

# Arizona Diabetes Action Plan and Report

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January 1, 2023

*Report to the Legislature of the State of Arizona in response to the Fifty-Third Legislature, Second Regular Session, 2018: House Bill 2258. This is a collaborative report from the Arizona State Department of Health Services, the Arizona State Department of Administration, Arizona Health Care Cost Containment System, Arizona State Retirement System, Public Safety Personnel Retirement System, Arizona Diabetes Coalition and Leadership Council and Arizona Diabetes Stakeholders.*

~ Health and Wellness for all Arizonans ~



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# House Bill 2258: Diabetes Action Plan and Report

State of Arizona, January 2023

## Acknowledgements / Contributors

*As Arizonans and diabetes stakeholders, action on the recommendations provided in this report will help reduce the burden of diabetes on all of Arizonans by improving the lives of those affected by this devastating disease.*

*ADHS would like to extend its most sincere gratitude to each of the collaborators and stakeholders who aided in the production of this report, your assistance is invaluable in this project. Thank you for the dedication and continued collaboration as we work towards reducing the burden of diabetes on the diverse communities of Arizona.*

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## Executive Summary

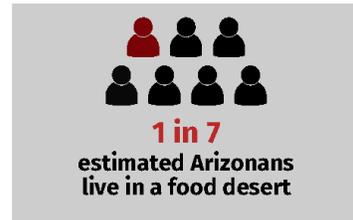
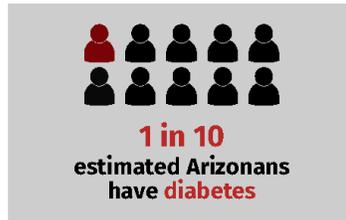
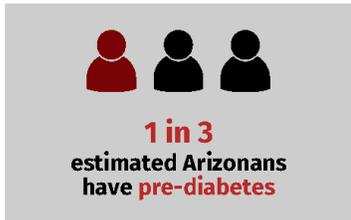
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The Arizona Department of Health Services (ADHS) is pleased to release the third Arizona Diabetes Action Plan and Report (DAP), a comprehensive report highlighting statewide initiatives and the burden of diabetes on Arizonans. This thorough report is the product of ADHS' collaboration with the Arizona Health Care Cost Containment System (AHCCCS), the Arizona State Retirement System (ASRS), the Arizona Department of Administration (ADOA) Benefits Division, Vitalyst Health Foundation, the American Diabetes Association, and the Arizona Diabetes Coalition and Leadership Council.

Diabetes is now the seventh leading cause of premature death in Arizona and greatly contributes to early disability (1). If improperly managed, diabetes can lead to a multitude of health issues including heart disease, stroke, kidney disease, blindness, nerve damage, lower leg amputation and death (2). In Arizona, the combined yearly direct and indirect costs of diabetes are a staggering \$6.8 billion a year (3). With almost 600,000 adults living with diabetes in Arizona, it is also estimated that another 2 million adults (1 in 3 Arizonans) have prediabetes (1; 3). As the numbers increase, close to 90% of those with prediabetes are not aware they have it, exacerbating the risk of developing type 2 diabetes (1). These numbers are expected to worsen if nothing is done to curtail them. Current population growth trends suggest that by 2050 there could be almost 12 million people living in Arizona, and nearly half of them could be affected by the burden of prediabetes and diabetes (4).

Many people already live in the continuum of diabetes, and the African American, American Indian, and Hispanic/Latino communities are at the greatest risk in Arizona. Greater insulin resistance, decreased insulin secretion, and an increased rate of obesity typically affect these communities. While genetics play a role in the higher risk reported in these communities, socio-economic disparities equally compound the problem. Historically the lack of access to healthy foods, places to exercise and play, and the ability to receive adequate medical and preventive care all multiply the risk for worse health outcomes in these communities (5). In an effort to achieve health equity, guided by the Arizona Health Improvement Plan (AzHIP) 2021-2025 (6), the State can tackle diabetes directly and indirectly: through preventive measures, supporting adequate care, and addressing the social determinants of health.

# DIABETES IN ARIZONA



31 CENTERS FOR DISEASE CONTROL  
AND PREVENTION-RECOGNIZED  
NATIONAL DIABETES PREVENTION  
PROGRAMS

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45 ASSOCIATION OF DIABETES  
CARE AND EDUCATION  
SPECIALISTS/AMERICAN DIABETES  
ASSOCIATION-ACCREDITED  
DIABETES PROGRAMS

---

15 COUNTIES WITH FOOD  
DESERTS

## DIABETES CREATES HIGHER RISKS FOR:



BLINDNESS



HEART DISEASE



LOSS OF TOES,  
FEET, OR LEGS

**RISK OF DEATH FOR ADULTS WITH  
DIABETES IS 50% HIGHER THAN FOR  
ADULTS WITHOUT DIABETES**

## DIABETES COSTS IN ARIZONA

**\$5.1** Direct Medical Costs (doctor visits, medications, supplies, hospital care)  
**+** **\$1.7** Indirect Costs (absenteeism, lower work productivity, early disability)

**\$6.8 BILLION DOLLARS IN DIABETES RELATED COSTS**

All data references are as of December 30, 2022

# PREDIABETES

## WHAT IS PREDIABETES?

Prediabetes is a serious, but reversible condition where blood sugars are higher than normal, but not high enough to be diagnosed as diabetes. Without treatment, prediabetes can lead to diabetes, heart disease and stroke.

## WHO DOES PREDIABETES IMPACT?

The Centers for Disease Control estimates that 1 out of 3 adults have prediabetes. Of those, 90% are unaware that they have prediabetes.

An estimated **2 million** Arizonans have prediabetes.

## WHAT CAN BE DONE?

- 1** Get screened for prediabetes.
- 2** If you have prediabetes, lose weight by eating healthy and being more active. This can lower your risk of getting type 2 diabetes by 50%.



All data references are as of December 30, 2022

# TYPE 2 DIABETES

WHAT IS TYPE 2 DIABETES?	HOW MANY ARIZONANS HAVE DIABETES?	RISK FACTORS
<p>In type 2 diabetes, the body can make insulin but cannot use the insulin properly. Insulin is a hormone that changes blood sugar into energy for the body.</p> <p>Can develop at any age and in most cases can be prevented.</p> 	<p>An estimated 95% of all diabetes cases are type 2 diabetes. This is almost 600,000 people in Arizona.</p> <p>There are almost as many people living with diabetes than living in the city limits of Tucson and Flagstaff combined.</p> 	<p>Some risk factors for diabetes can be changed and some cannot.</p> <ul style="list-style-type: none"><li>• Being overweight</li><li>• Being 45 and older</li><li>• Having a family history of diabetes</li><li>• Not being physically active</li></ul> 

## COMPLICATIONS



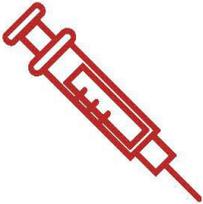
Diabetes is the leading cause of blindness in adults. People living with diabetes are:

**2 to 4**  
times more likely  
to have a stroke.

**2 to 3**  
times more likely to  
have depression.

All data references are as of December 30, 2022

# TYPE 1 DIABETES

WHAT IS TYPE 1 DIABETES?	PRIORITY POPULATION	TREATMENT
<p>Type 1 diabetes is when the body does NOT make any insulin. Insulin is a hormone that changes blood sugar into energy for the body.</p> <p><b>There is no known way to prevent type 1 diabetes.</b></p> 	<p>Type 1 can develop at any age but is usually diagnosed in children, teenagers and young adults. Nationally, 18,000 youth are diagnosed each year.</p> <p>Type 1 is estimated at 5% of all adult diabetes cases.</p> 	<p>Treatment includes multiple injections of insulin a day. Insulin is delivered by manual injection or pump.</p> 

## COMPLICATIONS



Untreated hypoglycemia, or low blood sugar, can lead to seizures, loss of consciousness, and in severe cases death.

Hyperglycemia, or very high blood sugar, can lead to trouble seeing, confusion, drowsiness, and comas.

# GESTATIONAL DIABETES

## WHAT IS GESTATIONAL DIABETES?

Gestational diabetes is when pregnant women, who have never had diabetes before, have high blood sugars during pregnancy.



## PRIORITY POPULATION

The overall rate of gestational diabetes was 7.8 per 100 births. About 50% of women with gestational diabetes go on to develop type 2 diabetes.

## RISKS TO MOTHER AND CHILD

Blood sugar management supports a healthy pregnancy. There are increased risks of late-term pregnancy loss and preterm labor.

Women are 20-50% more likely to develop type 2 diabetes within 10 years of having gestational diabetes. Having gestational diabetes put the baby at a higher risk for:

- Being very large (9 pounds or more), which can make delivery more difficult
- Being born early, which can cause breathing and other problems
- Having low blood sugar
- Developing type 2 diabetes later in life

## REFERENCES

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Type 1  
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# Recommended Policies and Actions of the 2023 Diabetes Action Plan and Report

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The following recommendations were identified in combination by the Arizona Department of Health Services (ADHS) Diabetes Program; the Diabetes Action Plan and Report (DAP) Team; and the DAP Workgroup of the Arizona Diabetes Coalition. The participating individuals and organizations formally met and gathered consensus throughout the year-long process. The process involves using several data sources that combine surveys, community working sessions, subject matter expert recommendations, lived-experiences, and community testimonials to develop meaningful policies and actions to improve diabetes health outcomes.

The ADHS Diabetes Program led this effort by coordinating with stakeholders, identifying and compiling data, and finalizing the report. The DAP Report Team is comprised of designated representatives of state agencies and a non-profit agency that are legislatively mandated to submit diabetes-related data and participate in the development of the biennial report: the Arizona Health Care Cost Containment System (AHCCCS), the Arizona State Retirement System (ASRS), the Arizona Public Safety Personnel Retirement System (PSPRS), the Arizona Department of Administration (ADOA), and the American Diabetes Association (ADA). The DAP Workgroup of the Arizona Diabetes Coalition is an ad-hoc workgroup that convenes every two years in concurrent alignment with the DAP which provides community members access to the DAP process through workgroup member discussions and narrative submissions; and offer grassroots-level insights that may not be reflected in the current data sources.

The 2023 Diabetes Action Plan and Report identified policy and action recommendations, and are considered to be the most impactful directives in addressing the burden of diabetes in Arizona. These recommendations build upon the two previous biennial reports, 2019 and 2021 respectively.

## **Recommendation #1 – Provide the National Diabetes Prevention Program (NDPP) as a covered service (or benefit) by AHCCCS.**

Rationale: The NDPP is an evidence-based program focusing on healthy eating and physical activity. The NDPP has shown that people with prediabetes who take part in a structured lifestyle change program can cut their risk of developing type 2 diabetes by 58% (71% for people over 60 years old) (8). According to the American Diabetes Association, approximately 1 in 3 adults in Arizona have prediabetes, defined by blood glucose levels that are higher than normal but not high enough to be diagnosed as diabetes. Up to 70% of individuals with prediabetes will eventually develop diabetes (7). Diabetes is an expensive disease, and with such exorbitant costs, prevention is the key to cost-savings and healthier communities. In 2021, the total diabetes-related and diabetes-specific hospitalization for emergency department discharges costs totaled \$18,814,533,061 [Table 5]. In 2021, there were

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nearly 380,000 discharges from inpatient hospital care or the emergency department due to diabetes, with the majority of hospital stays occurring within the Medicare and Medicaid populations.

The ability for AHCCCS to provide coverage for NDPP services, would mean many prediabetic patients could see a delay or even the prevention of type 2 diabetes, heart disease, and stroke. According to the National Institutes of Health (NIH), recent data suggest that the difference between the total cost (direct and indirect) of caring for a patient with diabetes, as compared to a patient with prediabetes, may be as much as \$7,000 per year (8). AHCCCS provides coverage to over 2.4 million Arizonans, and the ability to provide the NDPP as a benefit will decrease the diabetes burden in Arizona and would have a massive impact on populations most at risk (9). Over time, AHCCCS and the state's health care system would spend less on diabetes treatment with early NDPP intervention. Offering the NDPP as a covered benefit would also help prevent Arizonans from having to manage a chronic condition later in life. Similar to the recent coverage of Diabetes Self-Management Training (DSMT) by AHCCCS that is referenced in Recommendation #3, legislative action is needed to expand coverage for NDPP. The path to NDPP coverage of as a benefit is different for each state, and for some states, their Medicaid agency has the authority to add a new benefit through rulemaking. This is not the case for Arizona. Because NDPP coverage implies budgetary considerations for matching federal funds, AHCCCS is required to include the NDPP in Arizona's Medicaid statute before covering it. A State Plan Amendment would be needed to either change or add language on services that would allow for NDPP coverage or include language to permit Medicaid reimbursement of the health care providers or organizations that will deliver the NDPP lifestyle change program to Medicaid beneficiaries. Community organizations, healthcare providers, and diabetes programs can help generate interest and engage with decision-makers to spark the necessary legislative action needed to provide coverage. It is important and beneficial for these community organizations to engage the legislature to increase their buy-in for support, help inform communities of the program, and to encourage cross-agency cooperation in implementing the program that will help ensure the long-term viability of NDPP in Arizona.

**Recommendation #2 – Encourage AHCCCS, Managed Care Organizations (MCOs), Accountable Care Organizations (ACOs), and private insurers to align their diabetes priorities with the 2023 Diabetes Action Plan and Report (DAP). Also, AHCCCS, MCOs, ACOs and private insurer providers should develop or improve standards of practice to enhance or increase screening, testing and referral initiatives that increase availability and access to the NDPP for their (health plan) members.**

Rationale: Medicare, Medicaid, state employee benefit plans, commercial health plans, MCOs, ACO, and employers should establish consistent and coordinated diabetes priorities and metrics that consider the experiences and expertise of community organizations that directly serve and understand the diverse populations that reside within their respective service areas or populations. These organizations can engage with groups like the Arizona Diabetes Leadership Council and Coalition and the Diabetes Program at ADHS to potentially work in tandem towards larger state or

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national goals, initiatives, or objectives related to addressing health equity. The 2023 DAP priorities are heavily focused on sustaining the NDPP, so diabetes organizations can work unitedly and forge formal partnerships and collaborations to achieve health equity by effectively reducing the rates of chronic disease in populations of focus and addressing disparities in accessing preventive services (12).

Increased screening and testing will allow for earlier diagnoses and creates an opportunity for earlier, immediate prediabetes intervention. Preventing diabetes or delaying the onset of diabetes by participating in an evidence-based lifestyle change program (NDPP), will allow health care systems to experience both positive net savings on medical care expenditures and a return on investment (ROI) (10). The NDPP has been shown to reduce the risk for diabetes in participants between the ages of 18 and 65: delaying or preventing the onset of type 2 diabetes. Participants in the NDPP achieved success with both losing weight and increasing exercise, effectively reducing the incidence of diabetes (11). With COVID-19 effects heightening health disparities among the high-risk communities of Arizona, prediabetes and diabetes can take center stage in building action plans and organizational priorities. Large employers and payer organizations should consider prioritizing prediabetes and diabetes and join the greater diabetes community to generate collective impact in reducing type 2 diabetes. The collective impact will help drive patient referrals to community-based NDPP organizations which will provide long-term program sustainability and strengthen public health and health care linkages to enhance Arizonans' access to care and services.

### **Recommendation #3 – Encourage all public and private health plans to provide 10 hours of Diabetes Self-Management Education (DSME), annually, as a covered service (or benefit).**

Rationale: In the 2021 DAP, one of the recommendations (Recommendation #2) was for AHCCCS to “[...] provide Diabetes Self-Management Education (DSME) as a covered service (or benefit).” The recommendation was conceived with cost-savings and reduced diabetes complications in mind. With AHCCCS coverage, people with diabetes would have more access to accredited DSME programming, and with proper education and support—individuals with diabetes would have better blood sugar control; prevent expensive diabetes complications, and avoid hospital admissions and readmissions. This recommendation informed the actions of members of the diabetes community to support legislation for this coverage.

In June 2022, Governor Ducey signed House Bill (HB) 2083 into law (13). After two previous bills, in two different sessions, HB 2083 was the third iteration of a DSMT bill that led to coverage. With HB 2083 signed, AHCCCS has set aside \$2.1 million dollars over 4 years to support reimbursement of accredited DSMT services. The bill requires AHCCCS to cover up to 10 hours per year of diabetes outpatient self-management training (DSMT) services for enrollees. This training would be covered if prescribed by a primary care practitioner, and includes personalized nutrition counseling, medication, testing education, and more. To ensure that Arizonans not covered by AHCCCS receive this similar benefit, this coverage must be extended to all public and private health insurance plans.

**Recommendation #4 – Develop a centralized data infrastructure and uniform referral process that links health systems, clinicians, payers, managed-care organizations, and community organizations to a statewide network of accredited DSME and CDC-recognized National DPP providers.**

Rationale: Increasing participant recruitment and referrals is vital for long-term sustainability and scalability of either accredited DSME or CDC-recognized NDPP programming. The process to get prediabetic or diabetic patients through a centralized referral system to the clinics to participate in NDPP or DSME programs has become increasingly important. Interoperability and bi-directional electronic referrals between healthcare providers and DSME or NDPP providers could play an instrumental role in achieving the health care needs of diabetic patients. To have a single state-wide referral system that links health systems, clinicians, payers, managed-care organizations, and community organizations to accredited DSME and CDC-recognized National DPP providers would require an electronic interface between the healthcare provider's electronic health record (EHR), the lifestyle change program's EHR, and/or electronic data management system. This can be achieved by leveraging the state's health information exchange (HIE), Contexture. The HIE could integrate with electronic health record (EHR) systems, patient portals and/or care management systems to streamline the referral process and to foster easier access to diabetes providers in the beneficiary's area (15). Electronic referral orders could be created within the EHRs. This technology solution could be launched as a pilot project with proper support and funding. In addition to EHR integration, other technical requirements to consider are the mechanisms for communication, creating electronic referral forms, patient identification and matching, referral linking/matching, ensuring the information is sent to the right provider, and the various supported document formats [16]. Providers could also use the direct messaging functionality that is a part of the EHR to refer diabetic patients using the electronic referral forms. For this, DSME and DPP providers would need to set up a direct address with the HIE. The direct addresses can then be made available to other providers for data exchange.

**Recommendation #5 -- Promote efforts to identify, manage, and address the social determinants of health (SDOH) that contribute to diabetes burden, in coordination with the 2021-2025 Arizona Health Improvement Plan (AzHIP).**

Rationale: Every five years the Arizona Department of Health Services develops a comprehensive, plan for the state that seeks to improve the health and wellness for all Arizonans. The 2021-2025 Arizona State Health Improvement Plan (AzHIP) was developed by convening a wide array of state and local partners to identify disparities and health priority targets; align efforts and resources; and generate collective impact through innovative and cross-cutting partnerships. The five (5) strategic priorities in the new iteration of the AzHIP build upon the 2016-2020 AzHIP, with COVID-19 impact and recovery helping to frame the planning process. The 2021-2025 AzHIP is centered around the health priority, Health Equity; and was developed through a collaborative approach where the stakeholders and

## House Bill 2258: Diabetes Action Plan and Report

planning participants were engaged through external meetings, partner surveys, and summit participation. The AzHIP Health Equity Priority focuses on “...the process by which health equity can become operationalized within communities, organizations/agencies, and systems; with a focus on data infrastructure, capacity, and sharing; enhanced community partnership and engagement; and moving further upstream to address policy, system, and environmental change” (6).

Health Equity is the foundational priority of the 2021-2025 AzHIP, and this framing places a larger emphasis on population and community-level outcomes, value-based care, and the Social Determinants of Health. While the COVID-19 pandemic exacerbated the historic health inequalities of Arizona’s high-risk communities (6), the evident high inequalities further reinforces the need to mitigate the disproportionate diabetes burden by using SDOH as intervention targets to achieve health equity (17, 18). This is especially true for the high-risk populations in Arizona. High diabetes prevalence, high diabetes care costs, lack of healthcare access, and other health disparities drive the need to understand and reduce the burden and impact of SDOH (18, 19). As this shift is seen in health care, various national groups and professional associations like the American Diabetes Association (ADA), National Academy of Medicine, Society of General Internal Medicine, the American College of Physicians, and American Academy of Pediatrics have produced statements, priorities, and calls to action to focus on addressing SDOH at many levels (individual, community, organizational, and policy levels) (18). Included in the 2021-2025 AzHIP is the Health in All Policies/Social Determinants of Health Priority enhancing the call to action to address SDOH. This priority focuses on five key areas to address: economic stability; education; social and community context; health and health care; and neighborhood and built environment. These AzHIP priorities support efforts to address SDOH contributors to diabetes burden.

While it is important to directly manage diabetes through medical interventions; engaging and promoting Arizona-specific programs, initiatives, resources and support will help provide the necessary linkages between community groups, health systems, and service providers. Health plans, health coalitions, health committees, and advocacy groups should consider supporting the identified efforts and suggested topics in this DAP recommendation. These organizations are also encouraged to co-align diabetes efforts with the Health Equity and Health in All Policies / SDOH Priorities of the State’s 2021-2025 AzHIP as it recommends statewide action to “improve government and private sector systems to connect individuals to health and support services”. Diabetes burden can also be addressed by sharing SDOH related resources with providers to better identify and manage diabetes. Other efforts to align may include: increasing access to safe and affordable active living spaces or programs; affordable, healthy foods and beverage options; internet connectivity along with technological literacy; individual/family health and media literacy; and health education offered where people work, learn, play and worship.

**Recommendation #6 – Continue to expand diabetes prevention and control activities in Arizona’s rural and urban tribal communities that include capacity building, technical assistance, and community engagement.**

Rationale: In 2021, the American Indian/ Alaska Native (AI/AN) population in Arizona has some of the highest prevalence of diabetes, 26.8% respectively, as compared to Arizona’s prevalence (11.0%). The AI/AN population continues to see health disparities, even after seeing a drop in prevalence from 2018 to 2020. ADHS and statewide partners can support initiatives that address the factors that affect tribal health disparities. Some notable issues that may affect tribal individuals, especially in light of COVID include internet connectivity and food insecurity. Historically, tribal communities have seen increased level of obesity, lack of healthy foods, and communication disparities (20). Community and tribal organizations can collaborate on initiatives that address these challenges; remove the barriers to diabetes prevention support; and provide resources to maximize individual and population health outcomes. These activities will serve as early prediabetes interventions that will potentially have a massive impact in diabetes rates in Arizona’s rural and urban tribal communities.

# Strategies, Services and Programs Addressing Diabetes in Arizona

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The Arizona State Legislation mandated the Arizona Department of Health Services, the Arizona Department of Administration, Arizona Health Care Cost Containment System, Arizona State Retirement System, Arizona Public Safety Personnel Retirement System, the Arizona Diabetes Coalition and Leadership Council and Arizona Diabetes Stakeholders to provide action plans for how each agency addresses the burden of diabetes in Arizona. The following presents various state agencies and organizations' diabetes initiatives that are currently implemented to serve the people of Arizona.

## *Arizona Department of Health Services (ADHS)*

The Arizona Department of Health Services uses a multi-prong approach to address several behavioral and physical risk factors for its Diabetes Program. ADHS has six divisions—one of which is the Division of Public Health Prevention Services, where the Bureau of Chronic Disease & Health Promotion is housed. The Bureau comprises of several offices, one of which is the Office of Chronic Disease and Population Health. In the Office of Chronic Disease and Population Health, the Diabetes Program collaborates with the Cardiovascular Program, Community Health Worker Workforce Program, the Cancer Program and Worksite Wellness Program. ADHS works in areas involving school health, access to nutritious foods, physical activity, community design, worksite wellness, community and clinical linkages, and utilization of a non-physician workforce to reach into rural and disparate communities.

The Arizona Department of Health Services' Diabetes Action Plan and Report strategies align with the ADHS' current [2023 Strategic Plan](#) and [the Arizona Health Improvement Plan 2021-2025](#) (AzHIP) and focuses on the entire public health system at the state, county and community level. ADHS' leading public health issues were identified as impacting the health and quality of life for a significant number of Arizonans. All of Arizona's 15 county health departments conducted Community Health Assessments using surveys, focus groups, interviews, and community stakeholder meetings to gather information about local health issues. Almost 10,000 community members and key stakeholders across the state participated in exploring and establishing the local public health priorities.

Along with stakeholder input, several key factors were considered in developing the AzHIP priorities: magnitude of the problem, mortality/morbidity, potential impact (winnable battle), cost effectiveness, existence of evidence-based models, political feasibility, community readiness, disparities, current trends and quality of life. The AzHIP identifies strategic issues and desired health outcomes to be achieved in a coordinated effort of many partners, striving for measurable success over a five-year period, beginning in 2021 and ending in 2025.

# House Bill 2258: Diabetes Action Plan and Report



ARIZONA DEPARTMENT OF HEALTH SERVICES

STRATEGIC MAP: 2022-2027

Our Vision:

*Health and Wellness for all Arizonans*

Our Mission:

*To promote, protect, and improve the health and wellness of individuals and communities in Arizona*

## Strengthen Arizona's Public Health System

	A	B	C	D
	Improve Health Outcomes	Promote Public Health and Safety	Transform and Modernize Public Health	Foster Team Member Inclusion and Excellence
1	Ensure Agreements Reduce Health Disparities	Prepare for and Respond to Public Health Emergencies	Build Awareness of Public Health Value	Recruit and Retain Top Talent
2	Identify and Address Emerging Health Issues	Promote Healthy Relationships and Non-violent Behavior	Mobilize Community Partnerships	Provide Opportunities for Team Member Growth and Development
3	Support State Hospital Becoming a Center of Psychiatric Excellence	Address Quality of Care Issues and Public Health Risks	Enhance Data Management Capabilities	Improve Coordination and Consistency Across Programs
4	Align Services with Needs of Vulnerable Populations	Empower Communities for Healthy and Safe Environments	Streamline Access to, and Enhance, Data Quality and Systems	Prioritize Team Member Health and Well-being
E	Advance Health Equity			
F	Implement 2021-2025 Arizona Health Improvement Plan			
	Implement Best, Promising, and Evidence-Based Practices			
	Practice Continuous Quality Improvement through AMS			
	Foster Communication, Transparency, and Collaboration			

### Core Values

**Integrity:** We do the right thing

**Collaboration:** We prioritize working together

**Accountability:** We do what we say we will do

**Equity Focused:** We value and respect diverse life experiences

**Excellence:** We do incredible things

**Dedicated:** We are public health

### **Arizona Health Improvement Plan (AzHIP)**

#### **Background and Past**

In March of 2020, the AzHIP Summit was hosted to celebrate the accomplishments of the past five years, and introduce the Arizona Health Improvement Plan for 2021-2025. AzHIP workgroup participants included diverse stakeholders from around Arizona and ADHS programmatic staff that met throughout the years on specific disease priorities to learn more about the AzHIP new direction. The AzHIP Diabetes Workgroup was one of the disease-specific priorities from the 2016-2020 AzHIP plan. The goal was to reduce deaths attributable to diabetes by 10% through three strategies.

