership with Conemaugh Health, The Sight Center of Northwest Pennsylvania, Penn Highlands Health and the National Park Service.

- HPC convened eight Lifestyle Coach Gatherings between 2021 and 2023.
    - March 2021: 25 attendees; presentation and panel discussion on inclusion and nutrition in honor of National Nutrition Month; objective was to educate individuals about inclusion and the barriers and challenges that people with disabilities encounter on a daily basis.
    - June 2021: 25 attendees; presented on inclusive fitness as it pertains to health promotion programs such as the National Diabetes Prevention Program.
    - November 2021: 30 attendees; centered on Diabetes Awareness Month; including cooking demo and healthy holiday cooking presentation.
    - February 2022: 30-35 attendees; presented on "Preparing for After the Public Health Emergency: Modality of Delivery Techniques"; spotlight speaker Manette Richardson from PHMC.
    - May 2022: 25 attendees; spotlight speaker Pottstown Medical Specialists who presented on Expanding and Sustaining Diabetes Prevention Programming.
    - November 2022: 30 attendees; spotlight speaker Mi Salud.
    - April 2023: 10 attendees; focused on DPP & Walk With Ease coupling.
    - June 2023: 25 attendees; focused on sustainability and featured a panel of program delivery organizations. The panel discussed and answered questions about topics ranging from establishing sustainable programming systems and referral pathways, successes and challenges around staffing, communication, screening/testing/referring eligible patients, and cultivating lasting relationships with donors.
- The Health Promotion Council joined with the National Association of Chronic Disease Directors, Perry Media Group, and Welltok to pilot "Text TODAY - Make a Choice for a Healthier Life", a multi-channel public health outreach campaign promoting the use of text messages to prevent Type 2 Diabetes among Black and Hispanic Pennsylvanians. The campaign generated over 2.2 million impressions through digital, radio, streaming, and in-store digital advertisements, assisted by a network of 46 promotional partners to reach over 379,000 individuals. Participants who responded via text or phone were connected to the HPC Referral Hub, a new cloud-based call center operated by the Health Promotion Council for participant outreach, diabetes risk assessment, and referrals to DPP providers.

DSMES:

As part of DP18-1815, HPC compiled quarterly assessments of Pennsylvania DSMES certified sites from the ADA and the ADCES to help strategically visualize and target areas across Pennsylvania that did not have adequate access to DSMES services. Through regular connection with the ADA and the ADCES, HPC has been able to manage a list of active DSMES programs across Pennsylvania. Maintaining these lists have allowed HPC to reach out to DSMES providers across the Commonwealth to learn more about their programming, including referral pathways and capacity. This has been essential in HPC's work in building out the Health Referral Hub to ensure that individuals who are seeking DSMES are connected with a program that has the capacity to receive their referral. This includes identifying programs that are seeking more referrals and utilization and leveraging those relationships into pilot project initiatives. Quarterly analysis of the certified sites also highlighted the continued impacts of the COVID-19 pandemic, including staffing turnover and changing priorities within organizations represented through fluctuations in the number of accredited and recognized programs.

Through work with Quality Insights, the Pennsylvania Department of Health is working to increase participation in recognized/accredited DSMES programs by educating providers, promoting DSMES within communities, and improving referral processes and networks. Quality Insights will engage health systems, independent practices, and electronic health record (EHR) vendors to assist in completing this work.

HPC conducted a pilot initiative in collaboration with HealthShare Exchange (HSX), Southeastern Pennsylvania's Health Information Exchange (HIE) to utilize Encounter Notification System to identify individuals within a health care system who would be eligible for DSMES. Through an existing relationship with Einstein Hospital, which is now part of the Jefferson Health System, HSX created Smart Alerts that would flag individuals who met outlined criteria set forth by HPC for DSMES eligibility, including recent discharge from the hospital or emergency room, type 2 diabetes diagnosis, HgbA1C not at goal, and documentation of other existing comorbidities. Details about these individuals was then securely sent to an inbox monitored by Einstein staff who would either enroll them into Einstein's DSMES program or refer them out to an identified DSMES partner, Integrated Diabetes Services. Patients would then be enrolled into DSMES and information regarding their referral status and participation would be sent back to their provider. The overall goal of this pilot was to demonstrate the utilization of a platform and system, like HSX's Encounter Notification System, to efficiently identify and refer individuals to DSMES.