#### **2016-2020 AzHIP Diabetes Workgroup**

**GOAL: REDUCE DEATHS ATTRIBUTABLE TO DIABETES BY 10%**

- 1. Increase the utilization of an integrated, team-based approach to the care and treatment of diabetes.*
- 2. Promote the use of established diabetes clinical guidelines and increase participation in diabetes self-management education.*
- 3. Increase awareness of prevention and management practices for diabetes and prediabetes.*

The workgroup met from 2016-2018, and due to the new focus of the 2021-2025 AzHIP workgroups, the AzHIP Diabetes Workgroup merged its efforts with the Arizona Diabetes Coalition starting in January 2021. At the end of the 2016-2020 AzHIP period, all of the workgroup participants were invited to continue addressing the issue of diabetes in any of the five new workgroups Health Equity, Health in All Policies / Social Determinants of Health, Mental Well-being, Rural & Urban Underserved Health, and Pandemic Recovery & Resiliency, or by participating in the Arizona Diabetes Coalition. The diabetes work and progress that came from the Diabetes Workgroup during this time period directly informed the goals and strategies developed in the 2019 State Engagement (StEM) Meeting. The resulting StEM Action Plan was aligned with the AzHIP Diabetes Workgroup goal to address the three strategies.

#### **AzHIP Present and Future**

In 2021, the AzHIP 2021-2025 was released. A major difference between the previous AzHIP, was the number of workgroups and action items. It marked a shift in moving from a disease-specific focus to an upstream approach in addressing the critical health needs of the state. The new plan focuses on the implementation of the five new action items. ADHS is also charged with sharing progress with partners for the 2021 - 2025 priorities:

- Health Equity
- Health in All Policies / Social Determinants of Health
- Mental Well-being
- Rural & Urban Underserved Health
- Pandemic Recovery & Resiliency



### ***State Engagement Plan Completion – 2021***

In order to promote the expansion of the National Diabetes Prevention Program (NDPP), the CDC and the National Association of Chronic Disease Directors (NACDD) developed the NACDD/CDC State Engagement Model based on a partner engagement approach. The model works to maximize stakeholder commitment, action and coordination. NACDD selects and partners with various health departments around the country to convene the State Engagement Meetings which brings stakeholders from all across the diabetes field: health systems, tribal groups, community-based organizations, faith-based organizations, insurers, employers, to gather consensus and develop an implementation plan to sustain and scale the NDPP. On June 25-26, 2019, the Arizona Department of Health Services, a team of NACDD facilitators, and key stakeholders participated in a State Engagement Meeting. On the first day, presenters updated participants on the “national landscape” of diabetes and described efforts currently taking place in the state. On the second day, NACDD facilitators led participants through a series of small group exercises to help them draft a National DPP Action Plan for Arizona that addresses four areas: 1. Increasing screening, testing, and referrals; 2. Increasing coverage; 3. Increasing awareness; and 4. Increasing availability. Through this process, participants identified key action steps and resource needs and made commitments to specific action steps their organizations can either support or lead. The plan addressed the four pillars of the NDPP with specific measures, strategies and goals. Although some parts of the plan are not finalized (coverage and availability goals), the Action Plan helps guide diabetes work. In March 2020, a StEM Workgroup was formed by re-inviting the stakeholder participants and including new members from the Arizona Diabetes Coalition. This workgroup met throughout the Action Plan period and provided updates to the Coalition on the Plan’s progress.

### ***State Engagement Plan 2021 and Beyond***

The Arizona Department of Health Services (ADHS) concluded the three-year action plan. ADHS engaged a network of key stakeholders to develop and implement an action plan for scaling and sustaining the National Diabetes Prevention Program (NDPP). ADHS convened 88 organizations from various sectors to develop the plan that addressed increasing awareness of prediabetes and programming; increasing the screening, testing and referrals; and increasing the availability of CDC-recognized programs. A Prediabetes media campaign was developed, which included traditional outdoor media (billboards and posters) and social media messaging. StEM partners used the electronic risk-test to enroll at-risk individuals and also implemented outreach strategies that educated patients and providers on the National DPP. Through this collaborative effort and during the StEM Action Plan period, Arizona’s CDC-recognized organizations increased from 16 to 22 and laid the foundation for future projects for consideration such as an Arizona Umbrella Hub Arrangement or Arizona NDPP Referral Network.

### ***ADHS-Led Initiatives: Evidence-Based Programs, Projects and Best Practices***

#### **Diabetes Self-Management Education:**

Diabetes Self-Management Education and Support (DSMES) is the foundation of care for people with diabetes. DSME is a well-defined process that educates a person with diabetes on how to manage their diabetes by teaching self-care behaviors including medication management, being active and inclusion of healthy foods (22). DSMES also help people make informed decisions regarding their care, problem solving and healthy coping strategies. DSMES have been shown to be a cost-effective approach to reducing hospitalizations and diabetes related health care costs and is considered a key component to patient-centered care. Three national organizations (American Diabetes Association, Association of Diabetes Care and Education Specialists and Self-Management Resource Center (formerly Stanford Chronic Disease Self-Management Program (CDSMP)), using evidence-based practices and curriculum, accredit or recognize diabetes education programs to ensure that they are following national standards on diabetes self-management training (22). Nationally accredited and recognized programs may be eligible for insurance reimbursement with a physician referral if a State has Medicaid coverage or if the accredited program is a Medicare supplier. Despite reimbursement opportunities, it is widely known that DSMES is an underutilized program. In addition to accredited programs such as DSME, many community-based organizations offer non-accredited diabetes education classes that focus efforts on healthy eating.

#### **National Diabetes Prevention Program (NDPP):**

The National Diabetes Prevention Program was launched by the Centers for Disease Control and Prevention in 2012 after results of a 3-year research study and several translational studies concluded that research participants greatly reduced their overall risks of developing type 2 diabetes. The study results were consistent across gender, race and socioeconomic status. Differences were noted across age; 58% diabetes risk reduction was noted in adults between 18-59 whereas participants over the age of 60 showed greater risk reduction - 71%. The results of the DPP research study suggested that millions of people in the United States with prediabetes can lower their risk of developing type 2 diabetes by losing a modest amount of weight through decreased fat and calorie intake and by engaging in moderate intensity physical activity at least 150 minutes each week. The NDPP was determined by the Department of Health and Human Services; Office of the Actuary to reduce healthcare costs without reducing the quality of care and thus was [certified](#) in 2016 and [recertified](#) in 2017.

The NDPP is a year-long structured program delivered in two distinct phases: 16 weekly 1-hour sessions in the first 6 months followed by a second six-month phase where participants meet at least once per month or six times for the remainder of the program. The program is facilitated by a trained lifestyle coach on the CDC-approved evidence-based curriculum. During the sessions, participants

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interact with fellow participants and the lifestyle coach, while focusing on behavior modification, managing stress and peer support.

The CDC-led NDPP is a partnership of public and private organizations across the nation working together to build an infrastructure for nationwide delivery and sustainability of the evidence-based lifestyle change program. Over 1300 organizations have registered with the CDC to deliver the NDPP in community-based organizations, work sites, healthcare facilities and places of worship. Only the Preliminary and Full CDC-recognized National DPP are eligible for private insurance reimbursement and Medicare reimbursement and can be utilized without a physician referral or copay. As of printing of this report, **thirty-one (31)** CDC-recognized programs offer the NDPP throughout Arizona. Several non-recognized organizations are also offering the Diabetes Prevention Program, including tribal locations and non-profit agencies. In order to provide more detailed information about the success of the national diabetes prevention program, phone calls were made to the contacts on the list of CDC approved providers in Arizona. To read the full narrative report and findings, please visit Appendix 5.

### **General Funding Information:**

Arizona Department of Health Services receives CDC cooperative funds which are used to support state-level diabetes personnel, operating costs, support epidemiological and evaluation efforts, support diabetes coalition efforts, and support special projects related to the prevention and management of diabetes within the State of Arizona. Previously, under the *“State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health (CDC 1305)”* grant from 2013-2018, Arizona had distinct strategies related to diabetes:

- Promote reporting of blood pressure and A1c measures; and as able, initiate activities that promote clinical innovations, team-based care, and self-monitoring of blood pressure
- Promote the awareness of prediabetes among people at high risk for developing type 2 diabetes
- Promote participation in ADA-recognized, AADE-accredited, state-accredited/certified, and/or Stanford licensed DSME programs
- Increase the use of health-care extenders in the community in support of self-management of diabetes

Building upon the CDC 1305 strategies, Arizona continues the great diabetes work through a new five-year funding opportunity; *“Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke (CDC 1815)”*, which began in October 2018. Strategies are designed to build capacity of diabetes prevention programming and diabetes self-management within rural and disparate communities using a collaborative, coordinated and community driven approach. Strategies include:

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- Improve access to and participation in ADA-recognized/ADCES-accredited DSMES programs in underserved communities
- Increase engagement of pharmacists in the provision of medication management or DSMES for people with diabetes
- Assist healthcare organizations in implementing systems to identify people with prediabetes and refer them to a CDC-recognized lifestyle change program for type 2 diabetes prevention
- Implement strategies to increase enrollment in CDC-recognized lifestyle change programs for the prevention of type 2 diabetes
- Develop a statewide infrastructure to promote long-term sustainability/reimbursement for Community Health Workers as a means to establish or expand their use in
  - a) CDC-recognized lifestyle change programs for type 2 diabetes prevention and/or
  - b) ADA-recognized/ADCES-accredited DSMES programs for diabetes management.

### ***CDC 1815 Grant – Diabetes***

#### **Overview**

The CDC 1815 grant funds the areas of diabetes, heart, and stroke, and provides the resources for the necessary activities to develop and support the implementation of the National Diabetes Prevention Program in Arizona. Current grantees were identified and selected for different capacities. The idea to expand NDPP efforts includes: increasing the amount of available accredited prevention or self-management programs; expanding referral capacity and referral systems to these programs; a funding mechanism for the NDPP-providing entities and the actual participants; and the necessary technical assistance and training. Funding can be an issue in the process of establishing a CDC-recognized diabetes prevention program or when running an accredited diabetes self-management program.

The Diabetes Prevention and Control Program (Diabetes Program) at the Arizona Department of Health Services administers and manages the diabetes contracts of the CDC 1815 grant funding. The grantees were selected from across Arizona to maximize the reach and include high-risk groups in disparate geographic locations. Many direct service organizations that are well-established among rural, underserved, and vulnerable populations (including border, refugee, and tribal communities) are currently active and focused on implementing the CDC 1815 grant strategies. Current partners include:

- Adelante Healthcare
- Clinical Pharmacy Innovation Services, LLC
- Davidson and Belluso
- Lenartz Consulting
- North Country HealthCare
- St. Vincent de Paul Family Wellness Center
- University of Arizona; Cooperative Extension

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- Valleywise Health
- VH Cullen Consulting
- Yavapai County Health Department
- YM Solutions, LLC.
- Yuma County Health Department

### **Prediabetes Media Campaign - Mission Possible / Agents of Change**

Today, one in every three adults has prediabetes and doesn't even know it. Arizona residents are underdiagnosed for prediabetes because they are unaware of their risk factors and are not routinely screened for diabetes by their primary care providers. The Agents of Change (26) campaign is healthcare provider-focused and addresses low rates of screening and referrals to a CDC-recognized National Diabetes Prevention Program (NDPP). The Mission Possible (27) campaign is more consumer-driven and expresses the need for awareness, being proactive about asking for screenings, and more importantly that prediabetes is reversible. The primary goals of the Prediabetes Media Campaign are to make consumers aware of the risk factors for diabetes while encouraging screening and referrals to a CDC's NDPP.

The work done to date has evolved from when ADHS worked with Urias Communications to build ADHS microsites, educational videos, posters, brochures and toolkits, which was supported with CDC 1305 grant funds. Current efforts underway with Davidson and Belluso Advertising agency have been effective due to purposeful marketing in specific areas using Google Analytics, various publications, a strong social media presence and billboard placement in key areas in Phoenix, Mesa, Yuma, Tucson, and along the Interstate-17 in parts of northern Arizona.

### **ADHS-led Tribal Support**

In 2021, through funding from the Centers for Disease Control and Prevention (CDC) 1815 grant, ADHS completed the 2021 ADHS DPP-DSMES Report. This report defined the following opportunities to support tribal health systems: increase staff training and development; increase the capacity of tribal partners and communities to building diabetes prevention programming; and assist tribal programs with acquiring accreditation; and increase technical support (Appendix 5). The findings and considerations from the report focused ADHS' efforts to engage tribal nations and organizations, foster stronger connections between tribal partners working in diabetes prevention and control, and build partnerships to increase participation in the Arizona Diabetes Coalition Tribal Workgroup. ADHS collaborates with the Tribal Workgroup of the Arizona Diabetes Coalition. The Tribal Workgroup continually assesses the diabetes program-related support needs of Arizona's Tribal health programs, and updates the workgroup's charter to align with the Coalition's current priorities, projects, and goals. A diverse and active Tribal Workgroup provides advise to the State regarding diabetes support and resources.

### ADHS-led Progress with Tribal Partners

Recommendation #6 was first included in the Arizona Diabetes Action Plan and Report 2021 to encourage ADHS, the Arizona Diabetes Coalition, tribal nations, and tribal organizations to collaborate to focus on diabetes prevention and control activities for tribal communities in Arizona.

In the Fall of 2022, the ADHS Diabetes Program proposed a new activity and received CDC 2103 COVID Health Disparities grant funding to continue to collaborate with the Tribal Workgroup and other Tribal groups to organize a Tribal diabetes conference highlighting COVID impact on Arizona's Tribal population for those at risk for diabetes and burdened by the management of the disease and to provide scholarships for tribal organizations for lifestyle change coach training opportunities as capacity building. This new project is an example of a State-level initiative that is directly informed by the previous 2021 DAP Recommendation #6 and is inclusive of the voice of Tribal Nations; informed by Tribal survey data; and reflective of the need to build capacity following the extreme COVID impact that delayed recovery and created challenges to access services. The planning process for the Tribal Conference is also a crucial opportunity that creates potential to build meaningful relationships with Tribal ITUs (Indian Health Service/Tribal Health Systems/Urban Health Centers) and non-tribal health departments; strengthen efforts to coordinate further support; and acquire future funding for other Tribal programmatic efforts.

Tribal organizations ITUs, Tribal diabetes programs, and other members of the Tribal Workgroup will serve as Tribal Conference Planning Committee members along with ADHS Tribal liaison. The Tribal Conference Planning Committee will consider historical risks such as increased levels of obesity, lack of healthy foods, lower access to medical care or DSMES services, and communication disparities (18, 20). Other notable issues that may affect Tribal members, especially in light of COVID, may include internet connectivity, access to healthcare for tribal members diagnosed with chronic health conditions like diabetes due to closures of healthcare systems, delivery of essential items to communities, delay in critical care, lack of transportation, no running water/electricity and food insecurity (17; 21; 45).

Through the conference ADHS intends to receive (hear) the notable issues in addition to attendees' input. Through a collaborative approach, ADHS and Tribal representatives may initiate proactive discussions to begin addressing these challenges. The conference will convene Tribal Healthcare systems and community organizations that are addressing access to diabetes services; sharing prevention efforts; or offering support and resources in their respective communities during the pandemic. ADHS intends to partner with Tribal organizations during the conference and reach consensus on how ADHS may continue to support existing or future Tribal programmatic efforts. By hosting the conference and awarding DSME application support or NDPP lifestyle change coach training scholarships, Tribal organizations will have the opportunity to build much needed capacity as

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it allows Tribal organizations to expand their diabetes prevention and management services. Offering this support makes DSME accreditation and NDPP lifestyle change coach training less cost-prohibitive.

### ***CDC 2103 Grant – Tribal Diabetes Health Equity Conference***

#### **Overview**

The Office of Chronic Disease and Population Health – Diabetes Program received funding to convene a gathering of rural and urban tribal partners that are reaching underserved populations across the state; the most important counties are those with either no (or very few) CDC-recognized diabetes prevention or accredited self-management programs: Apache, Gila, Cochise, La Paz, and Greenlee. This conference will focus on addressing COVID related barriers and successes in diabetes prevention and management within Arizona’s high-risk communities. The event will have a secondary feature as a workforce capacity building tool to subsequently award Diabetes Self-Management Education (DSME) training and National Diabetes Prevention Program (NDPP) Lifestyle Change Coach training scholarships to individuals and organizations reaching target populations. The project will be executed in collaboration with the members of the Arizona Diabetes Leadership Council (ADLC) and the Health Equity and Tribal Workgroups of the Arizona Diabetes Coalition (ADC). The ADLC and ADC work collaboratively with the Diabetes Program at the Arizona Department of Health Services in designing, implementing, and evaluating community-driven strategies to eliminate health disparities in diabetes; promote the collaboration and communication among organizations and individuals active in the field of diabetes prevention and control. The organizations and members of the Coalition’s workgroups also help inform ADHS to guide an efficient, statewide, comprehensive approach to diabetes services and information.

#### **Project Details**

The symposium/conference planning team began meeting in October 2022 and will develop agenda items, breakout sessions, and relevant topics addressing: COVID-19 impact on diabetes prevention and management within the Tribal, Spanish-speaking, and African-American communities. Insight and input on needs of members, providers and agencies working together to ensure quality diabetes care and prevention services for all high-risk communities will be discussed and an opportunity for Tribal and Spanish-speaking networking across Arizona to share resources among providers, agencies, members and stakeholders. The audience for the symposium will be federally qualified health centers (FQHCs), Tribal diabetes programs, Tribal health systems, Spanish NDPPs, accredited and non-accredited DSME programs, diabetes management support staff, payers, clinicians, and community health workers involved in diabetes prevention education. The planning team will promote this symposium amongst Tribes not involved in the ADC and within counties with fewer or none accredited or recognized diabetes programs (Apache, Gila, Cochise, La Paz, and Greenlee). A tentative date for the symposium was proposed for October-November of 2023.

### ***New Collaborations – Family Diabetes Prevention Program (FDPP)***

#### **Overview**

Type 2 diabetes tends to run in families and although research has established that type 2 diabetes can be prevented or delayed in high-risk adults, many underserved families in Arizona do not have access to diabetes prevention services. To address this gap, a new NIH-funded research study will test whether a family-based diabetes prevention intervention can reduce risk factors for type 2 diabetes among high-risk Latino families. The study is a collaboration between **Arizona Department of Health Services, Arizona State University, Phoenix Children’s Hospital, St. Vincent de Paul Medical and Dental Clinic,** and the **Valley of the Sun YMCA**. In addition to testing the family-based interventions, the team will build relationships with community agencies across the State of Arizona in order to build capacity for delivering family-based diabetes prevention services. The project acknowledges the importance of partnerships across various sectors to meet the needs of underserved populations. The long-term goal is to establish the data, relationships, and infrastructure that will support evidence-based health promotion and diabetes prevention programs for high-risk families across the state.

### ***National Association of Chronic Disease Directors (NACDD) Grant – Medicaid Beneficiary Enrollment Project Pilot (MBEP)***

#### **Overview**

Establishing and sustaining coverage for the National Diabetes Prevention Program (NDPP) Lifestyle Change Program through Medicaid is a key factor in promoting health equity for vulnerable populations at risk of developing type 2 diabetes. The Medicaid Beneficiary Enrollment Project (MBEP) provides an opportunity for states to receive funding and group-based technical assistance from the Centers for Disease Control and Prevention’s (CDC) Division of Diabetes Translation and the National Association of Chronic Disease Directors (NACDD) to increase access to and enrollment in the (NDPP) for Medicaid beneficiaries. Arizona’s Medicaid agency, the Arizona Health Care Cost Containment System (AHCCCS), provides coverage by contracting care and services to managed care organizations (MCOs). The MCOs may have different target populations and coverage of benefits and must adhere to legislative mandates and rules in providing coverage and benefits. For this reason, legislative action is needed for the state’s Medicaid agency to expand coverage of benefits and services. Expanding NDPP coverage will provide cost-savings to payers, providers, and health systems while improving health outcomes and reducing comorbidities. Piloting this enrollment project will generate the necessary data to show improved health outcomes, the scalability of the efforts, and needed agency/legislative action to build the case for overall Medicaid coverage.

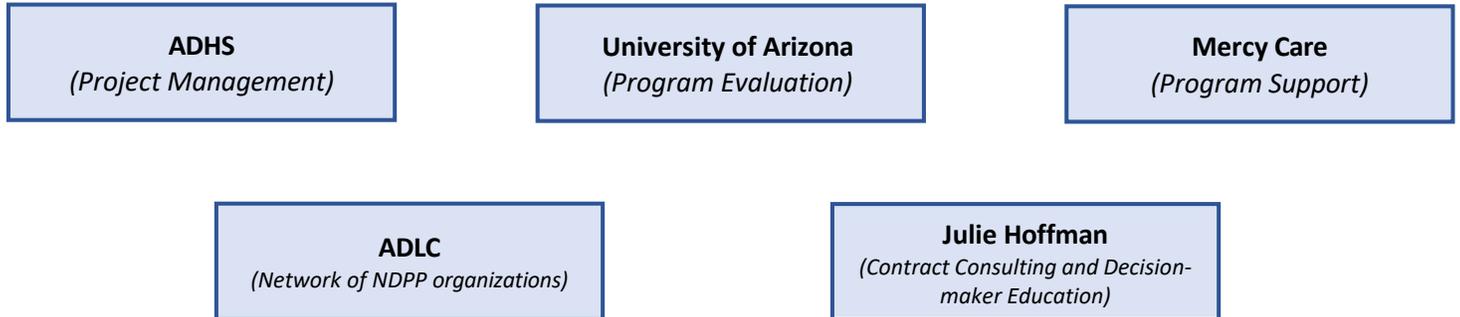
#### **Project Goal**

ADHS aims to establish a pilot project with Mercy Care, a MCO, that will generate the necessary data to continue to build the state’s case for Medicaid coverage of the National Diabetes Prevention Program (NDPP). ADHS seeks to partner with an MCO to enroll 50 eligible participants into a NDPP

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program as a covered benefit by contracting directly with the network of ADHS' and Arizona Diabetes Coalition's CDC-recognized NDPP programs.

### Partnering Organizations:



### *Arizona Healthcare Cost Containment System (AHCCCS)*

Founded in 1982, the Arizona Health Care Cost Containment System (AHCCCS) is Arizona's Medicaid program. Built on a system of competition and choice, AHCCCS is a \$12 billion program that operates under an integrated managed care model, through a Research and Demonstration 1115 Waiver. Contracted health plans coordinate and pay for medical services delivered by more than 70,000 health care providers for 1.9 million individuals and families in Arizona.

Arizona has the distinction of being the first state to create a “mandatory” Managed Care Model, meaning that with the exception of the American Indian population, who under federal law cannot be mandated into managed care, all Medicaid enrollees must be enrolled in an MCO, including dual eligible and long-term care members.

AHCCCS MCOs are prepaid a capitation for the services provided to its membership, and are thus incentivized to promote health and wellness, ensure members have access to preventative services, and be innovative in identifying ways to improve outcomes, while also lowering costs.

#### *Disease/Chronic Care Management:*

MCOs focus on diabetes as part of their requirement to implement a Disease/Chronic Care Management Program [42 CFR 438.3(s)] that focuses on members with high risk and/or chronic conditions that have the potential to benefit from a concerted intervention plan. The goal of the Disease/Chronic Care Management Program is to increase member self-management and improve practice patterns of providers, thereby improving healthcare outcomes for members. The Disease Management Program includes, but is not limited to:

- Members at risk or already experiencing poor health outcomes due to their disease burden
- Health education that addresses the following:
  - Appropriate use of health care services
  - Health risk-reduction and healthy lifestyle choices including tobacco cessation
  - Screening for tobacco use with the Ask, Advise, and Refer model and refer to the Arizona Smokers Helpline utilizing the proactive referral process
  - Self-care and management of health conditions, including wellness coaching
  - Self-help programs or other community resources that are designed to improve health and wellness
  - EPSDT services for members including education and health promotion for dental/oral health services and
  - Maternity care programs and services for pregnant women including family planning
- Interventions with specific programs that are founded on evidence-based guidelines

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- Methodologies to evaluate the effectiveness of programs including education specifically related to the identified members' ability to self-manage their disease and measurable outcomes
- Methods for supporting both the member and the provider in establishing and maintaining relationships that foster consistent and timely interventions and an understanding of and adherence to the plan of care
- Components for providers include, but are not limited to:
  - Education regarding the specific evidenced based guidelines and desired outcomes that drive the program
  - Involvement in the implementation of the program
  - Methodology for monitoring provider compliance with the guidelines and
  - Implementation of actions designed to bring the providers into compliance with the practice guidelines

AHCCCS has developed and implemented performance metrics to monitor MCO compliance in meeting contractual requirements related to the delivery of care and services to members. AHCCCS Performance Measures (PMs) are based on CMS Core Measure Sets, National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) measures, Substance Abuse and Mental Health Services Administration (SAMHSA) quality measures, and other resources.

The 2020 MCO performance measures AHCCCS has established related to diabetes care include:

- Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Testing (HA1C)-Minimum Performance Standard (MPS)-86%
- Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%) (HPC)- MPS 43%
- PQI 01: Diabetes Short-Term Complications Admission Rate (PQI 01): 16 Per 100,000
- Member Months
- Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications (SSD)-Baseline Measurement Year
- Diabetes Care for People with Serious Mental Illness: Hemoglobin A1c (HbA1c) Poor Control (>9.0%) (HPCMI)-Baseline Measurement Year

### ***American Indian Medical Home and Diabetes Education:***

In October 2017, AHCCCS implemented a new program called the American Indian Medical Home (AIMH) for the American Indian population enrolled in Fee-For-Service (FFS). The AIMH provides qualified Indian Health Service (IHS) or Tribally operated 638 facilities tiered per-member, per-month payments for offering their enrolled members care coordination, including accredited diabetes education, and for participation in the HIE. At this time over 9,000 American Indian members are participating in AIMH care coordination.

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In Calendar Year 2018, AHCCCS reimbursed approximately \$241.6 million for primary diagnosis diabetes related services for 142,384 distinct members. In addition, AHCCCS reimbursed \$290 million related to co-occurring conditions, \$211.3 million for pharmacy services, and \$22 million for diabetic supplies.

In Calendar Year 2019, AHCCCS reimbursed approximately \$251.7million for primary diagnosis diabetes related services for 144,566 distinct members. In addition, AHCCCS reimbursed \$348.9 million related to co-occurring conditions, \$246.4 million for pharmacy, and \$22.3 million for diabetic supplies. In 2018 and 2019, the total reimbursement for diabetes primary diagnosis and co-occurring conditions, pharmacy and supplies totaled approximately \$1.38 billion.

To read AHCCCS' complete data, usage and financial report, please visit Appendix 5.

### *Diabetes in Arizona's American Indian Communities*

#### **Background and Efforts**

The U.S. Congress established the National Special Diabetes Program for Indians (SDPI) in 1997, providing \$30 million per year and authorization of five-year grants. However, Congressional extensions of SDPI have been provided on a shorter-term basis since September 2017. The current extension ends on December 11, 2020. SDPI has been operating at the same level of funding since 2002. "Tribes in Arizona and across the nation recommend increasing SDPI funding to \$200 million per year with an inflation adjustment for the over 400 SDPI programs conducted in Tribal and Urban Indian communities in 35 states."

Evidence of the SDPI success is demonstrated by the rates of end-stage renal disease (ESRD) that have begun to decline among the American Indian population which can be attributed to the frontline prevention and educational activities that SDPI programs conduct in Tribal communities. Diabetes mellitus (DM) is the 5th leading cause of death across all ages in the American Indian population in the West Region that include the states of Arizona, Nevada and Utah served by the Phoenix Area Indian Health Services (IHS). In the West Region, DM is a top reason for ambulatory visits among the Tribes as well as a large leading cause for inpatient visits (23).

#### **Navajo Nation**

The Navajo Nation Special Diabetes Program (NNSDP) is federally funded through the SDPI. There are eight service areas located throughout the Navajo Nation with one serving as the Administration Office working closely with each of the other seven agency offices. The primary objective is to provide diabetes prevention through nutrition education and promoting physical activities to the diabetes program participants. The program puts key efforts to promote healthy lifestyle changes: improving nutrition and diet using cultural and traditional methods while monitoring and engaging individuals to attend exercise classes at wellness centers. The NNSDP sees success in working directly with

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communities. Efforts began in 2018 with a community assessment regarding diabetes prevention which led to more visibility in communities, including large community events. These efforts and outreach have received significant feedback from community members and leaders.

The NDPP Lifestyle Intervention has been a recommendation for implementation state-wide. The Native Lifestyle Balance (NLB) Program is recommended for tribal participants because of some of the unique challenges affecting the individuals, such as being unable to participate due to transportation and weather conditions. NLB incorporates cultural and traditional nuances and the program staff does its best to work with the participants to make up missed lessons to ensure they reach the completion of 16 weeks.

### **ITCA**

The Inter Tribal Council of Arizona, Inc. (ITCA) is a 501(c)(3) non-profit Tribal organization in Phoenix, Arizona. The ITCA was established in 1952 to provide a united voice to American Indian Tribal governments in Arizona. The ITCA provides training and technical assistance services to Tribes in the Phoenix and Tucson Indian Health Service Areas through more than thirty programs. Although Tribes in Arizona are members of ITCA, the ITCA Health and Human Services (ITCA HHS), Tribal Epidemiology Center, and the Tribal Water programs provide services to all forty-eight Tribes in the Phoenix and Tucson IHS Areas, which includes Tribes in Arizona (AZ), Nevada (NV), and Utah (UT).

The ITCA HHS was awarded the Center for Disease Control and Prevention's (CDC) Good Health and Wellness in Indian Country (GHWIC) grant in 2014 and 2019. The current GHWIC grant focuses on Chronic Disease prevention targeting 4 Strategy Areas. Those Strategy Areas include:

1. Implement evidence-informed and culturally-adapted Policy, System, and Environmental changes (PSE) to **prevent obesity** by improving Tribal food and beverage programs and systems, improving land use designs to increase physical activity, and increase support for breastfeeding lactation support services to the community and breastfeeding support training for health care providers.
2. Implement evidence-informed and culturally adapted PSE changes to **prevent and control commercial tobacco use** by implementing or strengthening existing commercial tobacco-free Tribal policies and increase referrals to evidence-based commercial cessation treatment programs.
3. Implement evidence-informed and culturally-adapted community-clinical linkages (CCL) to **support type 2 diabetes prevention** by expanding access to the CDC's NDPP Lifestyle change program.
4. Implement evidence-informed and culturally-adapted CCL to **support heart disease and stroke prevention** by expanding engagement of Community Health Representatives, Community Health Aides, and other paraprofessionals to manage and refer community members to local health and prevention care programs.

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As of this writing, the ITCA currently partners through Memorandums of Agreements with 7 Tribes: 5 Tribes in AZ (the Cocopah Indian Tribe, Fort Mojave Indian Tribe (FMIT), Gila River Indian Community (GRIC), Quechan Indian Tribe, and the Yavapai-Apache Nation); 1 Tribe in NV (the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation); and 1 Tribe in UT (the Ute Indian Tribe of the Uintah and Ouray Reservation).

These Tribes have started to recruit community stakeholders to their Health Coalitions, which will be the main driver of the grant's implementation. In addition, all the Tribes have completed an initial GHWIC Policy Survey assessment to determine which Strategy Areas to focus on. As a result of the survey, most Tribes will focus on supporting the expansion of the NDPP program, increase support for breastfeeding within their communities, and develop or strengthen commercial tobacco-free Tribal policies. As an example, the FMIT hosted an Indigenous Breastfeeding Counselor training for their staff and community members in January 2020, and all Tribes were scheduled to attend an NDPP Lifestyle coach training in the first quarter of 2020. At the present time, the principal funds available to Tribes to address the prevention of DM, include these CDC GHWIC grants and SDPI as noted above.

### ***Salt River Pima-Maricopa Indian Community***

The River People Health Center (RPHC) hosts a variety of services and programs that serve the Salt River Pima-Maricopa Indian Community located in the metropolitan Phoenix area.

Nutrition Services (NS) at River People Health Center (RPHC) strives to reduce the incidence of prediabetes and diabetes within the Salt River Pima-Maricopa Indian Community. This is achieved by offering personalized medical nutrition therapy with either of two Registered Dietitians and through enrolling patients in either of two pilot projects: *Thriving with Diabetes* (TWD) and *Basics on a Budget* (BOB).

*Thriving with Diabetes* (TWD) is an 8-unit, interdisciplinary course designed for people who are newly diagnosed or who struggle with diabetes management. Participants are able to learn about diabetes from various professionals, including nurses, ophthalmologists, behavioral health specialists, fitness specialists, and dietitians.

*Basics on a Budget* (BOB) addresses both food cost savings education and an improvement in cooking skills with an emphasis on healthy foods. In this program, participants are able to gain hands-on cooking experience in the RPHC teaching kitchen. When the most recent cohort of participants completed the post-assessment, 85% strongly agreed that they improved their cooking skills and learned how to cook new foods that they otherwise might never have tried.

In 2022, the RPHC Diabetes Program became an ADCES-accredited Diabetes Center of Excellence, which allows the RPHC billing department to bill and submit claims for reimbursement for eligible class participants. RPHC works to improve care and reduce disparities through these classes by

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offering them at no cost and at an easily accessible location within the community. Another aspect of improving care is the progressive way in which the Primary Care team treats patients who have prediabetes or diabetes. They prescribe the newest and best medications on the market in addition to consulting specialty services such as Nutrition Services, Dental, Behavioral Health, and Podiatry, to ensure patients are having every aspect of their health appropriately treated. To add value to the care, the wonderful team of Community Health Representatives support the facility by connecting providers to patients and building trust within the community. They also provide substantial medication management support and help patients with low health literacy understand their medical condition(s).

Within the SRPMIC community, some barriers have been identified that have started to be addressed. A major barrier that unfortunately remains prevalent is food insecurity. According to Feeding American, Native Americans have a high prevalence of food insecurity. The program is working to acknowledge this through our BOB class and partnerships with the Food Distribution Program. It is acknowledged that the Nutrition Services Program is relatively new at RPH--they have only been in operation since March of 2022 and are becoming more active in the community. As they continue to grow and build trust in the community, Nutrition Services intends to provide nutrition therapy to as many patients as possible.

RPHC is continuously growing and improving services offered to be the best asset possible in the community. As the center works to establish itself as a pillar in the community for diabetes care, the incidence of diabetes will hopefully decline.

### ***Phoenix Area Indian Health Service (IHS)***

Phoenix Area Indian Health Service (IHS) Diabetes Program provides Special Diabetes Program for Indians (SDPI) grant support to 31 tribal communities, 2 federal service units, and 3 urban Indian programs. Phoenix Area IHS also provides clinical support for the Tribal healthcare centers, federal service units, and Urban Indian healthcare programs in Phoenix Area, which includes parts of Arizona, Utah, Nevada, and California. To view the full statement submitted for the 2023 DAP, please visit Appendix 5.

### ***Arizona State Retirement System (ASRS)***

For over 65 years, ASRS has provided retirement benefits to Arizona's public servants, including teachers, employees of all three of Arizona's universities, community college districts, school districts and charter schools, all of Arizona's 15 counties, municipal workers and other government employees. The ASRS proudly serves more than a half-million members, including more than 160,000 retired members. Nearly 44,000 retirees and their eligible dependents are enrolled in ASRS medical plans.

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For the retired members of ASRS, 24% of the Medicare Advantage and 17% of the non-Medicare members were identified to have diabetes. Graham, Mohave, Pinal, and Yuma had high concentrations of Medicare members with diabetes. Greenlee, Pinal, and Yuma have high concentrations of non-Medicare members with diabetes. Note, the majority of members in all Plans diagnosed with diabetes reside in Metro Arizona (Pima or Maricopa counties): 79% for Medicare Advantage, and 83% for non-Medicare.

### ***Diabetes Support for non-Medicare Members***

The Diabetes Management Program is a comprehensive solution for non-Medicare members that receive benefits through the Arizona State Retirement System. The program is designed to help individuals learn how to effectively manage their condition and its comorbidities (including depression) and limit disease progression. Members will better understand risk factors, how to maintain a healthy lifestyle, and adhere to physician treatment plans and medications.

To do this, nurses address gaps in care and screen for co-morbidities and risk factors. In addition, nurses assess all diabetic members for depression and refer them to behavioral health resources, as necessary. Medical directors are available to review care plans and conduct peer-to-peer outreach to treating physicians. Regular monitoring (blood glucose, cholesterol, A1c) and screenings (dental, foot, eye) are performed. Fully synchronized pharmacy and care management systems monitor adherence to prescribed medication and any compliance issues, to include identifying duplications and contraindications. These processes create deeper insights, allowing faster gap identification to drive better, more relevant member engagement, improve clinical outcomes and ultimately reduce costs. ASRS uniquely leverages pharmacy touchpoints, including placing pharmacists on the care team. \*(Only applies to those using OptumRx as their pharmacy benefit services provider).

High-risk members are identified and counseled on understanding, managing and averting any long-term health effects related to their condition. As needed, patients are referred to Diabetes Self-Management to gain skills and adopt a healthy lifestyle. Members are also encouraged to enroll in weight-loss, tobacco cessation or exercise programs, when appropriate. Nurses can schedule physician appointments and promote additional resources for members, including referring members to resources such as psychosocial services and community resources.

Of the ASRS non-Medicare plan members in 2019, 1,354 (17%) had a diagnosis of diabetes, of which 92% were diagnosed with type 2 diabetes.

### ***Diabetes Support for Medicare Members***

ASRS provides web based healthy eating and exercise programs that include meal planning to members who have diabetes. Members experiencing high risk behaviors, low medication adherence or have an elevated A1c greater than 9% are assigned Diabetes Health Navigators for

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more deliberate care and disease management. Low-to-moderate risk members with diabetes are identified and are assigned to telephonic diabetes interventions designed to close any gaps in care. Of ASRS Medicare Advantage plan members in 2019, 10,229 (24%) had a diagnosis of diabetes. Of these, 98% were diagnosed with type 2 diabetes.

To read the UnitedHealthcare complete data and usage report, please visit Appendix 5.

### *Arizona Department of Administration; Benefits Division (ADOA)*

#### **Overview**

The Arizona Department of Administration was established by the Arizona State Legislature in 1973 to support the operation of state government, including providing medical and health benefits to roughly 136,000 active state and university employees, retirees and COBRA members and their eligible dependents. In addition to medical, pharmacy, dental and vision, ADOA also maintains a statewide wellness program offering numerous health enhancement, education, and prevention programs and services to all benefits eligible state employees.

ADOA also provides a free online health risk assessment as part of the new HIP Virgin Pulse platform for spouses and adult dependents. The *My Health Check Survey* assessment provides employees with a personalized report of their current health. Any employee at risk of developing diabetes or is at an increased risk for complications, are encouraged to participate in the platform's digital health coaching and *Journeys*, which are daily, self-guided courses to assist with building habits to reach a stated goal. There are over 60 that focus on various aspects of well-being, however two of them focus specifically on diabetes: “Live Healthy – Diabetes” and “Eat Well to Manage Blood Sugar”. In addition, Diabetes self-management programs and other disease management programs are available from the medical carriers under ADOA. A complete list of diabetes resources can be found on the ADOA Wellness Benefits website: [www.benefitoptions.az.gov/wellness](http://www.benefitoptions.az.gov/wellness)

To encourage increased engagement, HIP offers a voluntary, incentive-based framework whereby employees earn points for regular engagement in healthful activities, wellbeing challenges, preventive services and programs. Points are awarded to employees in various activities such as qualified weight loss programs, mini-health screening - including blood glucose and hemoglobin A1C, online health assessment, digital health coaching, completion of a medical carrier sponsored disease management programs, educational webinar and campaigns, as well as other preventive annual physical, screenings/exams.

*Lifestyle, Health Management, and Diabetes Education Programs*

**Real Appeal**

Real Appeal is a weight loss program and lifestyle management, using simple and manageable measures that can easily be integrated into daily life for long-term health benefits and lasting weight loss. It is a year-long web-based program using weekly sessions around education and behavior change. For employees who qualify for the program as high risk, one-on-one personal coaching is also available. Real Appeal is currently available at no-charge to all benefit eligible employees and dependents 18 years and older who are on one of the State of Arizona medical plans.

**Wondr**

Wondr (formerly Naturally Slim) is an online weight loss and lifestyle management program. The program provides weekly sessions for one year. The foundation of the class encourages the attendee to rediscover the pleasures of eating by retraining your brain by the way you eat. Encourages attendees to change how they eat, not what they eat and increase their activity level. In 2021, it became available at no charge to all benefit eligible employees and dependents 18 years and older who are on one of the State of Arizona medical plans. The 2021 Metrics show a high participation rate and very favorable outcomes that support diabetes prevention and management efforts.

	<b>Real Appeal</b>	<b>Wondr</b>
Enrolled	654	844
Participants at Risk	552	679
Participants with Weight Loss	304	379
Achieved 5% Weight Loss	39%	34%
Average Weight Loss	3.10%	2.70%
Total Pounds Lost	2,931	2,285

**Am I Hungry? Mindful Eating for Diabetes**

This is a prediabetes and diabetes management program that puts the participant in charge of their decisions instead of diets focused on restrictive dieting. This program addresses emotional eating, mindless eating and other habits. In addition, Am I Hungry teaches awareness of diabetes and ways to manage the condition. This 6-week course is offered online and is self-paced. This program is employee paid and offers an opportunity to participate in an ASU Research study whereby a percentage of the cost is refunded to those completing a pre and post survey.

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ADOA continues to offer the National Diabetes Prevention Program in partnership with the University of Arizona Cooperative Extension and continues to provide NDPP across the state to employees and dependents over the age of 18. The program is designed for those who are at high risk of developing type two diabetes or who have been diagnosed with prediabetes. It is a proven lifestyle change program designed to cut the risk of developing diabetes in half. It provides educational support to teach participants how to develop healthy behaviors to prevent and manage diabetes. Developed by the Centers for Disease Control (CDC), this lifestyle change program helps you reduce your Type 2 diabetes risk by learning new skills in losing weight, becoming more physically active and reducing stress. This is provided to state employees as part of the UA Cooperative Extension funding.

### ***Format and Tools***

In 2020, ADOA reported 7,484 (5.4%) members of a total 136,095 that had 18,621 visits to a primary care provider and had an ICD-10 code designated for diabetes, prediabetes or a comorbid condition in addition to diabetes. Within this population of members with diabetes, 82.5% of ADOA members were diagnosed with type 2 diabetes, 7.0% with type 1 diabetes and 2.5% were diagnosed with gestational diabetes (Figure 16).

In 2021, ADOA reported 9,254 (5.4%) members of a total 131,691 that had 22,854 visits to a primary care provider and had an ICD-10 code designated for diabetes, prediabetes or a comorbid condition in addition to diabetes. Within this population of members with diabetes, 80.3% of ADOA members were diagnosed with type 2 diabetes, 7.2% with type 1 diabetes and 2.6% were diagnosed with gestational diabetes. ADOA's healthcare Plan cost was \$55,781,241 for its 49,804 diabetic members. In addition to this, of ADOA's diabetic members – 9,690 reported having at least one comorbid condition, Plan cost \$15,600,675.

To read ADOA's complete data, usage and financial report, please visit Appendix 5. (Summary report based on report from Arizona Department of Administration, as of August, 2022)

### ***Public Safety Personnel Retirement System***

Established in 1968, the PSPRS provides retirement benefits for members serving in our communities throughout Arizona as police officers, firefighters, correctional officers, judges, and elected officials. PSPRS serves over 36,000 active members and 22,000 retired members. The data for PSPRS members is incorporated within the ASRS data as ASRS administers the medical plans for PSPRS members. Approximately 5,200 retirees and their eligible dependents are enrolled in ASRS medical plans.

### ***American Diabetes Association; Arizona***

The American Diabetes Association's (ADA) Arizona & New Mexico office is committed to educating communities on strategies and initiatives on how to Stop Diabetes and supporting those living with

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the disease. The American Diabetes Association can provide resources for you and your family about all types of diabetes as well as information for caregivers and others affected indirectly by the disease. Several initiatives are planned each year, benefiting residents of Arizona.

The ADA is the nation's leading voluntary health organization fighting to bend the curve on the diabetes epidemic and help people living with diabetes thrive. For 81 years, the ADA has driven discovery and research to treat, manage, and prevent diabetes--while working relentlessly for a cure. Through advocacy, program development, and education, the ADA aims to improve the quality of life for the over 133 million Americans living with diabetes or prediabetes. Diabetes brings many people together and helping each other makes us *Connected for Life*. To learn more or to get involved, visit us at [diabetes.org](https://diabetes.org) or call 1-800-DIABETES (1-800-342-2383). Join the fight with us on Facebook ([American Diabetes Association](#)), Spanish Facebook ([Asociación Americana de la Diabetes](#)), Twitter ([@AmDiabetesAssn](#)) and Instagram ([@AmDiabetesAssn](#)).

The ADA envisions a future without unjust health disparities. The ADA calls on businesses, policymakers, philanthropies, advocates, and other leaders across the nation to take immediate steps to address systemic inequities in cost, care, cure, community, and cuisine. Working together to ensure the more than 133 million Americans living with diabetes and prediabetes, along with the millions more who are at high risk for diabetes—no matter their race, income, zip code, age, education, or gender—get equal access to the most basic of human rights: their health.

The ADA advocates for the people of Arizona on both the State and Federal level. ADA's priorities that impact the diabetes community:

- Access to adequate and affordable health care
- Diabetes research, programs, and innovation
- Discrimination
- Prevention
- Health Equity

**Diabetes is Primary** is a program for healthcare professionals and their teams interested in clinical management of diabetes and its complications. This innovative educational initiative is specifically for the primary care community. The initiative provides information and tools needed to improve patient outcomes through patient and clinical engagement. The primary focus of the initiative is type 2 diabetes prevention and prediabetes, management of high blood sugars, emotional support for those with diabetes, obesity management in those with diabetes and cardiovascular management and treatment options.

Held on the fourth Tuesday of March each year, **American Diabetes Association Alert Day** is a day to sound the alarm about the prevalence of type 2 diabetes by asking everyone to take the Type 2

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Diabetes Risk Test (24; 25). The free, anonymous risk test only takes a minute to complete. By answering questions such as “Do you have a family history of diabetes?” and “Are you physically active?” you can learn if you are at risk for type 2 diabetes in 60 seconds.

From the nutrition experts at the ADA, **Diabetes Food Hub** is the premier food and cooking destination for people living with diabetes and their families. Providing free meal planning, recipes, grocery lists and tips for healthy eating.

November is **National Diabetes Month**. During this month, partners, organizations, and health professionals across the nation team up to bring attention to diabetes and its impact on Americans. National Diabetes Month themes change yearly and includes free marketing materials, toolkits, and other resources.

The American Diabetes Association's **Camp AZDA** has been offering a camping experience for youth for over 40 years. ADA's Camp AZDA residential camp program for youth with Type 1, Type 2 and MODY. Camp AZDA helps children with diabetes develop confidence, social skills while also fostering independence. Kids that attend Camp AZDA learn awareness of healthy eating, exercise, and emotional wellbeing. They also learn key aspects related to diabetes such as glucose control.

ADA **Project Power** brings all the fun and excitement of a virtual afterschool program right to you and your family. Kids ages 7–13 will make new friends and participate in age-appropriate physical activity challenges and nutrition education, so they are prepared to make healthy lifestyle choices. This free, at-home afterschool experience is interactive, fun, and educational. It starts with a special Project Power box and Activity Journal delivered right to your door. Kids can participate in fun, interactive activities they will love, including:

- Participating in chants, interactive discussions, games, and friendly competitions
- Connecting with their friends and counselors for an hour twice a week
- Being part of a virtual “group” with youth from around the country
- Coordinating fun activities for the whole family—there is something for everyone!

The American Diabetes Association has programs, initiatives and events that are ongoing within communities across Arizona to include ADA's Living with Type 2 Program, Paper Risk Test distribution, Walmart Wellness Days, Safe at School Advocacy Workshops, Type 1 diabetes Summits, Youth Ambassador Program, and Pro Diabetes healthcare professional memberships. The ADA also promotes the utilization of Diabetes Education Program attendance and referrals for those with diabetes. A list of current ADA-recognized Diabetes Self-Management programs can be found at [https://professional.diabetes.org/erp\\_list\\_zip](https://professional.diabetes.org/erp_list_zip).

### *The Arizona Diabetes Leadership Council (ADLC) and Coalition (ADC)*

#### ***The Arizona Diabetes Leadership Council (ADLC)***

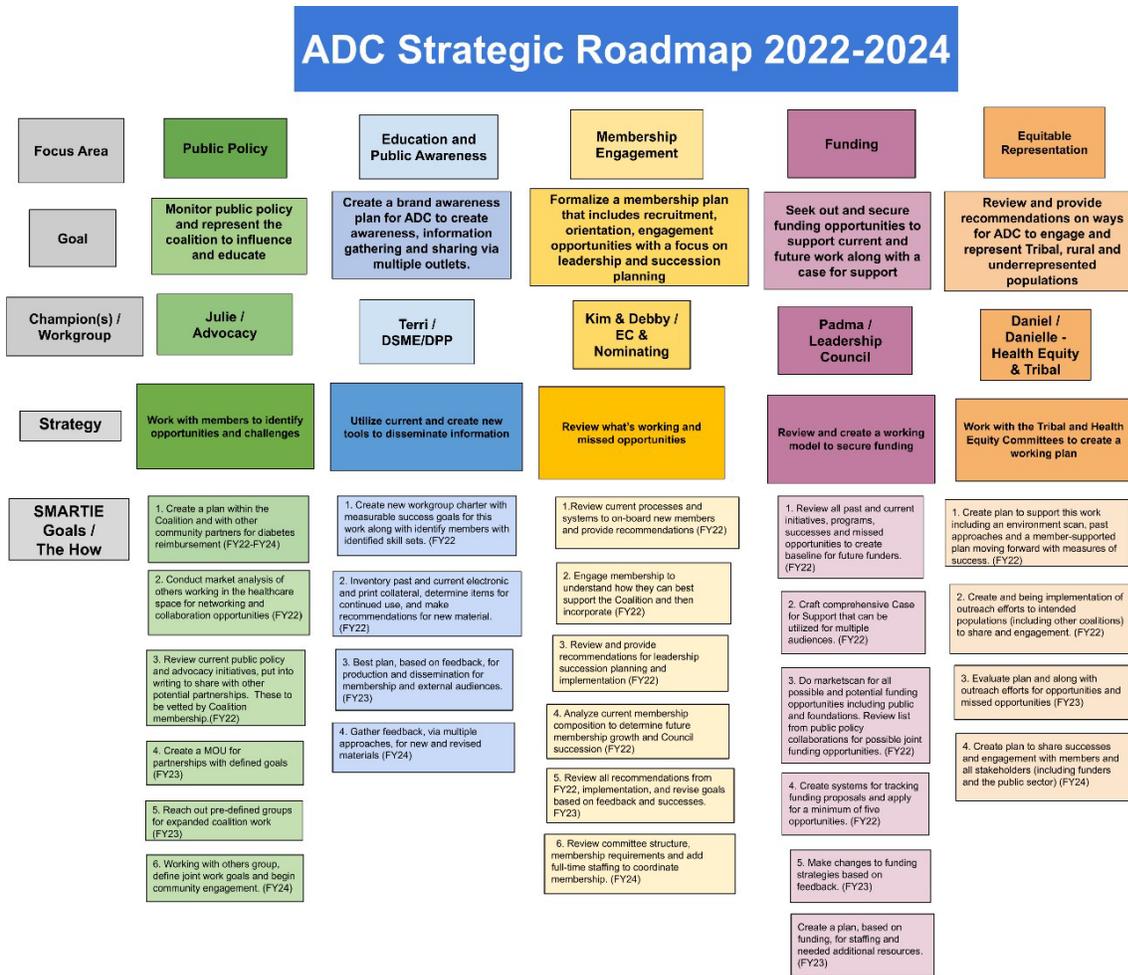
The Arizona Diabetes Leadership Council and Coalition (ADC) historically has included participants and representatives from over 300 organizations, agencies and individuals that work to promote diabetes prevention and control. The mission of the ADC is to reduce the burden of diabetes on individuals, families, communities, the health care system, and the state. This shall be done by increasing awareness of diabetes, and advocating for and promoting policies and programs that improve access to care, treatment, and outcomes for people with diabetes and those at risk for developing diabetes. The Arizona Diabetes Control Program and Arizona Advisory Council were established in 1994, having added “Prevention” to its title as a result of the Diabetes Prevention Program Study in 2002. In 2005, The Arizona Advisory Council became the Arizona Diabetes Coalition and is represented by the Arizona Diabetes Leadership Council (ADLC), the 15-to-21-member council serves as advisors to the Arizona Diabetes Control and Prevention Program at ADHS. The ADLC works collaboratively with the ADC and the Arizona Diabetes Control and Prevention Program at ADHS in designing, implementing and evaluating community-driven strategies to eliminate health disparities in diabetes. The Leadership Council and Coalition is tasked with the highlighted items below:

- Community mobilization by creating and maintaining active partnerships at the state and local levels that jointly pursue issues related to diabetes in communities across Arizona
- Public awareness and education that improve awareness of diabetes prevention, diabetes management strategies and training opportunities for healthcare professionals and the general public
- Diabetes Self-Management Education and Support (DSMES) provides a variety of educational programs and classes within the communities of Arizona. The primary goal of DSMES is to educate and support people with or at risk for developing diabetes. DSMES provide participants with the foundation to help better navigate decisions and activities that have been shown to improve health outcomes including self-care behaviors, problem solving and developing relationships that encourages active collaboration with health care providers
- Expanding Diabetes Prevention programming and training opportunities across Arizona

With the support of Vitalyst Health Foundation, the Leadership Council of the Arizona Diabetes Coalition participated in guided strategic planning sessions in October and November 2021 to re-evaluate the Coalition bylaws, priorities, and strategic plan. A consultant, Geronimo Consulting, LLC., facilitated the sessions to gather consensus and also developed a roadmap to guide an efficient, statewide, comprehensive approach to diabetes services and information. This was a collaborative effort of many leaders and experts in diabetes coming together to achieve short, middle, and long-term desired goals to combat diabetes in Arizona. The 2022 Arizona Diabetes Coalition Roadmap has been driving the work of the Council and Coalition since the beginning of the year. The strategic

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issues identified in the roadmap were addressed independently by the four different Coalition workgroups that revised their charter to align with the new 2022 ADC Roadmap. This allowed each workgroup to focus and align its efforts to achieve its goal.