LATINO CONNECTION

One of the successful diabetes prevention and self-management programs targeting a highly affected and formerly underserved population group in Pennsylvania is Latino Connection and Color & Culture's "Live Your Best Life".[146]

Latino Connection is a social determinants of health marketing and education agency that defines its mission as education, empowering, and uplifting of underserved communities.[147] It is considered a national leader in community education and health outreach. Since its foundation in 2014, Latino Connection has created and activated multiple programs in low-income communities to address various social determinants of health. Diabetes prevention and self-management program is one of its well-established initiatives. In the Commonwealth, the program receives direct funding from the Pennsylvania Department of Health. It also partners with MCO entities such as Gateway Health and Highmark Wholecare, which do not provide funding but offer their presence and additional resources for the community.

Prevalence of diabetes among Latino and Hispanic population in Pennsylvania is higher than the state average: percentage of Latino or Hispanics with a reported diabetes diagnosis is 13.7 percent.[148] Prevalence of obesity in this demographic is also slightly higher than in the state in general: percentage of the adult Latino or Hispanic population with a body mass index of 30.0 or higher is 34.1 percent.[149] These American Health Rankings numbers are based on the CDC Behavioral Risk Factor Surveillance System data for 2021.

Health education and Diabetes Prevention Program (DPP) events are selected due to the high percentage of Latinos living in the following counties:

- Lehigh County Latino and Hispanic Population: 375,539 (28%)
- Dauphin County Latino and Hispanic: 287,400 (10.7%)
- York County Latino and Hispanic Population: 458,696 (8.9%)
- Lebanon County Latino and Hispanic Population: 143,493 (14.9%)
- Berks County Latino and Hispanic: 429,342 (23.9%)[150]

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[146] This section of the report is largely based on the information provided to the Joint State Government Commission by the Latino Connection staff: Mr. Sean McCormick, Senior Project Manager; Ms. Betsy Lorenzo, Community Health Worker Supervisor; and Mr. Nelson Mena, Account Executive.

[147] Latino Connection, https//latinoconnection.org.

[148] America's Health Rankings. *Diabetes in Pennsylvania*, https://www.americashealthrankings.org/explore/measures/Diabetes/PA?population=Diabetes_Hispanic_C.

[149] America's Health Rankings. *Obesity in Depth*, https://www.americashealthrankings.org/explore/annual/measure/Hypertension/population/hypertension_Hispanic/state/PA.

[150] United States Census Bureau. *QuickFacts*, https://www.census.gov/quickfacts/fact/table/lehighcountypennsylvania,dauphincountypennsylvania,yorkcountypennsylvania,berkscountypennsylvania,lebanoncountypennsylvania/RHI725221.

Latino Connection Activities and Strategies: "Live Your Best Life"

Latino Connection community health workers (CHWs) conduct health and wellness events and digital advertising to educate low-income Latinx populations about prediabetes and diabetes and the national DPP. In the past three years, community health workers distributed prediabetes screenings and enrolled eligible individuals in the DPP at community health education events, vaccination events, and mobile health clinic events. More than 600 people have been reached through 20 outreach events held in 2021-2023. 120 people have been recruited since 2021.

Some examples of the typical outreach events include the following:

- Tuesday, June 14, 2021. Rice and Beans Restaurant. Harrisburg, PA. Participants recruited: 18

  This event was held inside a very popular Latino restaurant during lunch time. The CHW team had the opportunity to have direct contact with customers, and the fact that people were in a good mood and in a food environment made it easy for them to talk about the effect of food on health. The participants shared many stories and testimonials about living with diabetes or dealing with a family member who has it, so they very thankful for the opportunity to receive this educational reminder at such an opportune time.

- Thursday, June 2, 2022. Spanish American Multicultural Resource Center. York, PA. Participants recruited: 16

  This event was made special by partnering with the Resource Center for a special food distribution day. These types of community gatherings tend to be very well attended by people from low-income and underserved communities, making it an excellent place to reach out to people who live in these communities – people who go in search of food because they need it; people who suffer not only from food shortages, but also from health disparities, so the ability to provide them with additional educational resource at no cost makes a big difference.

- Friday, March 24, 2023. Hall Manor. Harrisburg, PA. Participants recruited: 21

  Having the ability to partner with important community-based organizations is key to conducting a successful event. Latino Connection was able to host an event at Hall Manor, a neighborhood complex with five hundred-and forty apartments. This provided a rare opportunity to reach a vast number of low-income families. One of the Latino Connection's DPP current participants lives in this community and, due to his commitment to the program and the satisfaction he receives from being in it, he proactively and unexpectedly joined the team, giving them his moral support and referrals.

- Saturday, April 8, 2023. Latino Health Summit. Reading, PA. Participants recruited: 39

The third annual Latino Connection Summit and Adelante Wellness Expo that took place at the DoubleTree by Hilton in Berks County provided an opportunity for continuing education and networking among the medical community on April 7, 2023. The following day, the general public was offered a variety of fun educational activities, demonstrations by relevant speakers, health screenings, and multiple resources. Latino Connection was able to reach about 300 people.

Meeting People Where They Are

Latino Connection directly takes resources, staff, and mobile health units into underserved communities. As illustrated by the outreach events listed above, the staff goes directly where people are visiting, such as retail locations, corner stores, bodegas, health centers, churches, and community centers to reach underserved, underinsured, and high-risk populations. Bilingual community health workers who are fluent in Spanish and often have Spanish as their first language are able to easily connect with community members, especially those who may be reluctant to engage with the healthcare system.

Promotion

The Diabetes Prevention Program/Diabetes Self-Management Education and Support program is promoted on high-tech digital screens in 52 different retail locations in Lancaster, Harrisburg, Lebanon, Reading, and York. The program is also promoted on social media. Furthermore, Latino Connection developed "Live Your Best Life", a "brand" for diabetes-related programs with bright colors representing this vibrant community.

Latino Connection's Certified Community Health Workers (CHWs)

Certified through Temple University's 2020 CHW Training Program, Latino Connection's bilingual CHWs are vital to many of their initiatives and serve as a bridge to resources for combating social determinants of health in vulnerable populations. They are trained to conduct basic health and medical care and provide support as it relates to preventative and rehabilitation care.

Custom "Live Your Best Life" Booklet

In addition to the Centers for Disease Control-approved content, Latino Connection has developed a booklet aimed at the Latino community with a focus on social determinants of health. The Live Your Best Life Booklet, available in English and Spanish, contents include

1) diabetes and pre-diabetes screening tool,
2) learning how to monitor fat and calorie intake,
3) strategies for healthy eating and cooking, healthy nutrition,
4) physical activity and exercise,
5) changing your environment and surrounding,
6) problem-solving and stress management,
7) responding to negative thoughts and slips in unhealthy behaviors,
8) managing diabetes, and
9) staying motivated.

These booklets are available in digital and print formats.

Keys to Success

- Building trust, and authentic, strong relationship with participants
- Encouraging questions and open and honest communications
- Providing resources to be able to connect to classes
- Willingness to teach participants how to use tablets and smartphones to engage with the DPP programs remotely
- Providing participation incentives
- Group members providing insights and motivation to each other
- Combining Latino Connection's other prevention and health education health campaigns (i.e., tobacco prevention and treatment referrals, affordable housing, vaccinations, blood pressure screenings, health insurance enrollment).

More information about the program is available at the Latino Connection website: latinoconnection.org.

General Assembly Responses

To facilitate the timely, appropriate, and continuous treatment of diabetes and to prevent complications that can be devastating for patients and their families and expensive for the insurance companies, the General Assembly should consider the following changes in insurance practices:

1. Require that health plans policies significantly limit step therapy regulations for patients with diabetes and other chronic diseases. Therapy regulations should rely only on current clinical data, be transparent, and offer clear and concise exceptions to step therapy protocols based on medical necessity. A patient's switching from one health plan to another should not involve a restart of step therapy.

2. Expand caps on out-of-pocket payment for insulin and other essential diabetes medications. Limit healthcare plans' ability to eliminate the protected medications from their formulary.

3. Require that healthcare plans treat insulin and essential equipment necessary for diabetes maintenance (glucometers, strips, et cetera) as preventive coverage so that it would require no copay.