## The Arizona Diabetes Coalition (ADC)

The Arizona Diabetes Coalition, formally established in 2005, is comprised of more than 300 members who serve as conduits for promoting diabetes prevention and management through their various organizations. The Arizona Diabetes Coalition uses a collaborative and coordinated approach with statewide stakeholders and the Arizona Department of Health Services in designing, implementing and evaluating community-driven strategies. The Coalition works to eliminate health disparities and reduce the burden of diabetes on individuals, families, communities and the healthcare system. This is achieved by increasing awareness of diabetes and advocating for and promoting policies and programs that increase access to care, treatment and outcomes for those diagnosed with diabetes or those with an elevated risk of developing diabetes. Members also may assist in the DAP process.

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## Arizona Diabetes Coalition Work Groups

**Advocacy, Policies and Practices Work Group** - participate in Advocacy efforts to make DSMT/E and NDPP available to all persons with diabetes in Arizona. *Co-Chair(s): Julie Hoffman and Suzanne Miller*

**Diabetes Self-Management/Diabetes Prevention Work Group (DSM/DPP)** - Advancement and promotion of increased utilization of recognized/accredited DSME programs in Arizona and actively raises awareness of prediabetes and supports evidence-based prevention programs. *Co-Chair(s): Vanessa da Silva*

**Tribal Work Group** - To identify innovative strategies that are culturally and linguistically appropriate for our American Indian/Alaska Native communities of Arizona for the prevention and control of diabetes. *Co-Chair(s): Vacant*

**Health Equity Work Group** - Members work collaboratively to identify data and evaluation resources to depict the burden of diabetes in Arizona. Dedicated to mobilizing the assets of Arizona area to reduce the impact of diabetes in vulnerable populations. *Co-Chair(s): Danielle Gilliam and Isabel Cañez*

**DAP Data Team** - Members work collaboratively to share information, track Coalition progress, and help include data sources to depict the burden of diabetes in Arizona. To help lead efforts, share your interest and email the contact below. *Led by: ADHS and External Partners*

## Arizona Diabetes Leadership Council and Coalition - Historical Organizations as of December 1, 2022\*

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3 Mavens Consulting LLC	Cochise County Health Department	Mountain Park Health Center
Abrazo Health Systems	ConTrías Policy Associates, LLC	National Association of Hispanic Nurses
Adelante Healthcare	El Rio Community Health Center	National Kidney Foundation of Arizona
Aetna	Equality Health	Native Americans for Community Action, Inc.
American Diabetes Association	Flagstaff Medical Center	Native Health Community Health Center
Area Agency on Aging	Ft. McDowell Yavapai Nation	Novo Nordisk, Inc.
Arizona Community Health Workers Association	Gila River Indian Community	Pascua Yaqui Tribe
Arizona Department of Health Services	Health Choice Arizona	Phoenix Indian Medical Center
Arizona Department of Administration	Health Net Access	Pima County Department of Public Health

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Arizona Living Well Institute	Health Services Advisory Group	Regional Center for Border Health
Arizona Public Health Association	Hualapai Tribe	Salt River Pima-Maricopa Indian Community
Arizona State University: Southwest Interdisciplinary Research Center	Humana	Sanofi
Banner Health System	Indian Health Services: Phoenix	Scottsdale Healthcare
Blue Cross Blue Shield of Arizona	Integrated Wellness Club	SinfoniaRX
Campeños Sin Fronteras	Inter Tribal Council of Arizona	Sonora Quest Laboratory
Carondelet Health Network	Mariposa Community Health Center	St. Joseph Hospital and Medical Center
Celerion	Navajo Area Indian Health Services	St. Vincent de Paul Family Wellness Center
Chandler Regional Medical Center	Navajo Nation Special Diabetes Program	Sun Health Center for Health and Wellbeing
Cigna Medical Group	NIH, NIDDK; Phoenix Office	Sun Life Family Health Center
Desert Senita Community Health Center	North Country Healthcare	Vitalyst Health Foundation
Tabula Rasa HealthCare	Northern Arizona VA Health Care System	White River Indian Health Service
Tohono O'odham Nation	MercyCare Health Plan	Winslow Indian Health Center
Tuba City Regional Healthcare Corporation	Mountain Park Health Center	Yavapai County Community Health Services
University of Arizona; College of Pharmacy	Unlimited Potential	Yavapai Regional Medical Center
University of Arizona; Mel and Enid Zuckerman College of Public Health	University of Arizona; Cooperative Extension	Yuma County Public Health Services District
United Healthcare	Valleywise	

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\*Full Coalition membership; Non-Voting representation

**Public Service Announcements (PSAs):**

Arizona Department of Health Services, in coordination with the Arizona Diabetes Coalition disseminate [DoIHavePrediabetes.org](http://DoIHavePrediabetes.org) PSAs to include risk tests, shareable campaign videos, brochures and pamphlets. The campaign, developed by the American Medical Association, the CDC, and The Ad Council consists of helpful provider resources and informational PSAs. The campaign encourages the general population to assess their prediabetes risks by taking a short, one-minute risk assessment. The PSAs also are designed to encourage the general public to speak with their healthcare provider about their risks and prevention mechanisms (26; 27).

**Prediabetes Awareness Campaign in Arizona**



The Agents of Change media campaign is specifically designed with the medical provider in mind. Educational outreach to providers ensures they are recognizing risk factors and proactively testing for prediabetes using the CDC Prediabetes Screening test or performing an A1c screening.

**500,000** ARIZONANS HAVE  
PREDIABETES AND WE'RE ON A  
MISSION TO CHANGE THAT.

PROVIDERS REGISTER TO BECOME AN ARIZONA AGENT  
OF CHANGE AT [AZAGENTOFCHANGE.ORG](http://AZAGENTOFCHANGE.ORG)



ADHS has engaged in a multi-year marketing campaign, focusing on increasing awareness of prediabetes and establishing a network of primary care providers that refer their eligible patients to a Nationally Recognized Diabetes Prevention Program located within Arizona.

# Prediabetes



Pre-stroke  
Pre-heart attack  
Pre-kidney disease  
Pre-amputation  
Pre-nerve damage  
Pre-blindness

One in three American adults has prediabetes, a condition that comes with a number of associated health risks. The good news is, it can often be reversed through lifestyle changes, like exercising more and eating healthier.

To find out if you have prediabetes, take the test at [azdhs.gov/mission-possible](http://azdhs.gov/mission-possible).



ARIZONA DEPARTMENT  
OF HEALTH SERVICES



# 84 MILLION AMERICANS HAVE PREDIABETES. DO YOU?

- 1** How old are you?  
 Less than 40 years (0 points)  
 40—49 years (1 point)  
 50—59 years (2 points)  
 60 years or older (3 points)
- 2** Are you a man or a woman?  
 Man (1 point) Woman (0 points)
- 3** If you are a woman, have you ever been diagnosed with gestational diabetes?  
 Yes (1 point) No (0 points)
- 4** Do you have a mother, father, sister, or brother with diabetes?  
 Yes (1 point) No (0 points)
- 5** Have you ever been diagnosed with high blood pressure?  
 Yes (1 point) No (0 points)
- 6** Are you physically active?  
 Yes (0 points) No (1 point)
- 7** What is your weight status? (see chart at right)

Write your score in the box.

↓

Height	Weight (lbs.)		
4' 10"	119-142	143-190	191+
4' 11"	124-147	148-197	198+
5' 0"	128-152	153-203	204+
5' 1"	132-157	158-210	211+
5' 2"	136-163	164-217	218+
5' 3"	141-168	169-224	225+
5' 4"	145-173	174-231	232+
5' 5"	150-179	180-239	240+
5' 6"	155-185	186-246	247+
5' 7"	159-190	191-254	255+
5' 8"	164-196	197-261	262+
5' 9"	169-202	203-269	270+
5' 10"	174-208	209-277	278+
5' 11"	179-214	215-285	286+
6' 0"	184-220	221-293	294+
6' 1"	189-226	227-301	302+
6' 2"	194-232	233-310	311+
6' 3"	200-239	240-318	319+
6' 4"	205-245	246-327	328+
	(1 Point)	(2 Points)	(3 Points)
You weigh less than the amount in the left column (0 points)			

**If you scored 5 or higher:**

You're likely to have prediabetes and are at high risk for type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes (a condition that precedes type 2 diabetes in which blood glucose levels are higher than normal). Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanic/Latinos, American Indians, Asian Americans and Pacific Islanders.

Higher body weights increase diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weights than the rest of the general public (about 15 pounds lower).

Add up your score.

↓

Adapted from Bang et al. Ann Intern Med 151:775-783, 2009. Original algorithm was validated without gestational diabetes as part of the model.



## LOWER YOUR RISK

Here's the good news: it is possible with small steps to reverse prediabetes - and these measures can help you live a longer and healthier life.

If you are at high risk, the best thing to do is contact your doctor to see if additional testing is needed.

Visit [DoIHavePrediabetes.org](http://DoIHavePrediabetes.org) for more information on how to make small lifestyle changes to help lower your risk.

For more information, visit us at

[DoIHavePrediabetes.org](http://DoIHavePrediabetes.org)



## State Profile of Diabetes Organizations

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### *Arabic DPP – Phoenix, Arizona*

**Overview:** Banin Alqadheeb, a Pharmacist, is developing an Arabic DPP group. The population of focus are people who speak Arabic and at risk of developing type 2 diabetes. For more details, contact Arabicdpp@outlook.com.

**Chronic Disease Focus:** To deliver the diabetes prevention program in Arabic through providing resources and skills for people in effort to prevent type 2 diabetes among Arabic communities.

**Contact:** ArabicDPP@outlook.com

### *Arizona Telemedicine/Southwest Telehealth Resource Center – Tucson, Arizona*

**Overview:**

- To enhance healthcare delivery to medically-underserved populations throughout the state using telemedicine technologies
- To maintain a statewide Arizona Telemedicine Network To increase access to medical specialty services while decreasing healthcare costs
- To use telemedicine outreach programs to encourage physicians, nurses, and other healthcare professionals to establish and retain practices in underserved rural areas.
- To provide ongoing training for preceptors, medical students, and residents.
- To encourage students from rural communities into the healthcare professions and encourage their return to these communities upon completion of their education.
- To improve public health in rural communities by providing current information and training.
- To increase and promote the use of telecommunications for distance learning in health care.
- To provide health care systems throughout the state with information, training, and expertise in the field of telemedicine. To evaluate telemedicine equipment and telecommunications options and participate in their development.

**Chronic Disease Focus:** The Arizona Telemedicine Program (ATP) and the Southwest Telehealth Resource Center (SWTRC) offers FREE 1-day training courses on telemedicine and telehealth. There are two tracks offered throughout the year; 1) Developing a Telemedicine Program and 2) Telemedicine Applications. ATP's staff and colleagues, many of whom are national experts in telehealth, distance education and the business of telemedicine, teach both tracks.

**Link:** <https://telemedicine.arizona.edu/> and <https://southwesttrc.org/>

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### *Campesinos Sin Fronteras – Yuma, AZ*

**Overview:** Established in 1997, Campesinos Sin Fronteras (CSF) is a 501(c)(3) nonprofit organization serving the binational farmworker community for more than 25 years between Yuma County, Arizona, and Mexico. CSF is dedicated to providing free educational services to migrant workers and their families to prevent illness while reducing health and social disparities in the community. CSF offers fifteen health education programs in English and Spanish, including Women’s Health and Wellness, Diabetes Education, Management and Control, Behavioral Health, Environmental Health, and Youth and Family Programs.

**Chronic Disease Focus:** Their programming serves approximately 40,000 individuals in the community each year. In addition, CSF outreach teams have worked with over 35 agricultural companies during the pandemic to provide their workforce with personal protective equipment (PPE) and educational resources regarding COVID-19 vaccines and other prevention strategies. One current accomplishment of Campesinos Sin Fronteras is being awarded the Diabetes Prevention Recognition Program (DPRP) Full Plus Recognition for *Vida Sana*, the site’s National Diabetes Prevention Program. In addition, they are completing nine cohorts with four lifestyle coaches in the education practice. CSF also offers programs and/or support regarding the following: housing, immigration, strengthening families, *Your Future Your Choice*, *Thrive*, *Vida Sana* (type 2 diabetes prevention), and radio shows.

**Link:** <https://www.campesinosinfronteras.com/> <https://www.radiosinfronteras.org/>

### *Clinical Pharmacy Innovation Services, LLC – Statewide*

**Overview:** Clinical Pharmacy Innovation Services (CPIS) is a member of the Leadership Council and Coalition and provides consulting to improve patient access to care through pharmacy services to National, State and local organizations, including governmental, community-based organizations and nonprofits.

**Chronic Disease Focus:** Pharmacy, National DPP, DSME, Medication Management Therapy (MTM) services

**Contact:** (520) 355-5192

### *Commonwealth Primary Care ACO – Phoenix, AZ*

**Overview:** Commonwealth Primary Care ACO (CPCACO), is one of the nation’s few primary-care founded, owned, operated and governed Accountable Care Organization (ACO). CPCACO is a primary-care founded, owned, operated and governed Medicare Shared Savings Program (MSSP) ACO as chartered by the Centers for Medicare and Medicaid Services (CMS). Our membership base consists

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of over twenty-six independent primary care offices made up of over one hundred Primary Care Physicians, Nurse Practitioners and Physician Assistants. Our member physicians and their practices make up the ownership of our organization. CPCACO has over 7,500 assigned MSSP beneficiaries and has also participated in several Commercial and Medicaid value-based programs.

**Chronic Disease Focus:** Commonwealth operates throughout the State of Arizona, with many of our physicians in the Phoenix metropolitan area. CPCACO currently operates as a management entity organizing the independent primary care physicians in a virtual group arrangement, as a provider of management services, and as an organizer of technology. Commonwealth exists to serve the continued success and independence of physicians and to improve system cost, quality and patient satisfaction for our beneficiaries.

**Link:** [commonwealthaco.com](http://commonwealthaco.com)

### *Diabetes Training and Technical Assistance Center (DTTAC) – Atlanta, Georgia*

**Overview:** ADHS has a strong relationship with Emory University’s Diabetes Training and Technical Assistance Center (DTTAC), one of the CDC’s approved training entities through a contracted Technical Advisor, Vivian Cullen (dba VH Cullen Consulting). The contractor is a Master Trainer Select who trains and provides technical assistance to Lifestyle Change Coaches implementing the CDC’s National Diabetes Prevention Program (NDPP). Under the 1815 Grant, 15 new LC’s for five 1815 Grant organizations were trained in 2022.

**Chronic Disease Focus:** Throughout the year, members of all 1815 Grant teams have input on:

- Initial training;
- Clarification on the Diabetes Prevention Recognition Program (DPRP);
- Guidance on setting up classes virtually and in-person;
- Advice on retention and engaging participants in class activities;
- Shifting to the revised 2021 PT2 curriculum; and
- Providing team building and enhanced coaching skills workshops.

In addition, several Arizona based Lifestyle Coaches (some of whom are 1815 Grantees) have successfully completed a Virtual Lifestyle Coach Training and Advanced Training Webinars via Emory University’s Diabetes Training and Technical Assistance Center (DTTAC).

**Link:** [emorycenters4phtraining.emory.edu/dttac/](http://emorycenters4phtraining.emory.edu/dttac/)

### *Edson College, Center for Health Promotion and Disease Prevention, Arizona State University – Phoenix, AZ*

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**Overview:** The Center for Health Promotion and Disease Prevention is a collaborative transdisciplinary faculty that conducts translational research, training, and outreach activities in close partnership with communities to improve health and prevent disease in vulnerable populations across the lifespan.

**Chronic Disease Focus:** Access to and participation in community participatory research.

**Link:** <https://chpdp.asu.edu/>

### *HealthMarkets – Tempe, AZ*

**Overview:** HealthMarkets is a payer organization, member of the Arizona Diabetes Coalition focusing on educating individuals and families on how to navigate the current healthcare system to also assist them in how to find the best insurance plan that fits within their budget.

**Chronic Disease Focus:** This member helps community members in understanding and applying for health insurance, Medicare, life insurance, small group insurance, and supplemental insurance.

**Contact:** (602) 551-6623

### *National Association for the Advancement of Colored People (NAACP) Phoenix Chapter – Phoenix, AZ*

**Overview:** NAACP mission is to achieve equity, political rights, and social inclusion by advancing policies and practices that expand human and civil rights, eliminate discrimination, and **accelerate the well-being**, education, and economic security of Black people and all persons of color. NAACP is one of the oldest grassroots organizations in the nation with over 2,200 chapters across the United States. NAACP AZ State Conference governs over 8 statewide branches, four university/college chapters, and two youth councils.

NAACP is committed to **ending racial health disparities**. Our aim is not simply **disease prevention**, but to **create an inclusive culture of healthy people and communities**. We collaborate with communities through coordinated action to **improve the social determinants of health** — racism, poverty, exclusion, inferior schools, unsafe housing, poor nutrition, and toxic environments. We disrupt the status quo by working at the intersection of policy and systems change to drive sustainable impact for the sake of our future. The NAACP is fighting for:

- **Affordable health care** – The public and private health care systems must be transformed to be affordable, accessible, and offer high-quality health care to everyone.
- **Healthy people, healthy communities** - Part of good health begins with access to good nutrition and quality resources. Conventional food systems that limit access to locally sourced, healthy, affordable food must be disrupted.
- **Health in all policies** - Ongoing systems of oppression are at the root of health inequities. We work toward the redistribution of money, power, and resources as well as the adoption of proactive policies at the national, state, and local levels to optimize health for all.

### Chronic Disease Focus:

- **The Fight to Ban Menthol**
  - One of the leading causes of death for African Americans is ***tobacco-related chronic illness like Type 2 diabetes***. As increased access to health care, reducing health disparities, and limiting chronic disease are top priorities for the NAACP, we urge the FDA to ban menthol-flavored cigarettes and flavored cigar products.
- **Health Equity**
  - Guarantee all people in the US can obtain physical, mental, and oral health care when they need it regardless of their coverage, employment, financial, or immigration status. Communities of color are often ***restricted to generic and older technology to manage their diabetes due to insurance or lack of insurance coverage***.
- **Vaccine education and distribution**
  - Develop and disseminate an education and outreach campaign that provides clear, comprehensive, and culturally meaningful information about vaccines and therapeutics prior to and during their distribution. Implement a vaccine and therapeutics distribution plan that aligns with data-driven need, incorporates appropriate monitoring of and treatment for vaccinated persons over time, and requires no out-of-pocket costs.
    - 34% of COVID-19 deaths were among non-Hispanic Black people, though they make up only 12% of the total US population.
    - ***People with diabetes are more likely to have serious complications from COVID-19. In general, people with diabetes are more likely to have more severe symptoms and complications when infected with any virus. Your risk of getting very sick from COVID-19 is likely to be lower if your diabetes is well-managed.***

Link: [www.arizonastateconferencenaacp.org](http://www.arizonastateconferencenaacp.org)

### *National Association of Chronic Disease Directors (NACDD) – Phoenix, AZ*

**Overview:** Teri Elkins at the National Association of Chronic Disease Directors is the new incoming Chair of the Arizona Diabetes Leadership Council and Coalition. The NACDD is a national association that directly supports diabetes initiatives through the Medicaid Beneficiary Enrollment Project Pilot and with other assistance: Technical Assistance & Support regarding: National Diabetes Prevention Program, Diabetes Self-Management Training and Support program sustainability and credentialing.

**Chronic Disease Focus:** TA and support, mentorship, resources and tools related to National DPP and Umbrella Hub Arrangements (UHA).

Link: <https://coveragetoolkit.org/>

### *Novo Nordisk—Phoenix, AZ*

**Overview:** At Novo Nordisk, we believe in change. We are parents, colleagues, neighbors, and friends — people living with the complexities of serious diseases. And we believe in the combination of science and soul to help nurture each other back to good health.

For almost 100 years, we have been driving change to defeat diabetes, which has given us the experience and capability to help defeat other serious chronic diseases, including obesity, hemophilia, and growth hormone disorders.

We work for a future where lives are not limited—and we do so by pioneering scientific breakthroughs, expanding access to our medicines, and working to prevent and ultimately cure the diseases we treat.

From our labs to our factory floors, we are discovering and developing innovative biological medicines and making them accessible to patients who need them.

### *Defeat Diabetes*

Our social responsibility strategy introduces new long-term ambitions in three areas critical to helping improve individual and public health:

- Preventing the rise of type 2 diabetes and obesity.
- Providing access to affordable care for vulnerable patients in every country.
- Driving innovation to improve lives.

Our strategy to defeat diabetes:

1. Cities Changing Diabetes (CCD) - Launched in 2014, Cities Changing Diabetes includes six initiatives that reach, empower, and connect more than 75,000 Houstonians to improve diabetes prevention and management. We have programs in Houston, Philadelphia, and over 40 cities outside the US.
2. Ensuring access and affordability for people who rely on our medicines - NovoCare® provides resources to help people using our medicines understand their options, find costs, and connect to affordability support. People with diabetes using Novo Nordisk insulin who have lost health insurance coverage because of a change in job status due to COVID-19 may be eligible for a free 90-day supply of insulin through Novo Nordisk's Diabetes Patient Assistance Program.
3. Get Real About Diabetes™ - Anthony Anderson, actor, and comedian, has lived with type 2 diabetes for more than 20 years. Since 2017, he is the Get Real About Diabetes™ spokesperson and now invites people with type 2 diabetes to change how they think about their disease. It's more than managing blood sugar. It's also about managing risks, like the increased cardiovascular risks.

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**Chronic Disease Focus:** When someone living with a chronic disease is not cared for properly, or left untreated altogether, they are at risk of developing life-threatening complications. Vulnerable and low-income communities are often hit the hardest. The cost and access to medical care can place a devastating burden on individuals, their families, and even whole societies. Affordability is a major issue and a complicated one. There are lots of question marks and many are looking to us for answers. What we do know for sure is that more needs to be done across the healthcare system for patients. And we will be a part of that.

### Novo Nordisk in the Community

Our efforts are focused on reducing the burden of chronic disease in underserved communities. We partner with various place-based projects in vulnerable populations throughout the U.S. that provide increased awareness and education around chronic diseases and more access to drivers of healthy living, such as nutrition and physical activity.

*Arizona State University Foundation: College of Health Solutions* - This initiative connects low-income participants in the Phoenix area to community resources, supplying mobile food banks and nutrition education by medical students at Federally Qualified Health Centers.

**Link:** <https://www.novonordisk-us.com/sustainable-business/novo-nordisk-in-the-community.html>

### *Regional Center for Border Health, Inc. College of Health Careers – Somerton, AZ*

**Overview:** The Regional Center for Border Health (RCBH) College of Health Careers has a school facility that consists of 1,515 square feet of floor space, which is divided into classrooms, administrative offices, a laboratory, a computer laboratory, a conference room, and reception area. Additional parking is available in the back of the building. All classrooms and labs are designed for a maximum capacity of 8-12 students. The equipment used for training consists of medical equipment, nursing assistant & direct care worker equipment, computers, pharmacy equipment, and phlebotomy equipment. The school is located next to the Workforce Investment Building (WIA) and residential homes; one-mile walking distance to shopping, restaurants, and banking, all with access to public transportation.

**Chronic Disease Focus:** The Regional Center for Border Health (RCBH) College of Health Careers is committed to Improving the Quality of Life of the residents along U.S Mexico border by increasing accessibility to quality training and affordable healthcare. The College has important objectives:

- To establish a pipeline for "Growing Our Own" healthcare workforce in Western Arizona.
- To engage local healthcare industries and address their healthcare workforce needs.
- To work closely with medically underserved and health professional shortage areas.

**Link:** <https://www.rcbh.edu/>

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### *Regional Center for Border Health, Inc. San Luis Walk-In Clinic, Inc. – San Luis, AZ*

**Overview:** The Regional Center for Border Health (RCBH) San Luis Walk-In Clinic, Inc. is committed to improving the quality of life of the residents along U.S-Mexico border by providing affordable healthcare. The RCBH San Luis Walk-In Clinic accepts all medical insurance and uses a sliding-scale fee model and may offer fee waivers when needed. The RCBH offers medical multi-specialty appointments, dental, behavioral health, outpatient survey, and urgent care

**Chronic Disease Focus:** Yuma, La Paz, and Mohave County farmworkers, pregnant women, pediatric, adult and elder population, veterans, Native Americans. RCBH provides: medical services, dental, behavioral health, outpatient survey, and urgent care

**Link:** <https://www.slwic.org/>

### *River People Health Center - SRPMIC – Phoenix, AZ*

**Overview:** The Diabetes Program at the River People Health Center (Salt River Pima Maricopa Indian Community) is a member of the Arizona Diabetes Coalition. Their Community Health Services is striving to build a strong, engaging DSME program.

- Pathway to Wellness (National Diabetes Prevention Program)
- Diabetes Among Friends education series
- Kitchen Creations education/cooking series
- Group health promotion education classes
- Food demos and tastings
- Community outreach education – all ages
- 

**Chronic Disease Focus:** Diabetes Self-Management and prevention program. No cost - for tribal health system members. Services offered are for IHS beneficiaries.

**Link:** <https://www.rphc.org/services/public-health/diabetes/>

### *Sonora Quest Laboratories (SQL) – Phoenix, Arizona*

**Overview:** Sonora Quest Laboratories developed an At Home Testing (AHT) Program for Hemoglobin A1c and launched in June 2022. Members receive a letter and/or email from their health plan with an invitation to receive their home collection kit. The kit includes detailed instructions for sample collection, and a pre-paid envelope to send back to the lab. Health plan members can access their results on Sonora Quest Laboratories' Patient Portal. In collaboration with our Medical Oversight partner, PWN Health, health plan members with an A1c >10 will receive a call with next steps. If unable to reach a member after 3 attempts, a certified letter is sent.

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**Chronic Disease Focus:** Sonora Quest Laboratories also provides text reminders to health plan members to complete their kits, as well as an option to come into the lab for a venous draw, if that is preferable.

To our health plan partners, we provide Actionable Insights Management (AIM)<sup>™</sup> analytics, to provide detailed reporting including member engagement and testing completion rates. In 2022, we have sent over 1,000 kits to patients as we strive to support health plans to close gaps in care for HEDIS and STARS measures for A1c testing.

**Link:** [www.sonoraquest.com](http://www.sonoraquest.com)

### *University of Arizona Cooperative Extension – Statewide*

**Overview:** The UArizona NDPP launched in 2018 and obtained full recognition from the CDC in 2019, for in person delivery. The program moved to remote delivery in 2020, and obtained full-plus recognition for that delivery mode in 2022. Since 2018, over 400 Arizonans have enrolled in a UArizona DPP group. About 40% of participants identify as Hispanic/Latinx, and 70% as white. Among participants who complete the program (as per CDC criteria), average weight loss is 9 lbs., and about half of participants who complete the program meet the 5% weight loss goal.

**Chronic Disease Focus:** The University of Arizona Cooperative Extension National Diabetes Prevention Program is offered statewide either remotely (Zoom) or in person (7 counties). The program has trained lifestyle coaches in Apache, Graham, Maricopa, Pima, Pinal, Santa Cruz, and Yavapai Counties. Depending on the location, classes are delivered in English or in Spanish.

**Link:** <https://preventdiabetesaz.org/>

### *Unlimited Potential – Phoenix, Arizona*

**Overview:** Since 1985, Unlimited Potential (UP) has addressed the needs of under-resourced populations in Maricopa County, Arizona. Our mission is to “ignite unity, pride, and dignity through education and advocacy. “We provide equitable opportunities grounded in acceptance and respect, promoting strong individuals, families, and communities. UP has four priority areas: Adult Education, Environmental Justice, Disease Control and Prevention, and Healthy Living; aimed to reach a community that is nearly 90% Hispanic/Latino.

**Chronic Disease Focus:** During FY22 (July 1, 2021 – June 30, 2022), UP facilitated 97 health fairs with a minimum of 194 hours of 1:1 education, plus 220 health related in-person workshops, and 59 hours of health education for the organization’s Community Health Workers (CHWs). The staff at UP also trained 60 new CHWs with a focus on core competencies as well as disease control and prevention. During the same period, UP provided 1:1 health education to 4,838 community members regarding hypertension, diabetes, cancer, Alzheimer’s, COVID-19, importance of vaccinations, and many other

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health topics. To help prevent and manage diabetes, UP's programming includes a CDC-recognized NDPP lifestyle change program with two bi-lingual lifestyle change coaches with Preliminary recognition from the CDC's DPRP where the coaches work with participants to learn healthy eating habits, importance of physical activity, and how to manage stress. Collectively, the group supports each other to overcome challenges and celebrate success. A new cohort is set to begin in January 2023. In response to demonstrated community need to ameliorate disease burden, UP also specializes in the Know Your Risk of Diabetes and Heart Disease Program which is focused on reducing the prevalence of type 2 diabetes and heart disease.

**Link:** [www.unlimitedpotentialaz.org](http://www.unlimitedpotentialaz.org)

### *Yavapai County Community Health Services – Phoenix, AZ*

**Overview:** Yavapai County Community Health Services (YCCHS) provides leadership, offers information, and services that contribute to improving the health and well-being of Yavapai County residents. YCCHS provides outreach to residents and visitors on diabetes awareness through health fairs, social media, and special events. In 2022, YCCHS partnered with the Community Health Center of Yavapai to conduct pre-diabetes screenings through a paper survey and an A1C test. Health Educators hope to host their first DPP class starting in January 2023.

**Chronic Disease Focus:** Through grant support Yavapai County offers Health Education, NDPP, DSME, and other services to Yavapai County residents.

**Link:** [www.healthyyavapai.com](http://www.healthyyavapai.com)

### *Yuma County Public Health Services District (YCPHSD) – Yuma, AZ*

**Overview:** Yuma County is a multi-cultural border community located in the outermost region of southwest Arizona; neighbored by the state of California on the west, and Baja California and Sonora states of Mexico to the south. It has a high-traveling and dynamic population with continuous cross-border movement. The total population is 229,957 (2019 census), and most recent estimates available suggest there are an additional 150,000+ seasonal winter visitors, agricultural workers, and regular border crossers who live, work in, and frequent Yuma County during the winter months.

**Chronic Disease Focus:** Yuma County Public Health Services District (YCPHSD) has the proud distinction of creating the greatest possible opportunity for health for all Yuma County residents. We serve a wide range of neighborhoods and communities, all with unique opportunities and health challenges. Our mission is to provide services that prevent epidemics and the spread of disease; protect against environmental hazards; promote and encourage health behaviors; and assure accessibility of health services.

**Link:** [www.yumacountyaz.gov/government/health-district](http://www.yumacountyaz.gov/government/health-district)

# Appendix 1: Legislation

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State of Arizona:  
House of Representative  
Fifty-Third Legislature  
Second Regular Session  
2018

CHAPTER 94  
[HOUSE BILL 2258](#)

AN ACT

AMENDING TITLE 36, CHAPTER 1, ARTICLE 2, ARIZONA REVISED STATUTES, BY ADDING SECTION 36-142;  
RELATING TO DIABETES.

(TEXT OF BILL BEGINS ON NEXT PAGE)

- 1 Be in enacted by the Legislature of the State of Arizona:  
2 section 1. Title 36, chapter1, article 2, Arizona Revised  
3 Statutes, is amended by adding section 36-142, to read:  
4 36-142. Diabetes information: report  
5 A. THE DIABETES ACTION PLAN TEAM IS ESTABLISHED IN THE DEPARTMENT  
6 OF HEALTH SERVICES. THE TEAM IS COMPOSED OF THE HEAD OF THE FOLLOWING  
7 ENTITIES OR THAT PERSON’S DESIGNEE:  
8 1. THE ARIZONA DIABETES PROGRAM WITHIN THE DEPARTMENT OF HEALTH  
9 SERVICES.  
10 2. THE ARIZONA HEALTH CARE COST CONTAINMENT SYSTEM.  
11 3. THE PUBLIC SAFETY PERSONNEL RETIREMENT SYSTEM.  
12 4. THE ARIZONA STATE RETIREMENT SYSTEM.  
13 5. THE DEPARTMENT OF ADMINISTRATION BENEFITS SERVICES DIVISION.  
14 6. DIABETES STAKEHOLDER ORGANIZATIONS, INCLUDING HEALTH INSURERS, A  
15 NATIONALLY RECOGNIZED DIABETES ASSOCIATION AND THE ARIZONA DIABETES  
16 COALITION.  
17 B. THE TEAM SHALL COMPILE A REPORT ONCE EVERY TWO YEARS THAT  
18 INCLUDES THE FOLLOWING INFORMATION.  
19 1. THE PREVALENCE IN THIS STATE OF:  
20 (a) DIABETES BY TYPE.  
21 (b) DIABETES BY AGE, RACE AND GENDER.  
22 (c) COMPLICATIONS ASSOCIATED WITH DIABETES.  
23 (d) PREDIABETES.  
24 2. THE COSTS OF DIABETES IN THIS STATE.  
25 3. THE ARIZONA DIABETES PROGRAM’S PLAN FOR REDUCING THE INCIDENCE  
26 OF DIABETES IN THIS STATE. IMPROVING DIABETES CARE AND REDUCING  
27 DIABETES-RELATED HEALTH DISPARITIES, INCLUDING PROPOSED ACTION STEPS.  
28 4. A DESCRIPTION OF THE LEVEL OF COORDINATION THAT EXISTS BETWEEN

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29 THE DEPARTMENT OF HEALTH SERVICES AND HOSPITALS, THE DEPARTMENT'S  
30 CONTRACTED PARTNERS AND OTHER STAKEHOLDERS ON ACTIVITIES AND PROGRAMMATIC  
31 ACTIVITIES AND THE LEVEL OF COMMUNICATION ON MANAGING, TREATING OR  
32 PREVENTING ALL FORMS OF DIABETES AND ITS COMPLICATIONS.

33 C. THE REQUIREMENTS OF SUBSECTION B, PARAGRAPHS 1 AND 2 OF THIS  
34 SECTION ARE LIMITED TO THE DIABETES INFORMATION, DATA, INITIATIVES AND  
35 PROGRAMS WITHIN EACH AGENCY BEFORE THE EFFECTIVE DATE OF THIS SECTION,  
36 UNLESS THERE IS UNOBLIGATED FUNDING FOR DIABETES IN AN AGENCY THAT MAY BE  
37 USED FOR NEW RESEARCH, DATA COLLECTION AND REPORTING FOR THE PURPOSES OF  
38 SUBSECTION B, PARAGRAPHS 1 AND 2 OF THIS SECTION.

39 D. ON OR BEFORE JANUARY 1, 2019 AND ONCE EVERY TWO YEARS  
40 THEREAFTER, THE DEPARTMENT SHALL PROVIDE THE REPORT REQUIRED BY SUBSECTION  
41 B OF THIS SECTION. INCLUDING ITS RECOMMENDATIONS FOR ACTION, TO THE  
42 GOVERNOR, THE PRESIDENT OF THE SENATE AND THE SPEAKER OF THE HOUSE OF  
43 REPRESENTATIVES AND SHALL SUBMIT A COPY TO THE SECRETARY OF STATE.

## Appendix 2: What is Diabetes?

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### ***Diabetes Overview:***

According to the CDC, current estimates show that 37.3 million Americans had diabetes: roughly 11.3% of the U.S. population (28). One-third of Americans who have diabetes are unaware they have it, and another one-third of Americans have prediabetes (3). To understand diabetes, it is important to understand how your body uses glucose and insulin. The main source of fuel for energy your body needs is glucose, a sugar. Glucose enters the body from the food broken down in digestion. This simple sugar travels through the bloodstream and enters the cells of the body with the help of insulin. Insulin, a hormone made in the pancreas, is the “key” that “opens” cells so the glucose can enter the cell and provide the body with energy.

Diabetes develops when insulin is either completely absent (type 1), or is in short supply or poorly used by the body (type 2). Without insulin, too much glucose remains in the bloodstream rather than entering the cells. If diabetes is not diagnosed and treated, blood glucose levels continue to rise, and over time leads to serious health complications; such as blindness, heart disease, stroke, kidney failure, nerve damage and lower limb amputations. Taking care of diabetes by eating the right foods, exercising regularly and taking medication, if prescribed, help provide the best defense against serious complications.

### ***Type 1 Diabetes:***

Type 1 diabetes represents approximately 5% of all diabetes cases. Type 1 diabetes (also called juvenile diabetes or insulin dependent diabetes) occurs due to autoimmune attack on insulin producing pancreatic beta cells resulting in severe insulin deficiency (2). People with type 1 diabetes require multiple daily injections of insulin, and if untreated can be fatal. Insulin is delivered by injection or insulin pump and must be used in conjunction with blood sugar monitoring, carefully balanced food intake and exercise in order to regulate healthy blood sugar levels. Without daily and carefully monitored blood sugar control, hypoglycemia or hyperglycemia can occur. Hypoglycemia is a common and potentially life-threatening condition in which the level of glucose in the blood drops below normal by not carefully balancing insulin intake with food and physical activity. Hypoglycemia, if left untreated can result in seizures and loss of consciousness, and in severe cases, death (29). In comparison, hyperglycemia is a result when blood sugar becomes too high. This can occur by skipping or not taking enough insulin in order to balance food intake. Signs of very high blood sugar include extreme thirst and urination, nausea, trouble seeing, poor concentration, confusion, drowsiness or coma (30).

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Type 1 diabetes is usually diagnosed in children, teenagers and young adults and is characterized with a short duration of symptoms with a sudden onset to include polyuria, polydipsia and weight loss. A very rare form (less than 4% of all diabetes cases) of diabetes called monogenic diabetes, can strike newborns (Neonatal Diabetes Mellitus (NDM)) and teens (Maturity-Onset Diabetes of the Young (MODY)) and is often mistaken for type 2 diabetes. Monogenic diabetes results from a mutation of a single gene that is inherited from one or both parents and is often correctly diagnosed only after genetic testing (33). There are no modifiable risk factors, such as obesity or high blood pressure, which are associated with or contribute to the development of type 1 diabetes. While there appears to be a genetic factor to the development of type 1 diabetes, many environmental factors may trigger and/or influence the severity of an autoimmune attack on insulin producing beta cells (2).

### **Type 2 Diabetes:**

Type 2 diabetes accounts for 90%-95% of the total cases of diabetes in the United States (5). Type 2 diabetes is caused by a combination of insulin resistance; largely due to obesity, and deficient insulin secretion by the pancreatic beta cells. As the need for insulin rises, the pancreas gradually loses its ability to produce adequate amounts to control blood glucose levels. Many factors have been linked to the development of type 2 diabetes as listed below:

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

<b>Modifiable (31)</b>	<b>Non-Modifiable (31)</b>	<b>Socially Determined (32)</b>
Overweight or obesity	Age 45 or over	Access to affordable healthy foods
Physical inactivity	Ethnicity	Access to affordable health care
Tobacco use	Family history, direct relative with diabetes	Access to affordable and safe physical activity
High blood pressure	History of gestational diabetes	Discrimination based on geography
Abnormal cholesterol levels	Polycystic Ovarian Syndrome (PCOS)	Discrimination based on race
History of prediabetes, impaired glucose tolerance	Acanthosis Nigricans (darkened skin around neck and armpits)	Discrimination based on socioeconomic status
Cardiovascular disease		

As noted above, a person's risk for developing diabetes can be influenced by many factors including age, family history, ethnicity and other factors that cannot be changed. While there are many factors that cannot be changed, there are factors that influence a person's health such as education attainment, access to affordable nutritious food, employment and access to affordable health care. Social determinants of health are the conditions in which a person is born, grows, lives, works and ages.

### **Diabetes in Pregnancy:**

#### ***Gestational Diabetes Mellitus (GDM):***

Pregnant women who have never had a diagnosis of diabetes before but have high blood glucose levels during pregnancy are said to have gestational diabetes. According to a 2014 analysis by the Centers for Disease Control and Prevention (CDC), the prevalence of gestational diabetes is as high as 9.2% of pregnancies (34). Women who are overweight or obese, had GDM in a prior pregnancy, had larger babies (>9 pounds), high blood pressure, high cholesterol and/or heart disease, or have polycystic ovary syndrome are at a greater risk of GDM. In addition, women who have a family history of diabetes, over the age of 25 or are Hispanic, African American, American Indian/Alaskan Native or Pacific Islander are at an increased risk (35).

Gestational diabetes occurs when the hormonal changes of pregnancy demand more insulin of the body than it would normally make or use efficiently, increasing insulin resistance. Gestational diabetes usually occurs in the second to third trimester or around 20-28 weeks gestation. Most women with GDM have healthy pregnancies due to proper blood sugar management; however, they are still at increased risks for possible complications such as high blood pressure and preeclampsia, late-term pregnancy loss, preterm labor and delivery complications resulting in cesarean section. Though gestational diabetes usually resolves itself postpartum, 5-10% of women will continue to have diabetes post pregnancy. In addition, having gestational diabetes greatly increases the risk of developing type 2 diabetes within 10 years by as much as 50% (36). As these children age, they are also shown to have glucose intolerance and to be more overweight or obese as compared to their non-GDM counterparts (by as much as 10%) (36).

#### ***Pregestational Diabetes Mellitus:***

Distinct from gestational diabetes, pregestational diabetes occurs when a woman has insulin-dependent diabetes prior to pregnancy. All diabetic women who wish to become pregnant are encouraged by their medical provider to carefully plan their pregnancies in advance, achieve controlled blood sugar levels, and maintain a healthy weight prior to pregnancy to achieve the best outcomes for both mother and baby. Prenatal care is essential for a healthy outcome, as normal blood sugar levels are essential during the formative first trimester. High levels of glucose in the blood prior to pregnancy and during the first trimester greatly increase the risk of birth defects to the heart, brain, spinal cord, urinary tract and gastrointestinal system (37). In addition, babies born to mothers with pregestational diabetes are at increased risk for complications before and after birth including large-birth weight (increasing risk of birthing injury), low blood sugar, preterm birth, jaundice and breathing problems (38). With proper diabetes management including diet management and insulin therapy, blood glucose values are kept at normal levels greatly reducing serious health risks to the baby.

### ***Prediabetes:***

Prediabetes is a term used to define those at a high risk of developing diabetes in the future and includes those that have elevated fasting blood glucose levels and those that have had a history of gestational diabetes.

Prediabetes is a serious yet reversible health condition where blood sugar levels are higher than normal but not high enough yet to be diagnosed as diabetes. Prediabetes puts you at increased risk for developing type 2 diabetes, heart disease and stroke.

A person can have prediabetes for years but have no clear or defining symptoms, therefore it often goes undetected until serious health problems arise. Because there are no clear symptoms of prediabetes, it is important to be aware of the risk factors. Anyone who is considered overweight, 45 years or older or having a direct blood relative with diabetes or having gestational diabetes during pregnancy, and those that are active less than 3 days a week are at an increased risk of developing prediabetes. Additionally, it should be noted that African Americans, Hispanic and Latin Americans, and American Indians are at higher risk (5).

Lifestyle intervention consisting of a diet containing foods lower in fat, foods with lower caloric content and an increase in moderate physical activity of at least 150 minutes per week coupled with formative behavior modifications has been shown to reduce the incidence of diabetes conversion by as much as 58% (39; 40).

### **Complications of Diabetes:**

Diabetes is recognized as one of the leading causes of death and disability in the United States. Over time, people with chronically high levels of blood glucose suffer lasting and debilitating effects, including damage to their nerves and blood vessels. Those with diabetes are also more likely to suffer from depression and mental health distress. Because of this long-term exposure to elevated levels of glucose, those with diabetes experience (2; 5; 40):

#### ***Heart Disease***

- Death rates are two to four times higher for those with diabetes than those without
- Stroke risk among those with diabetes is also two to four times higher than those without diabetes

#### ***High Blood Pressure***

- It is estimated that 2 out of every 3 persons with diabetes also suffer from high blood pressure

#### ***Blindness and Eye Problems***

- Diabetes is the leading cause of blindness among adults

### ***Kidney Disease***

- Diabetes is the leading cause of kidney failure, resulting in dialysis, transplant or end stage renal failure

### ***Nervous System Disease***

- An estimated 60%-70% of people with diabetes suffer from some form of nervous system damage, including neuropathy of the hands and feet and decreased gastric motility

### ***Amputation***

- More than 60% of non-traumatic lower limb amputations are a direct result of diabetes

### ***Dental Diseases***

- Nearly one-third of those with diabetes also suffer from periodontal disease

### ***Complications of Pregnancy***

- Birth defects are more common in babies born to mothers with poorly controlled glucose levels in the first trimester
- Poorly controlled diabetes in the second and third trimesters can result in large birth weight babies, posing greater risk for complications during childbirth
- Babies born to diabetic mothers are at a greater risk for developing diabetes later in life

### ***Depression and Mental Health Distress***

- In any 18-month period, 33% to 50% of people with diabetes have diabetes distress, characterized by overwhelming feeling of discouragement, frustration, and feeling of defeat as related to diabetes management (41). Diabetes health distress is not effectively treated with medication. Comorbid depression in diabetes may lead to poorer outcomes and increased risk in complications because of lower adherence to medication, glucose monitoring, exercise and diet (42)
- People with diabetes are 2 to 3 times more likely to have depressive episodes than those without diabetes (43).

# Appendix 3: Diabetes and Prediabetes Prevalence

## I. Hospital and Emergency Department Discharges

The number and rates of discharges (per 10,000 county residents) for diabetes specific visits varied by county. While the total number of discharges was highest where population density is highest; the highest rate of discharges per 10,000 county residents were in La Paz, Gila, and Cochise counties (Table 1). A detailed description of diabetes costs by diabetes diagnosis and payer type can be found in Appendix 4.

**Table 1. Diabetes Hospitalization or Emergency Department Visits and rate per 10,000, by hospital county, Arizona 2021**

	Diabetes-Related (any Diagnosis)		Diabetes-Specific (Primary Diagnosis)		Rate (per 10,000)
	Total Discharges	Total Charges (\$)	Total Discharges	Total Charges (\$)	
<b>TOTAL</b>	366,152	\$18,059,473,064	34,150	\$1,203,145,347	46.9
<b>Apache</b>	2,461	\$160,299,206	259	\$7,950,939	39.0
<b>Cochise</b>	8,018	\$284,933,208	881	\$18,768,503	69.7
<b>Coconino</b>	5,552	\$209,228,812	522	\$13,021,441	35.4
<b>Gila</b>	3,753	\$153,175,434	438	\$11,159,262	81.8
<b>Graham</b>	2,145	\$62,394,799	176	\$4,421,863	45.1
<b>Greenlee</b>	413	\$19,895,061	32	\$832,459	33.4
<b>La Paz</b>	1,479	\$85,170,175	201	\$6,478,188	119.5
<b>Maricopa</b>	205,249	\$10,677,021,962	19,852	\$699,049,177	44.0
<b>Mohave</b>	17,901	\$950,166,316	1,446	\$60,165,959	66.8
<b>Navajo</b>	7,730	\$353,301,216	710	\$22,695,600	65.9
<b>Pima</b>	53,913	\$2,537,862,270	4,727	\$189,389,574	44.7
<b>Pinal</b>	26,141	\$1,344,142,869	2,420	\$89,909,967	55.1

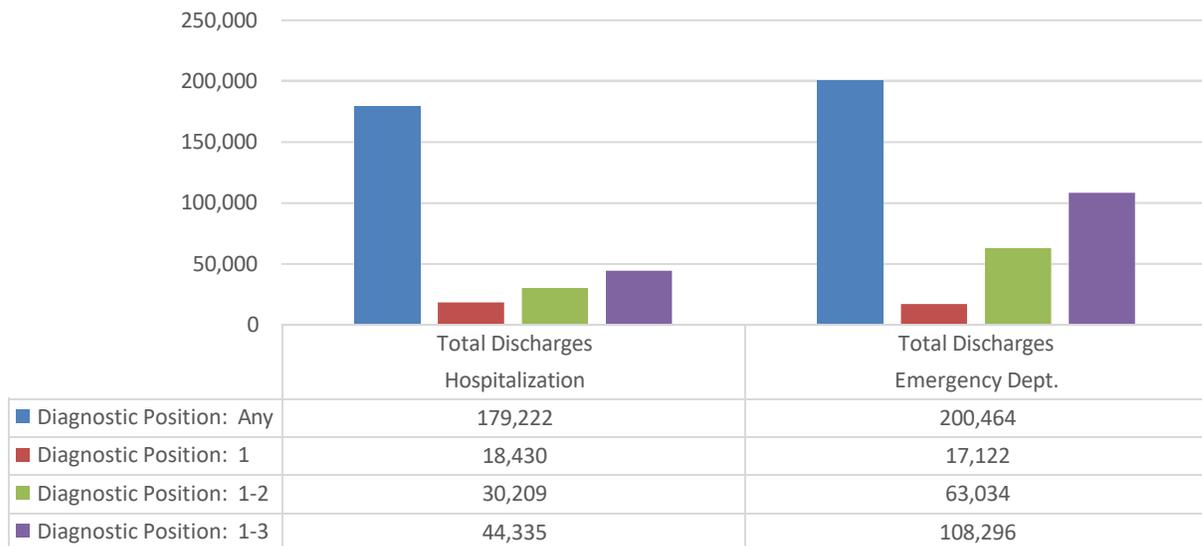
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<b>Santa Cruz</b>	2,888	\$123,003,912	245	\$10,460,611	50.5
<b>Yavapai</b>	14,148	\$514,175,429	1,027	\$30,834,681	42.6
<b>Yuma</b>	14,361	\$584,702,395	1,214	\$38,007,123	58.6

Data Source: Arizona Hospital Discharge Database, 2019; Hospital location (county), includes all encounters (resident and non-residents of Arizona); Diabetes ICD-10 codes included: E08, E09, E10, E11, E13, O24

In 2021, there were 366,152 diabetes-related (diabetes ICD-10 in any diagnostic position) hospitalization or emergency department (ED) discharges in Arizona; and 34,150 diabetes-specific (diabetes ICD-10 as the primary diagnosis, first position) discharges (Figure 1).