Other Recommendations

4. Providers, healthcare systems and payers should prioritize the delivery of patient-centered care, which is care that considers individual patient comorbidities and prognoses; is respectful of and responsive to patient preferences, needs and values; and ensures that patient values guide all clinical decisions.

5. Diabetes care should be based on the principles of the Chronic Care Model (CCM) and the Minimally Disruptive Medicine (MDM). The Chronic Care Model involves proactively managing chronic diseases such as diabetes. The Minimally Disruptive Medicine is a person-centered approach to healthcare that prioritizes the self-determined and self-chosen goals for life and health of patients while minimizing the healthcare disruption to their lives.

6. Clinicians should thoughtfully select glycemic treatment targets based on an individual's age, life expectancy, hypoglycemia, or other adverse treatment effects as well as his or her personal preferences. This is especially important for older adults, who often benefit from deintensification of treatment goals and simplification of complex treatment plans.

7. Healthcare providers, insurers, and employers should use person-first, inclusive, and strength-based language. Patient-blaming is unacceptable. Patients who have diabetes need to receive psychosocial care, which is an important component of diabetes management.

8. All individuals who have diabetes should have access to ongoing Diabetes Self-Management Education and Support (DSMES) programs. These programs should be offered in a variety of formats to meet patients' specific needs and preferences. Enrollment of eligible Pennsylvania adults in DSMES programs should be increased through enhancing program availability, awareness and promotion, coverage and reimbursement, along with screening, testing, and referrals.

9. The DHS should consider including a DPP network adequacy requirement in the MCO contracts. It has been suggested that similar to the network adequacy requirements for primary care and specialty medical care, there should be a standard established by DHS regarding the number of DPP providers required in geographic proximity to their membership to ensure that there is adequate access and coverage. This could include the availability of both online and distance-learning options within the MCO network. To support this endeavor, it would be important that adequate funding for the training of DPP lifestyle coaches be provided to the DPP supplier community.

10. As the Health Promotion Council (HPC) perceives one of the greatest challenges to providing services to Medicaid beneficiaries to be the process for contracting and credentialing with Medicaid managed care organizations (MCOs), it may be useful to convene annual or biannual meetings of MCO medical directors specifically brought together to discuss coverage of the National DPP and contracting with Medicaid MCOs in Pennsylvania. Gathering medical directors (or relevant authorities) from each MCO to discuss processes, challenges, and updates would be beneficial to increasing services to Medicaid beneficiaries.

11. Emphasis should be put on early detection and management of type 1 and type 2 diabetes among children, adolescents, and young adults.

12. Healthcare providers should increase attention to gestational diabetes screening and maintenance as well as follow-up after childbirth.

13. Effectiveness and cost-effectiveness of all programs and pharmacotherapy aimed at obesity treatment should be thoroughly analyzed and continuously evaluated.

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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

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

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

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

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

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

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

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

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

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

(1) The Department of Health.

(2) The Department of Public Welfare.

(3) The Department of Education.

(4) The State Employees' Retirement System.

(5) The Health Care Containment Council.

(6) Any additional State departments or agencies the commission deems appropriate to develop, research and prepare the report;

and be it further

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

(1) The number of individuals with diabetes impacted or covered by the State department or agency.

(2) The number of individuals with diabetes and family members impacted by prevention and diabetes control programs implemented by the State department or agency.

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

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

and be it further

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

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

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

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

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

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

RESOLVED, That the Joint State Government Commission develop a detailed budget blueprint identifying needs, costs and resources required to implement the plans and recommendations of each department or agency, and that the blueprint include a budget range for all options presented in the recommendations identified by each department or agency for consideration by the General Assembly; and be it further

RESOLVED, That the Joint State Government Commission provide the initial report on the estimated number of individuals with diabetes, pre-diabetes or related diabetes ~~within~~ WHO ARE SERVED BY each department or agency and any additional information the commission deems appropriate to the General Assembly by March 1, 2015; and be it further

RESOLVED, That the Joint State Government Commission submit a ~~final~~ COMPREHENSIVE report on the items listed in this resolution to the Diabetes Caucus of the House of Representatives and the Human Services Committee AND THE HEALTH COMMITTEE of the House of Representatives by September 15, 2015, and by September 15 of each odd-numbered year thereafter following the release of the initial report.