**Figure 1. Diabetes Hospitalization or Emergency Department Visits, by ICD-10 diagnostic position, Arizona 2019**

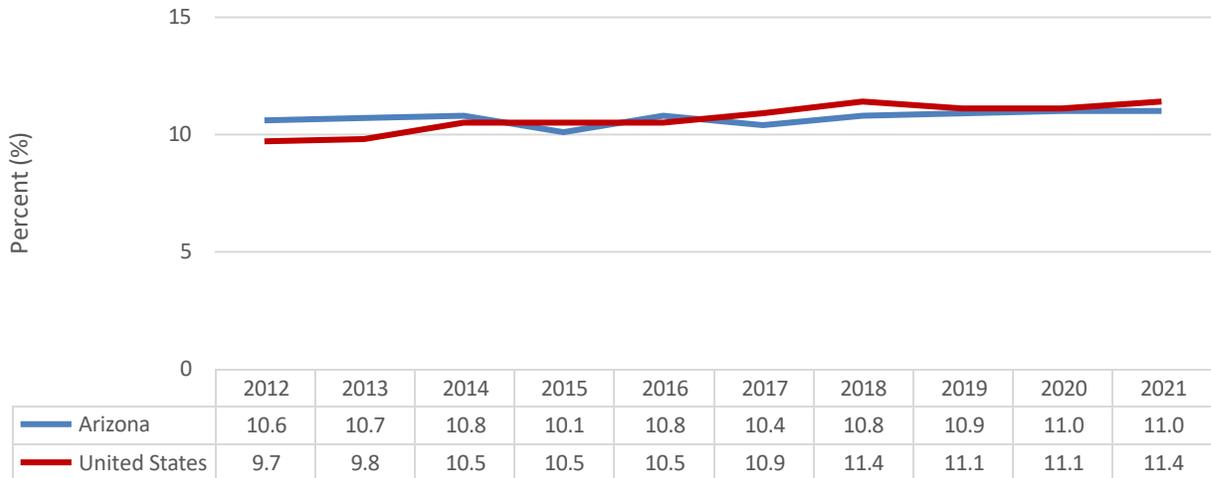


Data Source: Arizona Hospital Discharge Database, 2021; Diabetes ICD-10 codes included: E08, E09, E10, E11, E13, O24

**II. Morbidity**

The percentage of Arizonan adults who reported ever having diabetes has been fairly consistent from 2016 (10.8) to 2021 (11.0) (Figure 2). In 2021, the Arizona rate of diabetes was also similar to the national average (11.4). Diabetes and prediabetes prevalence vary across Arizona counties. The highest stable diabetes rates are in Apache and Yuma counties (Figure 3).

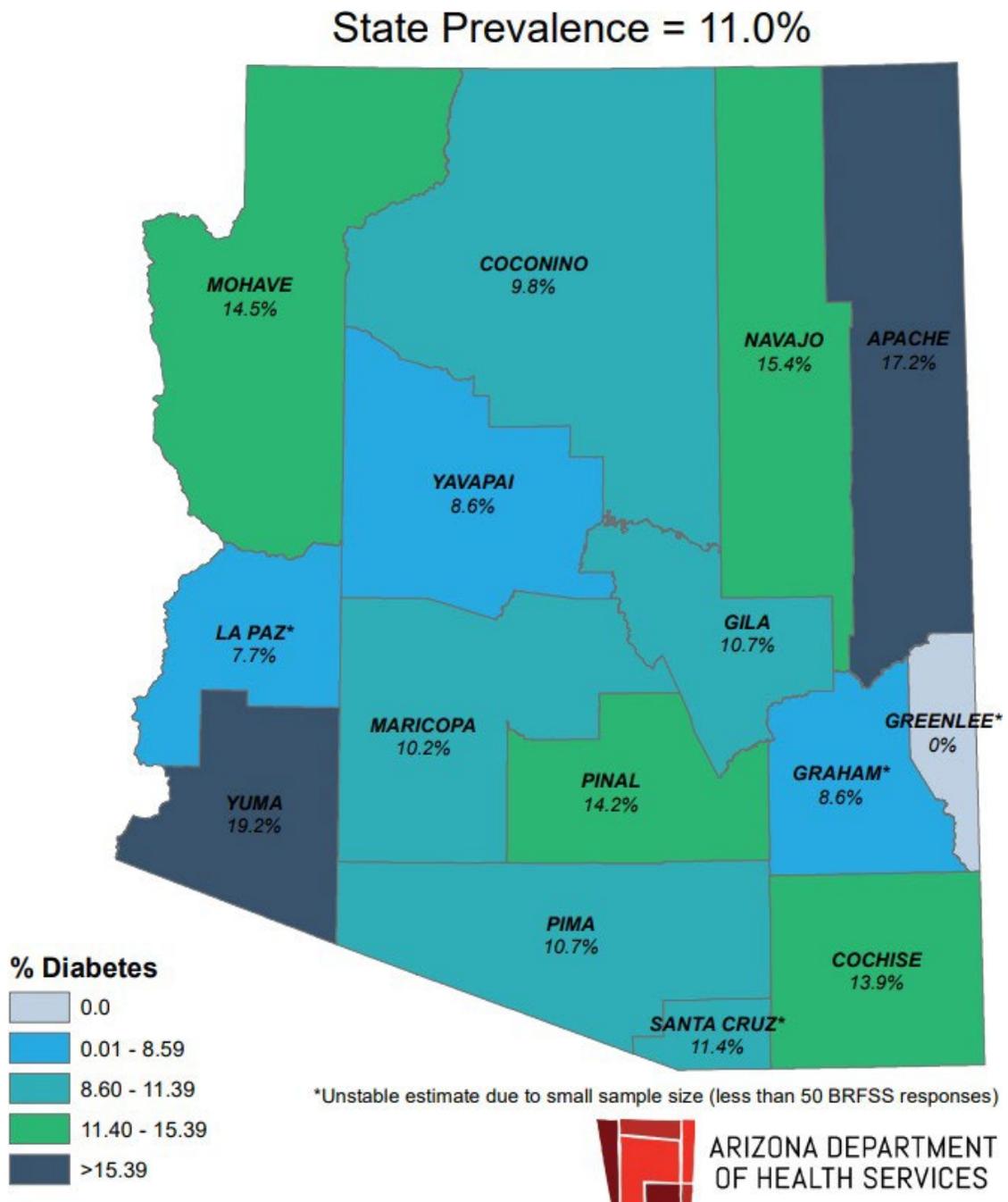
**Figure 2. Arizona and United States Respondents Who Reported a Health Care Professional Told Them That They Have Diabetes, BRFSS 2012-2021**



Data Source: BRFSS, 2012-2021

Prevalence rates for some counties are considered unstable due to small sample size.

Figure 3: Arizona Respondents Who Reported Being a Health Care Professional Told Them That They Have Diabetes, by County, BRFSS 2019

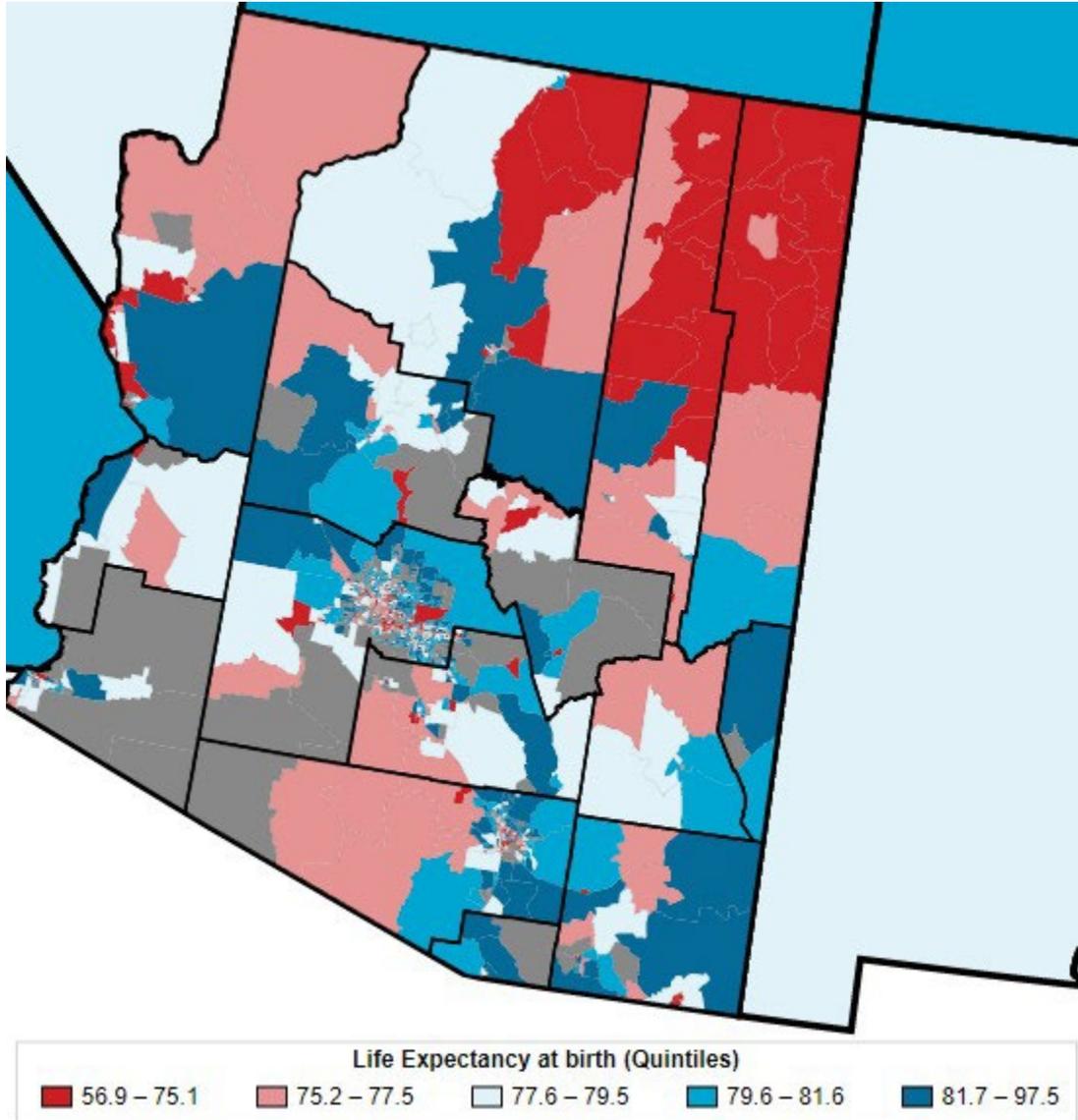


Data Source: BRFSS, 2021

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These differences represent critical health and social issues as related to disease-free quality of life. Individual health is impacted not only by genetic code, but also by zip code; as illustrated by approximate life expectancy within a city (Figure 4) (44).

**Figure 4. Life Expectancy at Birth by Zip Code, Arizona Census Tracts, 2010-2015**

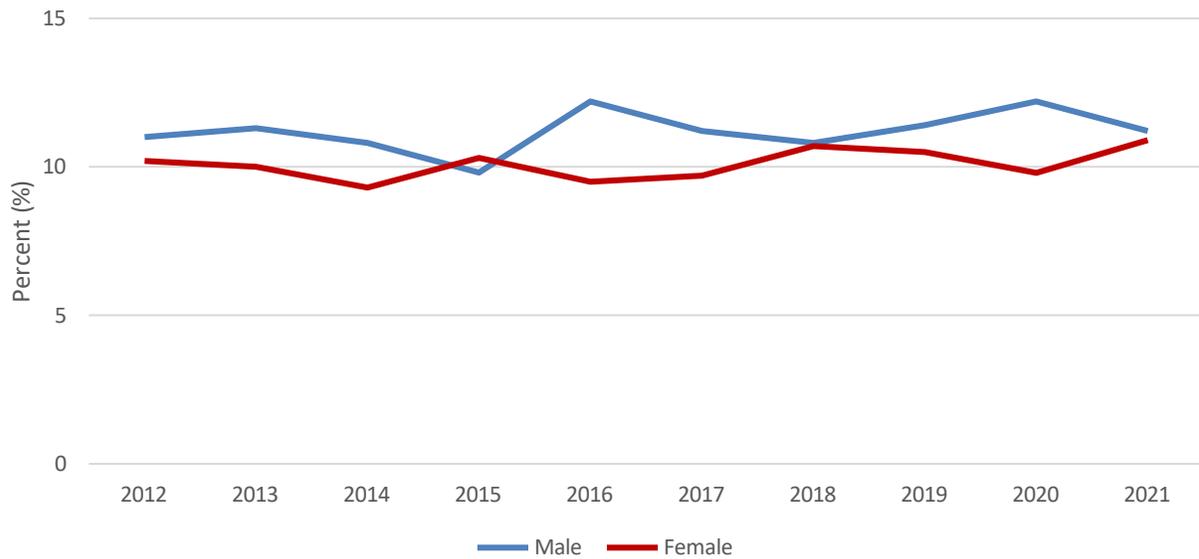


Data Source: National Center for Health Statistics, 2020. <https://www.cdc.gov/nchs/data-visualization/life-expectancy/>

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In 2020-2021, the prevalence of diabetes (2021) and prediabetes (2020) was similar for males and females (Figure 5, Tables 2-3). The percentage of adults who have ever had diabetes in Arizona are similar between males and females (Figure 5). Trends from 2012-2021 of adults who have ever had diabetes have not consistently increased or decreased.

**Figure 5. Arizona and United States Respondents Who Reported a Health Care Professional Told Them That They Have Diabetes, by Gender, BRFSS 2012-2021**



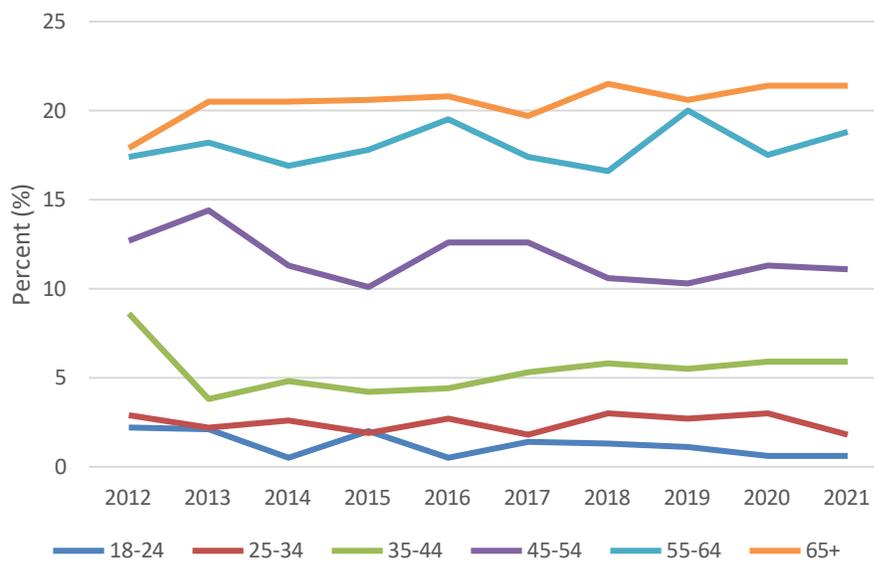
Data Source: Arizona BRFSS, 2012-2021

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The percentage of adults who have ever had diabetes in Arizona are higher among the oldest age groups (45+) (Figure 6). Trends from 2012-2021 of adults who have ever had diabetes have increased among those 35-44, 55-64, and 65+ years of age. BRFSS does not survey persons younger than 18; therefore, rates for these persons are not included.

In 2020-2021, the prevalence of diabetes (2021) and prediabetes (2020) was similar and higher for persons aged 45 years or older than persons younger than 45 years (Figure 6, Tables 2-3).

**Figure 6. Arizona and United States Respondents Who Reported a Health Care Professional Told Them That They Have Diabetes, by Age Groups, BRFSS 2012-2021**

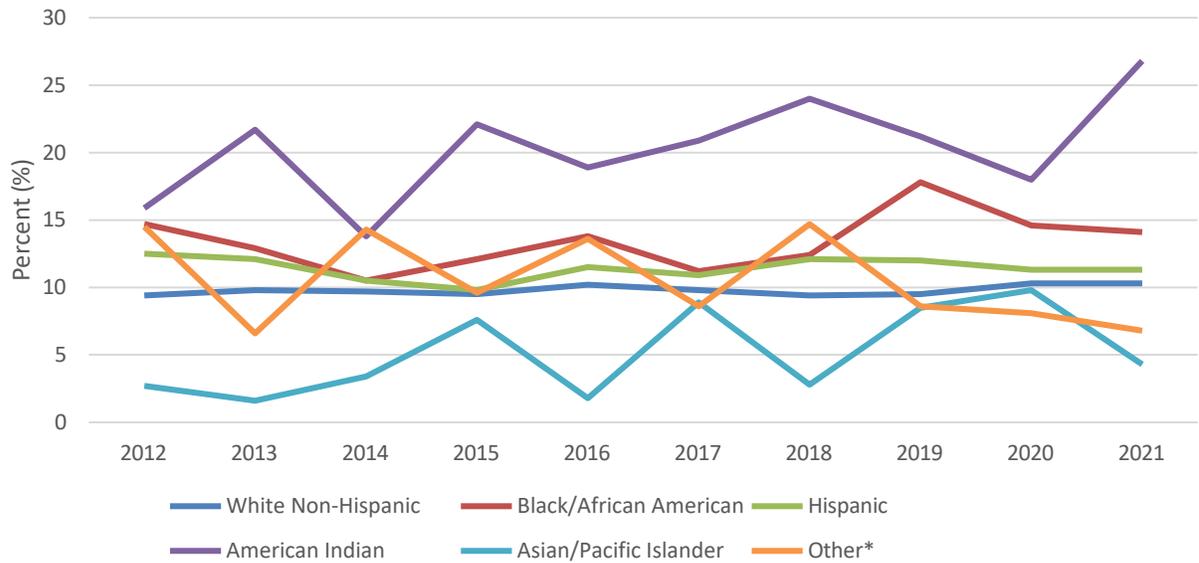


Data Source: Arizona BRFSS, 2012-2021

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The percentage of adults who have ever had diabetes in Arizona are higher among American Indian, Black/African American, and Hispanic persons (Figure 7). Trends from 2012-2021 of adults who have ever had diabetes have increased among American Indian and Black/African American persons.

**Figure 7. Arizona and United States Respondents Who Reported a Health Care Professional Told Them That They Have Diabetes, by Race/Ethnicity, BRFSS 2012-2021**

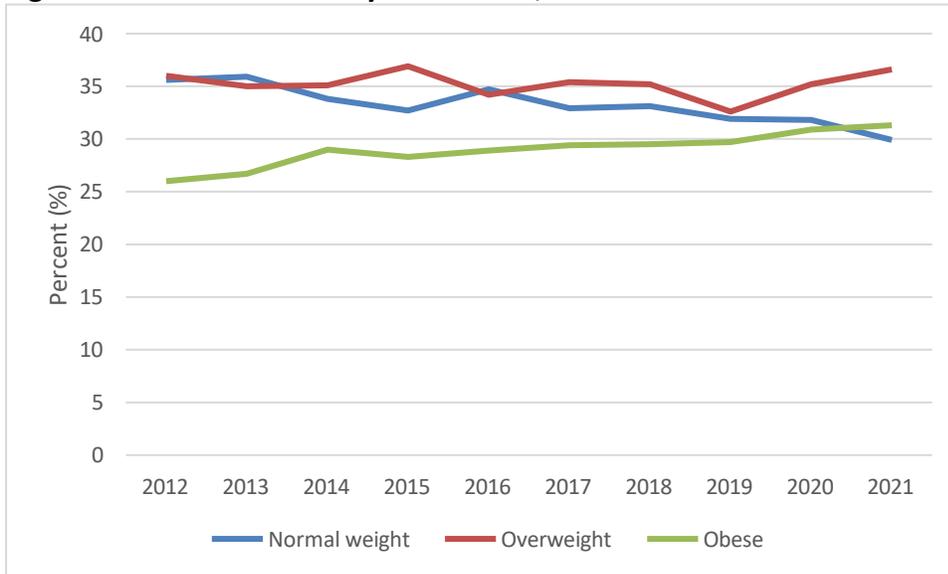


Data Source: Arizona BRFSS, 2012-2021

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The prevalence of diabetes and prediabetes is highest among persons with a body mass index classified as overweight compared to those classified as normal or obese (Figure 8; Tables 2-3). Figure 8 shows body mass index (BMI) category trends in Arizona from 2012-2021. The percentage of Arizona adults categorized as obese has increased from 2012-2021.

**Figure 8. Arizona Adult Body Mass Index, BRFSS 2012-2021**



Data Source: BRFSS, 2012-2021. Notes: BMI is a person's weight in kilograms divided by the square of height in meters. The standard weight status categories associated with BMI ranges for adults are as follows: underweight (<18.5), normal or healthy weight (18.5-24.9), overweight (25.0-29.9), and obese ( $\geq$ 30.0).

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Table 2 shows the percentage of Arizonans who were told by a healthcare professional they had diabetes by gender, age, marital status, race/ethnicity, education, income, and employment status.

The prevalence of diabetes and prediabetes was also higher for those without a high school diploma compared with those with have a high school degree or higher; and highest for persons making less than \$25,000 than for persons making more than \$25,000 (Table 2-3).

**Table 2. Arizonan respondents who reported a healthcare professional told them they have diabetes, 2021**

Characteristics	%	n <sup>1</sup>	95% Confidence Interval <sup>2</sup>
<b>United States Total</b>	11.4	57,616	
<b>Arizona Total</b>	11.0	1337	10.2 – 11.9
<b>Gender</b>			
Male	11.2	668	10.0 – 12.3
Female	10.9	669	9.8 – 12.1
<b>Age</b>			
18-24	*	*	*
25-34	1.8	18	0.9 – 2.8
35-44	5.9	77	4.3 – 7.5
45-54	11.1	173	9.0 – 13.2
55-64	18.8	349	16.3 – 21.3
65+	21.4	715	19.4 – 23.5
<b>Marital Status</b>			
Married <sup>3</sup>	10.9	688	9.8 – 12.0
Previously Married <sup>4</sup>	16.5	274	14.0 – 19.0
Widowed	20.4	209	16.6 – 24.2
Never Married	5.7	156	4.4 – 7.0
<b>Race/Ethnicity</b>			
White Non-Hispanic	10.3	814	9.3 – 11.3
Black/African American	14.1	40	9.3 – 18.9
Hispanic	11.3	285	9.6 – 13.0
American Indian	26.8	124	20.6 – 33.1
Asian/Pacific Islander	4.3	14	1.2 – 7.5

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Other <sup>5</sup>	6.8	26	3.4 – 10.3
<b>Education</b>			
Less than High school graduate	17.5	135	14.0 – 21.0
High school graduate/GED	9.7	293	8.2 – 11.2
Some college/technical school	12.1	497	10.7 – 13.5
College/technical school graduate	8.0	406	6.9 – 9.1
<b>Income</b>			
Less than \$15,000	21.6	128	16.6 – 26.5
\$15,000 to \$24,999	15.6	178	12.4 – 18.7
\$25,000 to \$34,999	13.2	184	10.7 – 15.8
\$35,000 to \$49,999	10.2	172	8.1 – 12.3
\$50,000 to \$74,999	9.8	165	7.9 – 11.8
\$75,000 +	6.9	249	5.7 – 8.1
<b>Employment Status</b>			
Employed/Self-Employed	6.2	365	5.4 – 7.0
Out of Work	9.8	62	6.9 – 12.7
Homemaker	7.9	53	4.7 – 11.0
Student	1.7	7	0.3 – 3.2
Retired	22.6	669	20.3 – 24.9
Unable to Work	29.4	169	24.2 – 34.6

Data Source: BRFSS, 2021. Use caution when interpreting percent based on less than 50. Notes: \*Count and percent based on 6 or less responses have been suppressed; <sup>1</sup>n – number of survey respondents; <sup>2</sup>The confidence interval is the range of values the estimated percent diabetes could exist (e.g., Arizona diabetes percentages 11.0% could be as low as 10.2% or as high as 11.9%); <sup>3</sup>includes members of unmarried couples; <sup>4</sup>Includes divorced and separated; <sup>5</sup>Includes other races and persons reporting multiple races.

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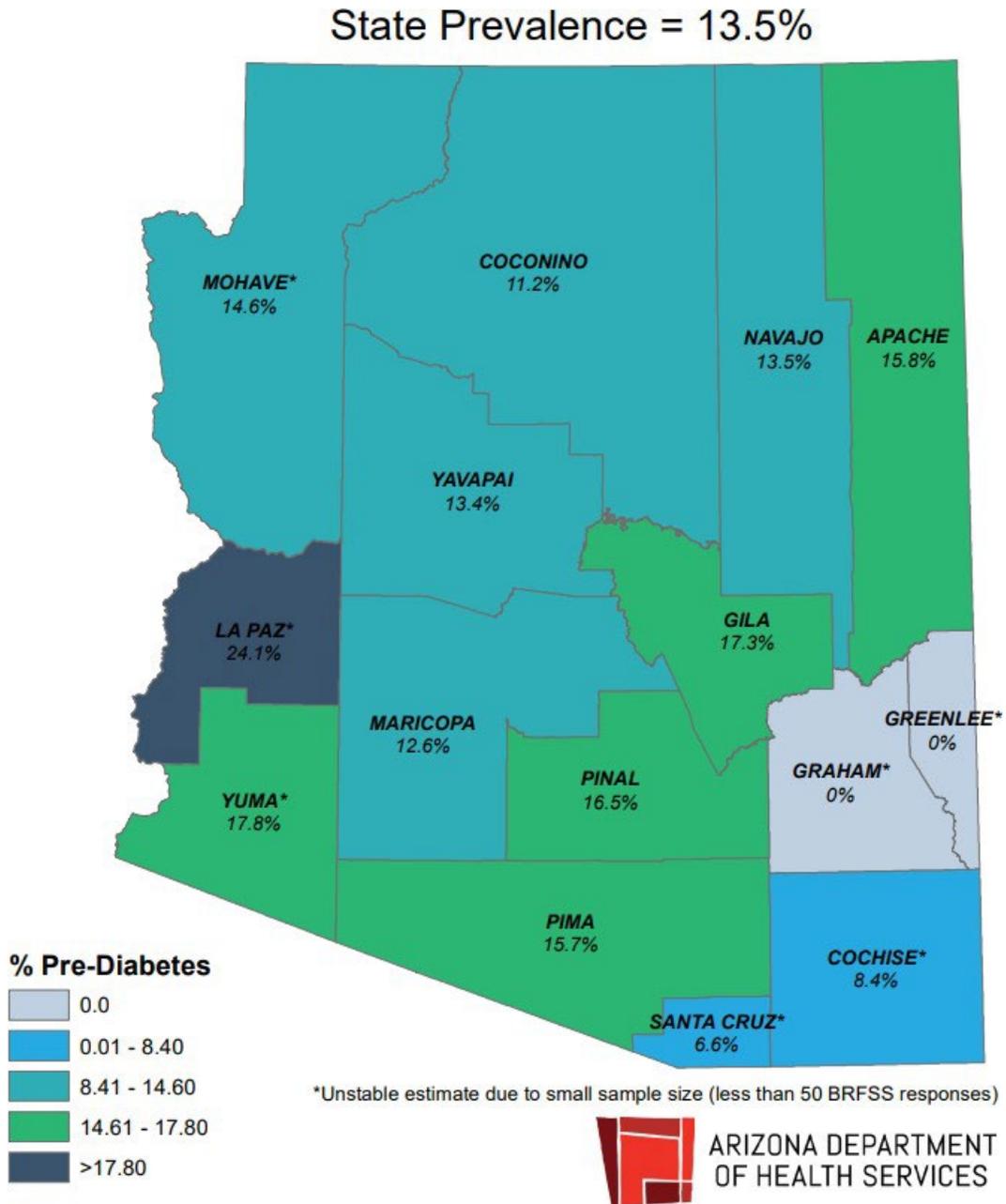
Table 3 shows the percentage of Arizonans who were told by a healthcare professional they had prediabetes by gender, age, marital status, race/ethnicity, education, income, and employment status.

**Table 3. Arizonan respondents who reported a healthcare professional told them they have prediabetes, 2020**

Characteristics	%	n <sup>1</sup>	95% Confidence Interval <sup>2</sup>
<b>United States Total</b>	12.4	28,314	
<b>Arizona Total</b>	13.5	1246	12.4 – 14.5
<b>Gender</b>			
Male	13.3	573	11.9 – 14.8
Female	13.6	673	12.2 – 15.1
<b>Age</b>			
18-24	6.6	33	4.1 – 9.1
25-34	5.6	62	4.0 – 7.3
35-44	11.3	112	8.8 – 13.8
45-54	16.5	212	13.7 – 19.2
55-64	19.5	280	16.5 – 22.5
65+	20.2	547	17.8 – 22.7
<b>Marital Status</b>			
Married <sup>3</sup>	13.6	688	12.2 – 15.0
Previously Married <sup>4</sup>	19.0	251	15.9 – 22.0
Widowed	16.9	133	12.2 – 21.6
Never Married	9.4	162	7.6 – 11.3
<b>Race/Ethnicity</b>			
White Non-Hispanic	13.5	810	12.2 – 14.8
Black/African American	14.3	33	8.7 – 20.0
Hispanic	14.2	233	12.0 – 16.4
American Indian	12.9	74	8.2 – 17.6
Asian/Pacific Islander	8.2	17	3.3 – 13.1
Other <sup>5</sup>	8.9	40	5.0 – 12.8
<b>Education</b>			
Less than High school graduate	15.7	99	12.0 – 19.4
High school graduate/GED	11.7	285	9.8 – 13.6
Some college/technical school	14.6	411	12.8 – 16.5
College/technical school graduate	12.8	448	11.1 – 14.4
<b>Income</b>			
Less than \$15,000	16.0	111	12.0 – 20.0
\$15,000 to \$24,999	12.1	168	9.6 – 14.7
\$25,000 to \$34,999	14.2	111	10.5 – 17.9
\$35,000 to \$49,999	16.2	160	12.8 – 19.6
\$50,000 to \$74,999	13.6	152	10.7 – 16.6
\$75,000 +	12.7	316	10.8 – 14.6
<b>Employment Status</b>			
Employed/Self-Employed	11.8	481	10.4 – 13.1
Out of Work	12.7	76	8.8 – 16.5
Homemaker	12.0	57	7.6 – 16.5
Student	5.0	19	2.1 – 7.9
Retired	20.8	492	18.2 – 23.5
Unable to Work	20.1	95	14.4 – 25.7

Data Source: BRFSS, 2020 (prediabetes not asked on 20219 BRFSS). Use caution when interpreting rates based on less than 50. Notes: <sup>1</sup>n – number of survey respondents; <sup>2</sup>The confidence interval is the range of values the estimated percent prediabetes could exist (e.g., Arizona total prediabetes percent of 13.5% could be as low as 12.4% or as high as 14.5%); <sup>3</sup>includes members of unmarried couples; <sup>4</sup>Includes divorced and separated; <sup>5</sup>Includes other races and persons reporting multiple races.

Figure 9. Arizona Respondents Who Reported Being Diagnosed with Prediabetes, by County and Region, BRFSS 2020

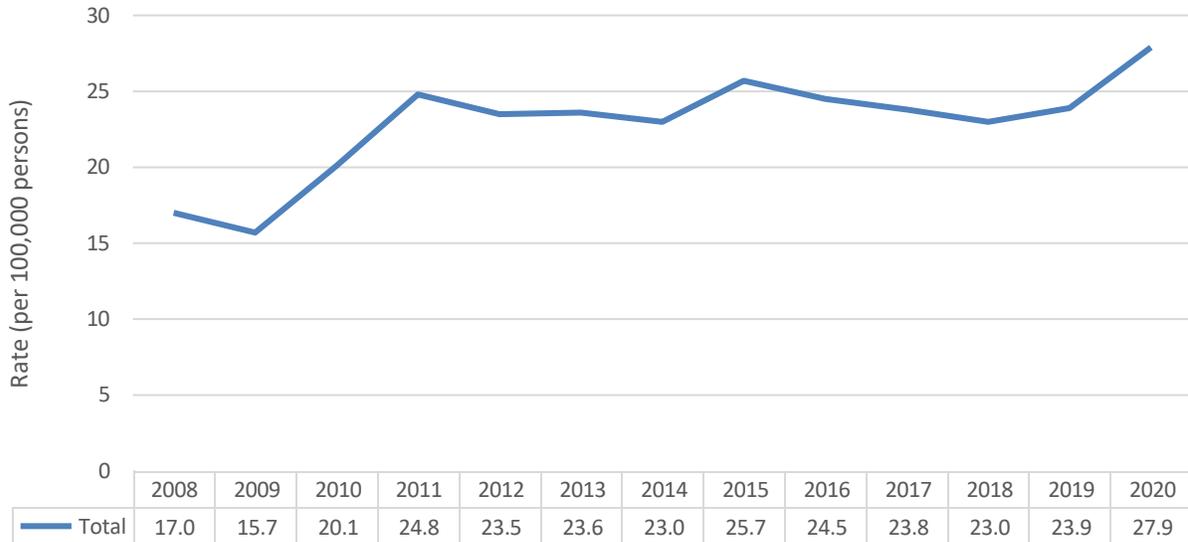


Data Source: BRFSS, 2020

**III. Mortality**

Arizona has experienced an 11% increase in diabetes related deaths from 2018 (23.0) to 2020 (27.9) (Figure 10).

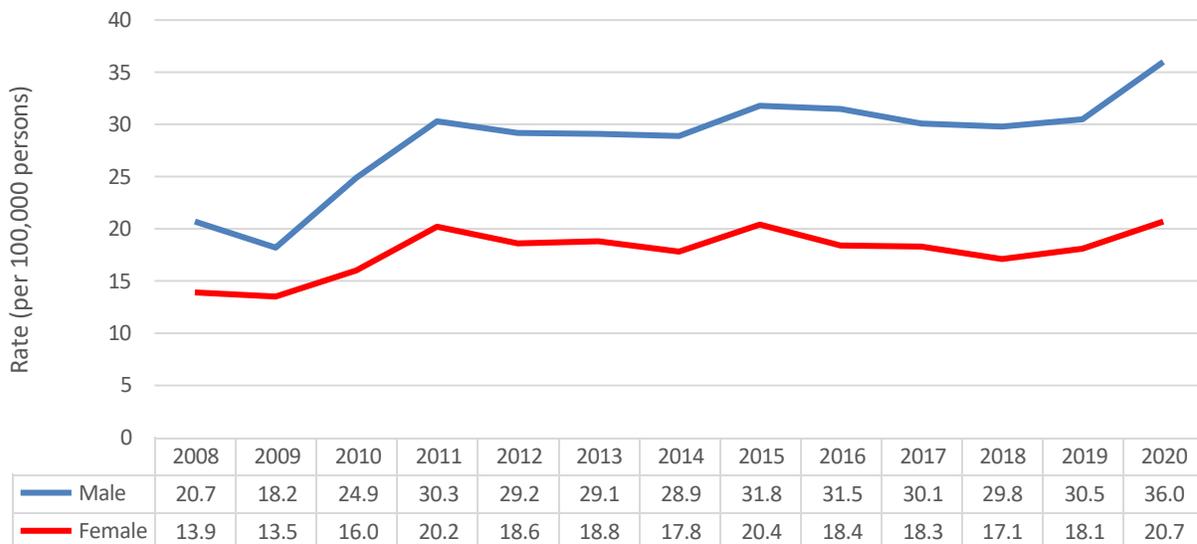
**Figure 10. Age-adjusted mortality rates (per 100,000 persons) for diabetes, 2008-2020**



Data Source: Arizona Vital Statistics, 2008-2020. Rates are age-adjusted and calculated as a rate per 100,000 persons.

Mortality rates for diabetes are higher for males than females (Figure 11).

**Figure 11. Age-adjusted mortality rates (per 100,000 persons) for diabetes, by gender 2008-2020**

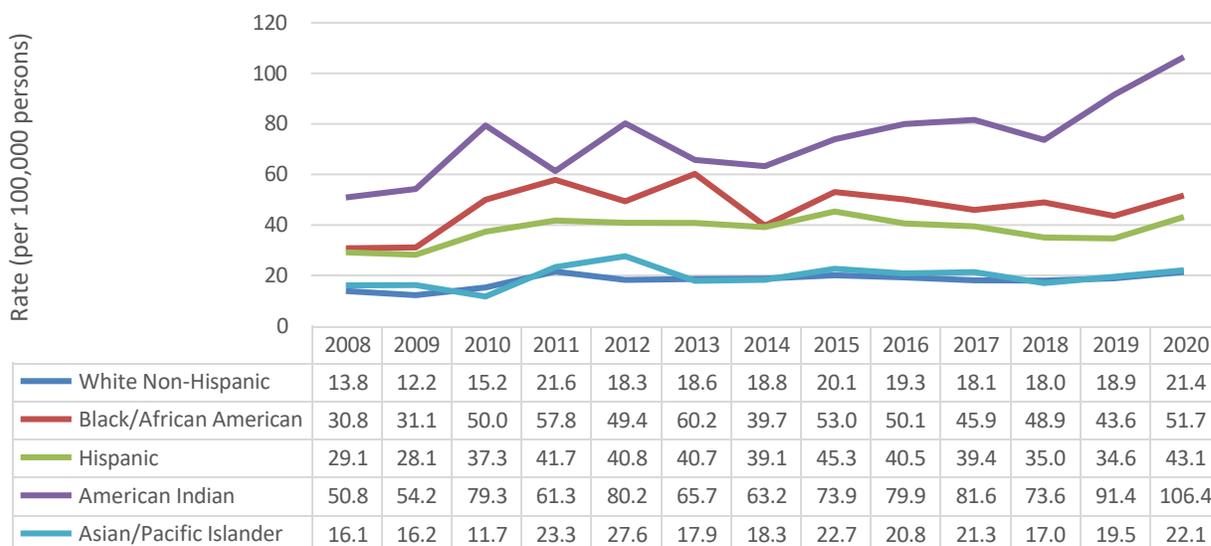


Data Source: Arizona Vital Statistics, 2008-2020. Rates are age-adjusted and calculated as a rate per 100,000 persons.

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Diabetes mortality rates are higher for American Indian/Alaska Native, Black/African American, and Hispanic persons than White or Asian/Pacific Islander persons (Figure 12).

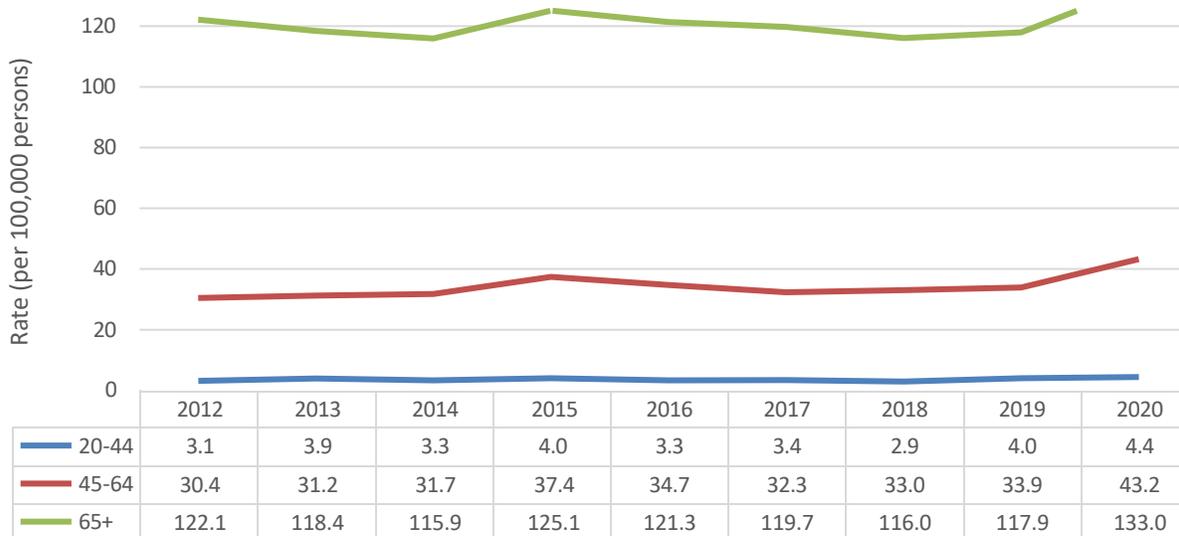
**Figure 12. Age-adjusted mortality rates (per 100,000 persons) for diabetes, by race/ethnicity 2008-2020**



Data Source: Arizona Vital Statistics, 2008-2018. Rates are age-adjusted and calculated as a rate per 100,000 persons.

Diabetes mortality rates are higher for persons aged 65+ or 45-64 than persons aged 20-44 years of age (Figure 13).

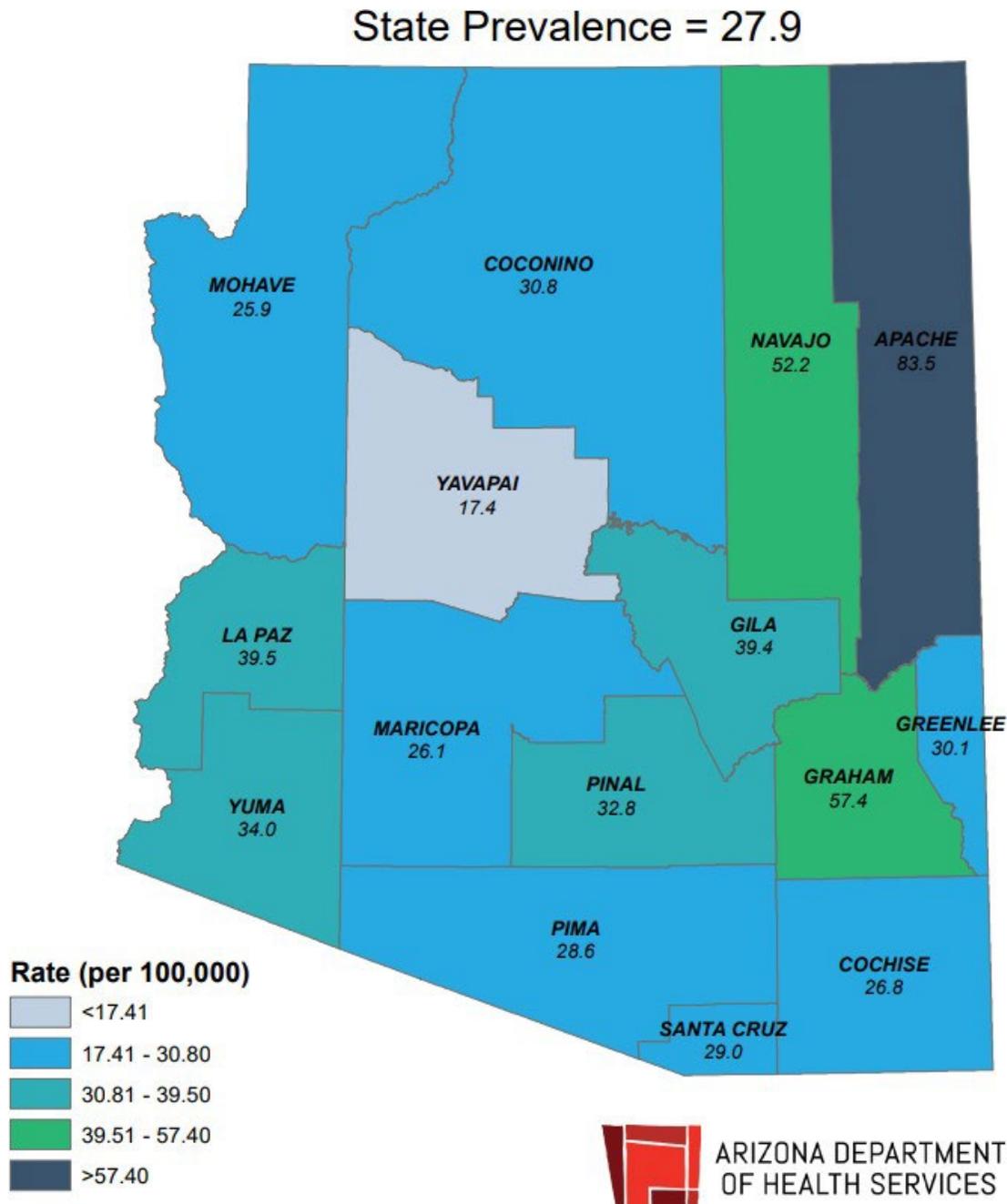
**Figure 13. Mortality rates (per 100,000 persons) for diabetes, by selected age groups 2008-2020**



Data Source: Arizona Vital Statistics, 2008-2020. Rates are calculated as a rate per 100,000 persons.

The mortality rate of diabetes varies across counties in Arizona. Compared to the overall state rate of 27.9 (deaths per 100,000 persons), elevated mortality rates were observed in Apache (83.5), Graham (57.4), Navajo (52.2), La Paz (39.5) and Gila (39.4) counties (Figure 14).

Figure 14. Mortality rates (per 100,000 persons) for diabetes, by county, 2020



Data Source: Arizona Vital Statistics, 2020

## Appendix 4: Financial Costs of Diabetes in Arizona

### A Cost Estimate Baseline for Diabetes in Arizona

#### Background

Cost estimates for diabetes in Arizona require sustainable cross functional health care data frameworks and a periodic cost estimate cadence to produce a reliable cost estimate model. Alignment of data systems in two public health systems, Syndromic Surveillance and Hospital Discharge Data, and their common message formats (i.e., HL7, electronic health records) may provide the data framework to develop a sustainable Arizona diabetes cost estimate model. Current data frameworks provide information that at times omits information or is collected for an earlier time period.

Table 4 below identifies eight sources currently assessing the burden or cost of diabetes in Arizona. Historically, the Arizona Department of Health Services (ADHS) Diabetes Burden Report is Arizona's source of the cost of diabetes in Arizona. The burden report's cost data source is Hospital Discharge Data, and alignment of any new diabetes cost estimate with the Diabetes Burden Report cost estimate will ensure a single authoritative method to describe the cost of diabetes in Arizona.

**Table 4. Data Sources Used to Approximate Diabetes-Related Burden**

Organization	Name of Report	Link
Arizona Department of Health Services	Hospital Discharge Database	<a href="https://pub.azdhs.gov/health-stats/hip/index.php">https://pub.azdhs.gov/health-stats/hip/index.php</a>
Center for Disease Control	Data and Statistics	<a href="https://www.cdc.gov/diabetes/data/">https://www.cdc.gov/diabetes/data/</a>
American Diabetes Association	2018 National and State Report	<a href="#">Economic Costs of Diabetes in the U.S. in 2017</a> <a href="#">ADA 2022 State Fact Sheet - Arizona</a>

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UnitedHealth Foundation	America's Health Rankings	<a href="https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/AZ">https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/AZ</a> <a href="https://www.americashealthrankings.org/learn/reports/2019-senior-report">https://www.americashealthrankings.org/learn/reports/2019-senior-report</a>
National Centers for Health Statistics (CDC)	National Health Interview Survey	<a href="https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm">https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm</a>
National Centers for Health Statistics (CDC)	National Health and Nutrition Examination Survey (NHANES)	<a href="https://wwwn.cdc.gov/nchs/nhanes/default.aspx">https://wwwn.cdc.gov/nchs/nhanes/default.aspx</a>
<a href="#">Robert Wood Johnson Foundation</a>	County Health Rankings and Roadmaps	<a href="https://www.countyhealthrankings.org/app/arizona/2020/measure/outcomes/60/data">https://www.countyhealthrankings.org/app/arizona/2020/measure/outcomes/60/data</a> <a href="https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html">https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html</a>
Sanofi: Managed Care Digest Series	Arizona Type 2 Diabetes Report™	<a href="#">Arizona Type 2 Diabetes Report™ - 2021</a>

### Diabetes Cost Estimation Resources – not an exhaustive list

### ***Cost Estimation Research/Method***

Diabetes costs are typically broken into direct medical or indirect costs. Direct costs are associated with diabetes-related medical billing. Indirect costs may be financial burdens wherein diabetes has contributed to other primary, secondary, and tertiary conditions such as diseases of the heart, kidney disease, blindness, lower leg amputations and arthritis. Indirect costs also include absenteeism, reduced productivity while at work, or inability to work as a result of disease-related disability. These financial costs could also be described as explicit or implicit costs. The ADHS Hospital Discharge Database (HDD) is the primary source of information for the cost of diabetes used in the development of this report.

To align with the American Diabetes Association's (ADA), *Economic Cost of Diabetes in the U.S. 2017*, Arizona diabetes costs will be described as direct medical and indirect costs. ADA's cost model is an inflation and growth adjusted model associated with diabetes prevalence.

Future Arizona diabetes cost estimates will also strive to align with the Arizona Management System (AMS) to support operational decision making for all organizations involved in executing the Arizona Diabetes Action Plan.

### ***Arizona Diabetes Operational and Financial Data***

**The following State of Arizona data sources were used:**

1. UnitedHealthcare | ASRS and PSPRS
2. Arizona Department of Administration - Medical Data
3. AHCCCS - Medical Data

**The following external data sources were used:**

1. American Diabetes Association - Economic Cost of Diabetes
2. Behavioral Risk Factor Surveillance System (BRFSS)
3. Hospital Discharge Data

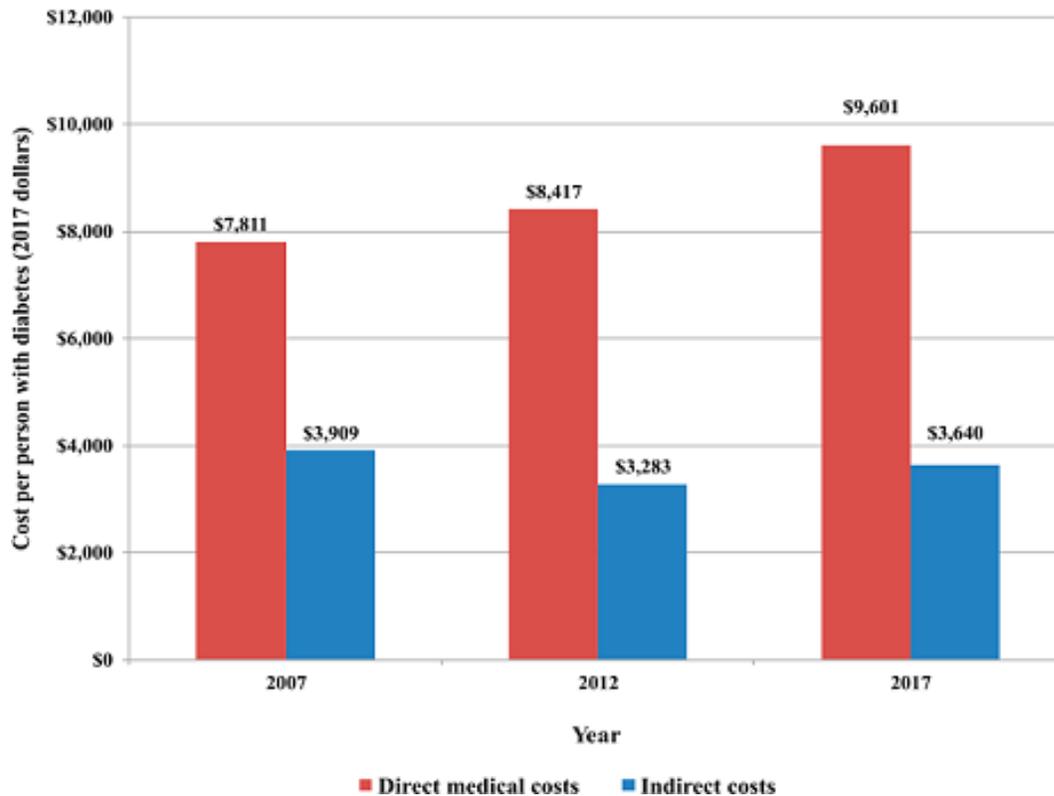
These data sources were selected due to the availability of data, historic relevance and role of state institutions providing support to prevent, control, and treat diabetes. Access to financial codes to support the cost estimate was also a big factor in identifying state data sources.

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Until a data framework is developed with a sustainable cost estimation model, Arizona will use the 2017 ADA diabetes per capita cost estimate to reference direct medical and indirect costs for 2019. This will provide a per capita cost estimate for different Arizona populations that lack specific per capita cost.

The average direct medical cost per person, per capita was approximately \$9,601 (in 2017 Dollars). The average indirect cost per person, per capita was approximately \$3,640 (in 2017 Dollars) (Figure 15).

**Figure 15. Average Direct and Indirect Costs Associated with Diabetes, 2007-2017 (in 2017 dollars)**



Data Source: American Diabetes Association, Economic Cost of Diabetes in the U.S. 2017

The time frame for the Arizona diabetes cost estimate within this report is based on one year, primarily using data from the 2021 HDD (Tables 5-6). This cost estimate may further help identify data elements and structures required to develop a model. While this cost estimate is a point estimate, additional years of data are needed to develop a cost estimate model similar to the model developed by the ADA.

**State Cost Estimate – Hospital Discharge Data (HDD):**

**Table 5. Diabetes-related and Diabetes-specific Hospitalization or Emergency Department Discharges and Costs, by Diabetes Type, Arizona 2021**

	Diabetes-Related (any Diagnosis)		Diabetes-Specific (Primary Diagnosis)	
	Total Discharges	Total Charges (\$)	Total Discharges	Total Charges (\$)
<b>Total</b>	379,686	\$18,814,533,061	35,552	\$1,252,453,034
<b>Underlying Conditions</b>	353	\$25,595,938	50	\$445,134
<b>Drug or Chemical Induced</b>	381	\$53,504,643	26	\$1,181,618
<b>Type 1</b>	17,010	\$663,126,958	6,209	\$195,279,865
<b>Type 2</b>	352,138	\$17,792,576,106	24,926	\$950,053,573
<b>Pregnancy Related</b>	10,763	\$306,787,044	4,238	\$102,153,581
<b>Other</b>	548	\$28,739,025	103	\$3,339,263

Data Source: Arizona Hospital Discharge Database, 2021; Diabetes ICD-10 codes included: E08, E09, E10, E11, E13, O24

**Table 6. Diabetes-related and Diabetes-specific Hospitalization or Emergency Department Discharges, Costs, and Length of Stay, by Payer Type, Arizona 2021**

	Diabetes-Related (any Diagnosis)			Diabetes-Specific (Primary Diagnosis)		
	Total Discharges	Total Charges (\$)	Avg. Length Stay (days)*	Total Discharges	Total Charges (\$)	Avg. Length Stay (days)
<b>AHCCCS/Medicaid</b>	98,926	\$4,117,593,432	3.24	14,152	\$419,055,206	2.51
<b>Medicare</b>	189,820	\$10,399,224,399	3.88	10,900	\$506,825,866	3.49
<b>Other Federal</b>	7,890	\$395,454,724	3.53	709	\$26,414,960	2.99
<b>Private</b>	69,061	\$3,345,665,730	3.31	8,183	\$261,239,734	2.47
<b>Self-Pay</b>	8,931	\$263,183,006	2.12	1,238	\$24,857,557	1.73
<b>Charity</b>	191	\$16,551,153	5.83	26	\$1,253,913	2.54
<b>Other</b>	4859	\$276,486,916	2.51	344	\$12,805,798	2.90

Data Source: Arizona Hospital Discharge Database, 2021; Diabetes ICD-10 codes included: E08, E09, E10, E11, E13, O24

## House Bill 2258: Diabetes Action Plan and Report

According to the American Diabetes Association, the total Arizona estimated cost of diagnosed diabetes in 2017 was \$6.8 billion (3). \$5.1 billion were attributed to direct medical costs (physician office visits, prescription medications, diabetes supplies, hospital inpatient care). \$1.7 billion were attributed to indirect costs (absenteeism, reduction in work productivity, early disability, and mortality). When compared to the 2021 ADHS HDD, it is noted that financial burden estimates are smaller. This disparity is largely due to data differences in ICD9 and ICD10 transitions and data interpretations at the individual state level. As noted above (Table 5), there were nearly 380,000 discharges from inpatient hospital care or the Emergency Department due to diabetes in 2021, with the majority of hospital stays occurring within the Medicare and Medicaid populations. The average hospital stay for these discharges was 3.2-3.9 days.

## Appendix 5 - Data Measures and Sources Included in Diabetes Action Plan and Report (Charts and Data Tables)

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The financial data reported in this section is limited to what was accessible within the allocated budget, time limitations and agency expertise.

[2019 Arizona State Health Assessment](#)

[2021 Arizona State Health Assessment](#)

[2021 Diabetes Action Plan and Report Previous Recommendations](#)

[2021 Sanofi - Arizona Type 2 Diabetes Report™](#)

[Arizona Department of Health, Hospital Discharge Database, 2019](#)

[Arizona Health Care Cost Containment System \(AHCCCS\) Population Highlights 2022](#)

[Arizona National Diabetes Prevention Program Narrative Report, July 2022](#)

[Arizona State Retirement System | UnitedHealth Group Diabetes Data Request 2021-2022](#)

[Phoenix Area IHS Statement for ADHS – 2023 Diabetes Action Plan and Report](#)

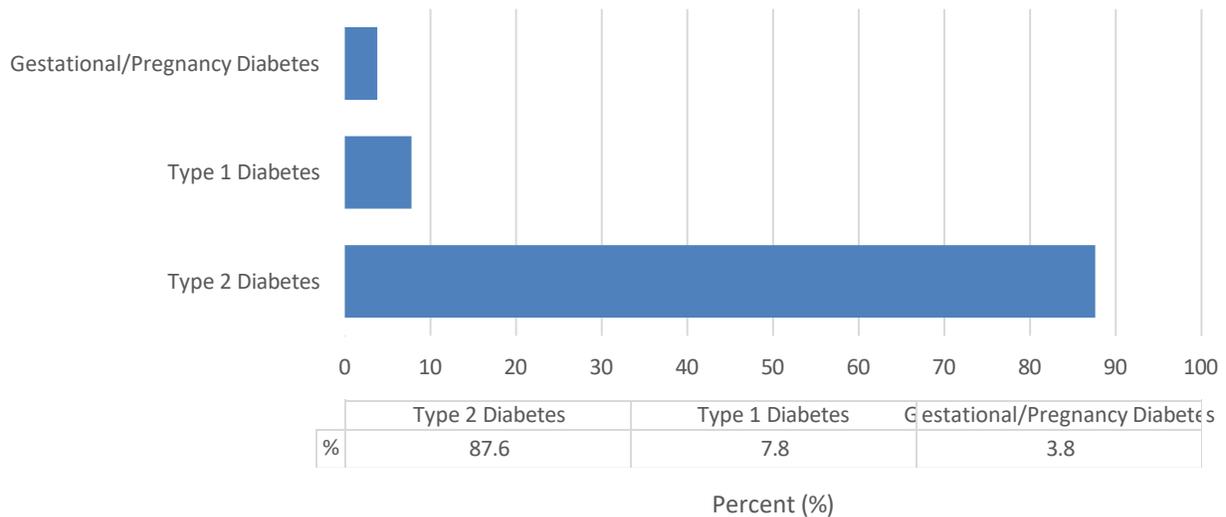
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### Diabetes Related Reimbursement for ADOA

In 2020, ADOA reported 7,484 (5.4%) members of a total 136,095 that had 18,621 visits to a primary care provider and had an ICD-10 code designated for diabetes, prediabetes or a comorbid condition in addition to diabetes. Within this population of members with diabetes, 82.5% of ADOA members were diagnosed with type 2 diabetes, 7.0% with type 1 diabetes and 2.5% were diagnosed with gestational diabetes (Figure 16).

In 2021, ADOA reported 9,254 (5.4%) members of a total 131,691 that had 22,854 visits to a primary care provider and had an ICD-10 code designated for diabetes, prediabetes or a comorbid condition in addition to diabetes. Within this population of members with diabetes, 80.3% of ADOA members were diagnosed with type 2 diabetes, 7.2% with type 1 diabetes and 2.6% were diagnosed with gestational diabetes.

**Figure 16. Diabetes Type among ADOA members reported as having diabetes, 2020-2021**

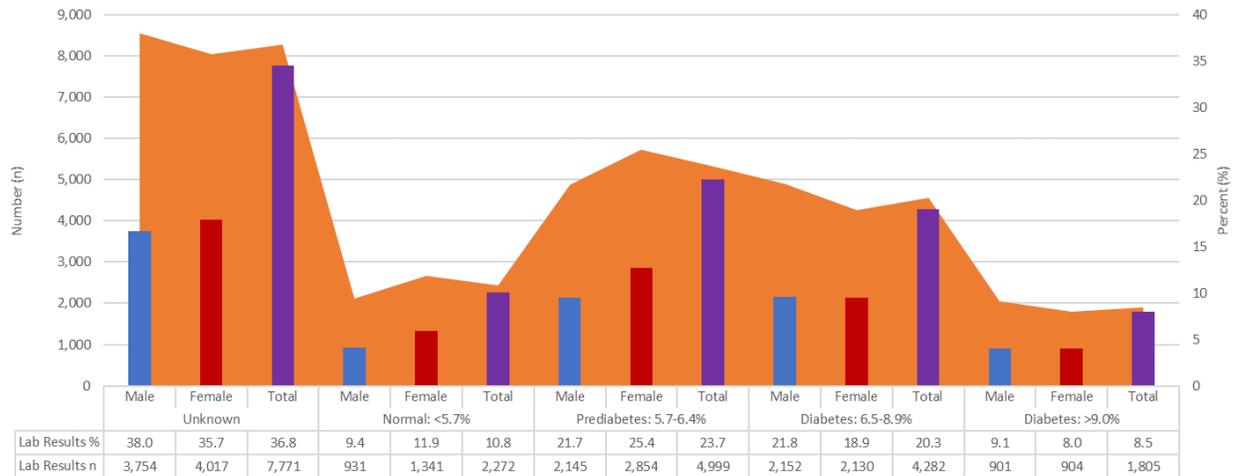


Data Source: ADOA, 2020-2021

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Among ADOA members that were reported as having an ICD-10 code associated with diabetes, 8.5% had an A1C greater than 9%, 20.3% had an A1C between 6.5-8.9% and 23.7% were considered prediabetic (Figure 17). An unknown A1C level was present for 36.8% of these members.

**Figure 17. A1C Laboratory results for ADOA members reported as having diabetes, by gender, 2020-2021**

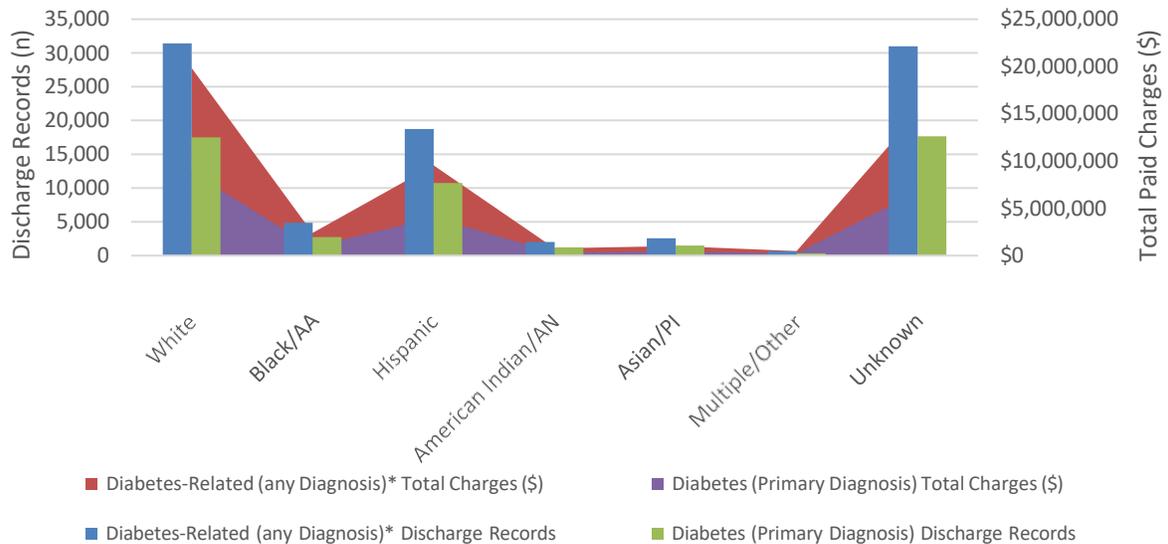


Data Source: ADOA, 2020-2021. The vertical bars (red, blue, and purple) represent the number by gender of A1C laboratory results for each threshold (normal, prediabetes, diabetes). The orange shading represents the corresponding percentage of persons by gender for each threshold.

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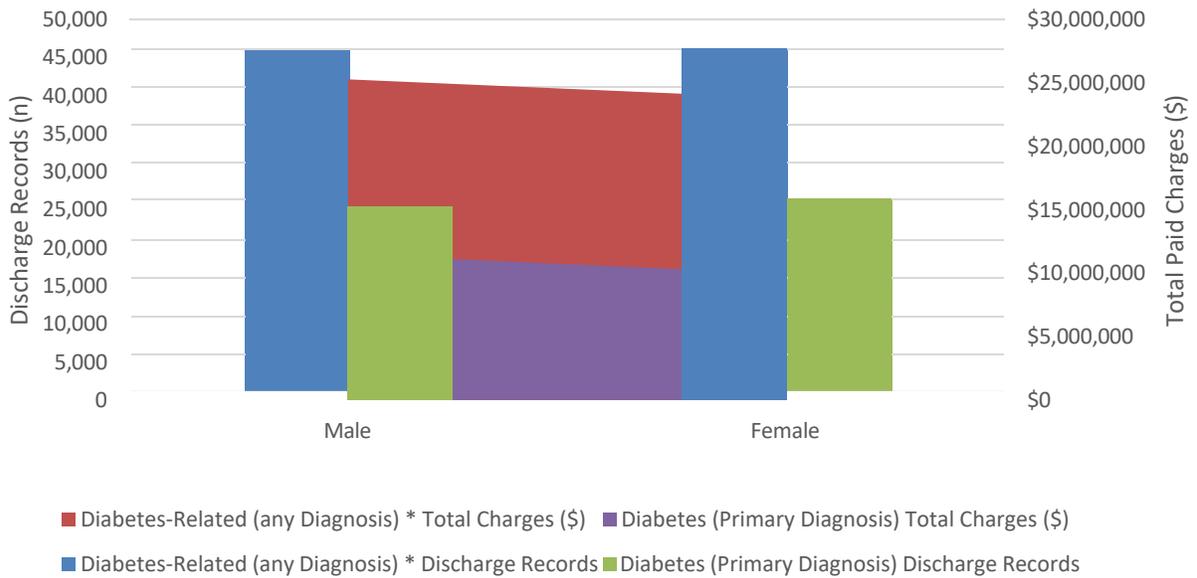
In 2020, ADOA’s healthcare plan cost was \$54,158,765 for its 49,274 diabetic members (Figure 18). In 2021, ADOA’s healthcare plan cost was \$55,781,241 for its 49,804 diabetic members.

**Figure 18. Number and Cost of Discharge Records\* for ADOA members reported as having diabetes, by race/ethnicity, 2020-2021**



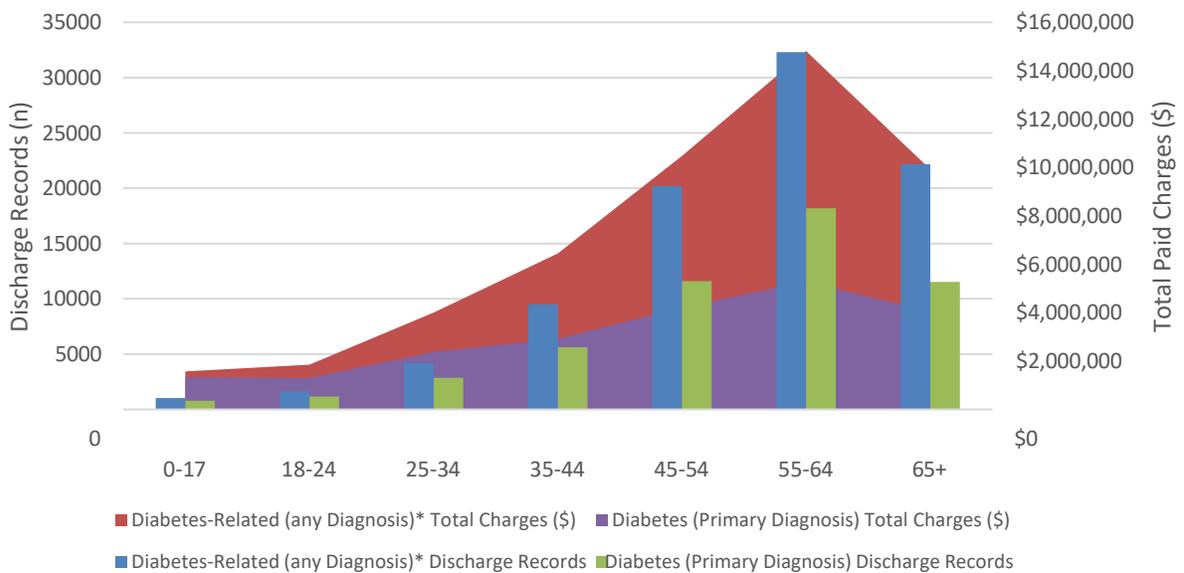
Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 thru 3; AA-African American; AN-Alaska Native; PI-Pacific Islander. The vertical bars (blue, green) represent the number of diabetes-related discharges (primary or any) for race/ethnicity groups. The red and purple shading represent the corresponding dollar (\$) amount of total charges for diabetes-related discharges for these race/ethnicity groups.

**Figure 19. Number and Cost of Discharge Records\* for ADOA members reported as having diabetes, by gender, 2020-2021**



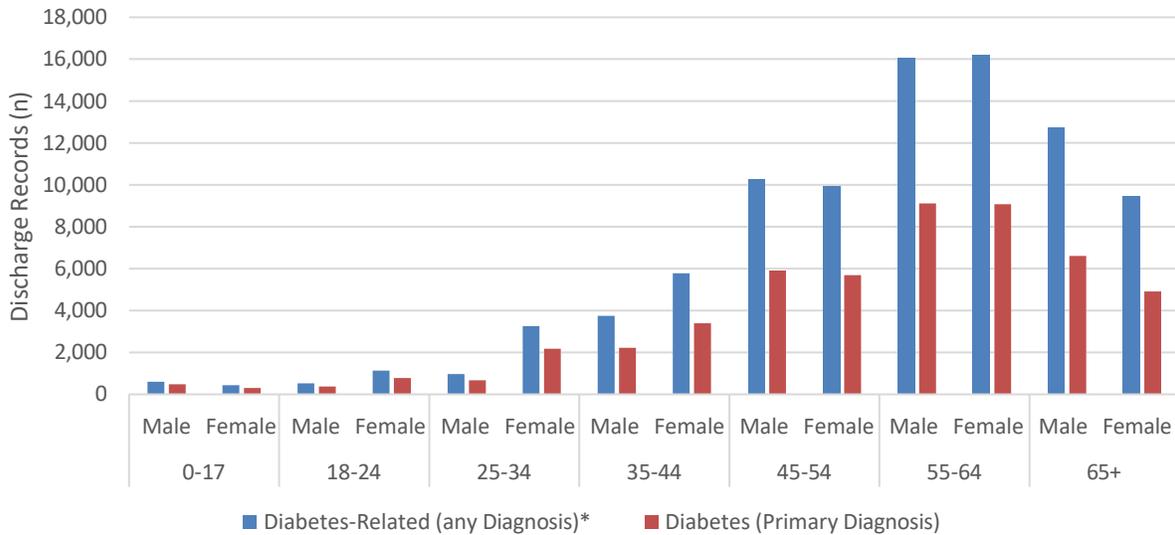
Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 through 3. The vertical bars (blue, green) represent the number of diabetes-related discharges (primary or any) for males and females. The red and purple shading represent the corresponding dollar (\$) amount of total charges for diabetes-related discharges for males and females.

**Figure 20. Number and Cost of Discharge Records\* for ADOA members reported as having diabetes, by age groups, 2020-2021**



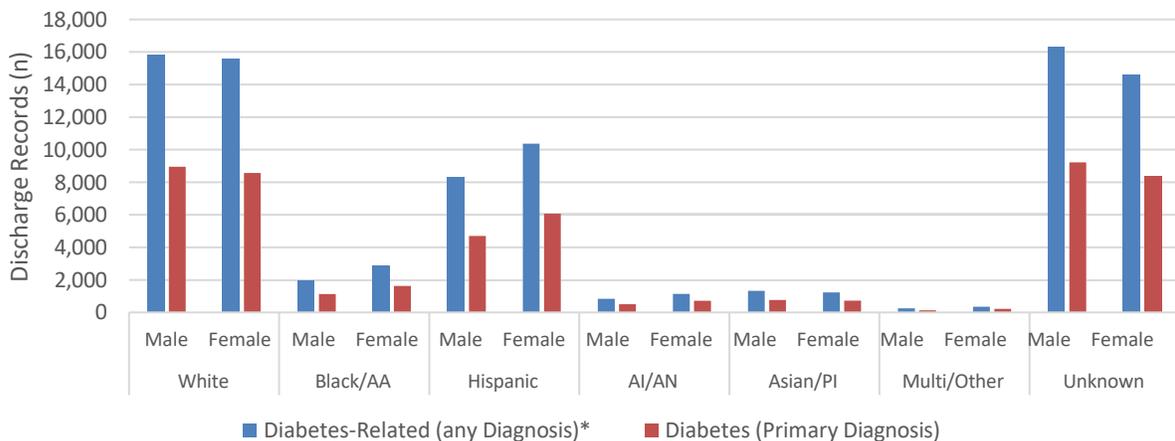
Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 through 3; Member age as of June 30, 2021. The vertical bars (blue, green) represent the number of diabetes-related discharges (primary or any) by age group. The red and purple shading represent the corresponding dollar (\$) amount of total charges for diabetes-related discharges for each age group.

**Figure 21. Number of Discharge Records\* for ADOA members reported as having diabetes, by gender and age groups, 2020-2021**



Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 thru 3; Member age as of June 30, 2021

**Figure 22. Number of Discharge Records\* for ADOA members reported as having diabetes, by gender and age groups, 2020-2021**



Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 thru 3; AA-African American; AI/AN-American Indian/Alaska Native; PI-Pacific Islander

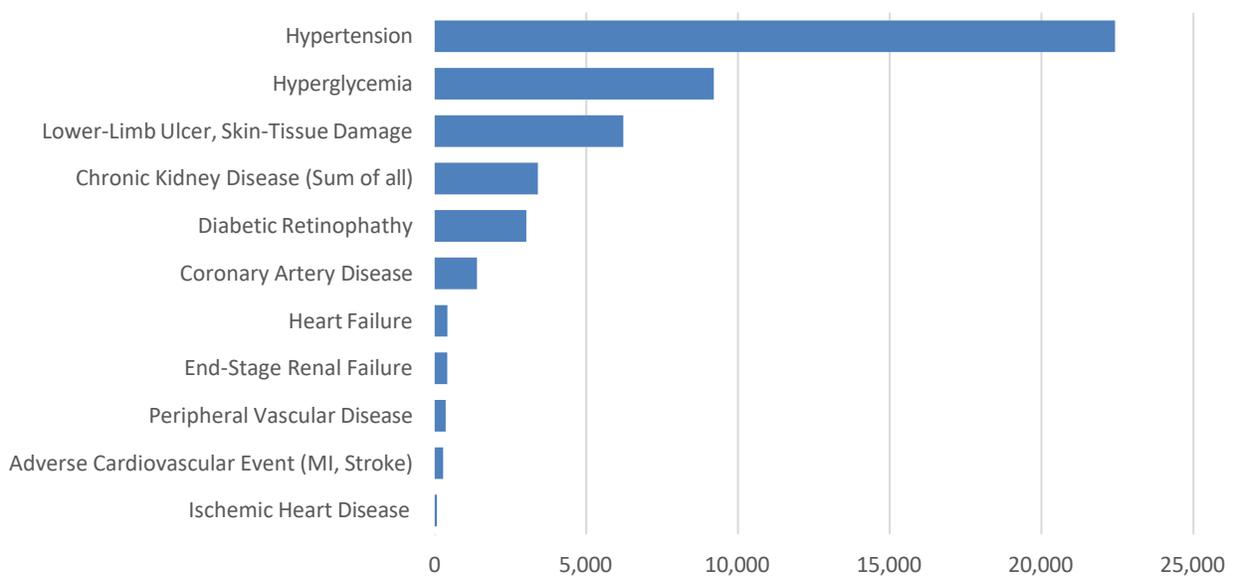
## House Bill 2258: Diabetes Action Plan and Report

In 2020, ADOA reported 9,690 reported having at least one comorbid condition in addition to diabetes, Plan cost \$15,600,675.

In 2021, ADOA reported 9,305 reported having at least one comorbid condition in addition to diabetes, Plan cost \$15,024,341.

Comorbid conditions identified for the use of this report were adverse cardiovascular events, ischemic heart disease, congestive heart failure, hypertension, coronary artery disease, peripheral vascular disease, kidney disease, end stage renal failure, diabetic retinopathy and hyperglycemia (Figure 23).

**Figure 23. Number of Comorbidity Discharge Records\* for ADOA members reported as having diabetes, 2020-2021**

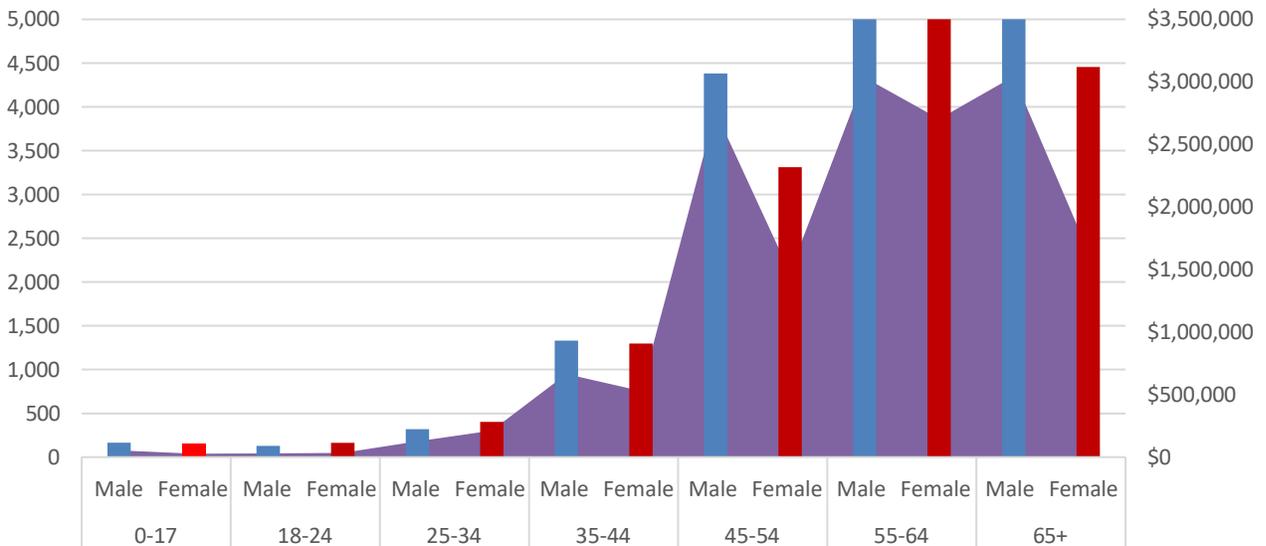


Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 thru 3; Comorbidity categories and encounters may not be mutually exclusive

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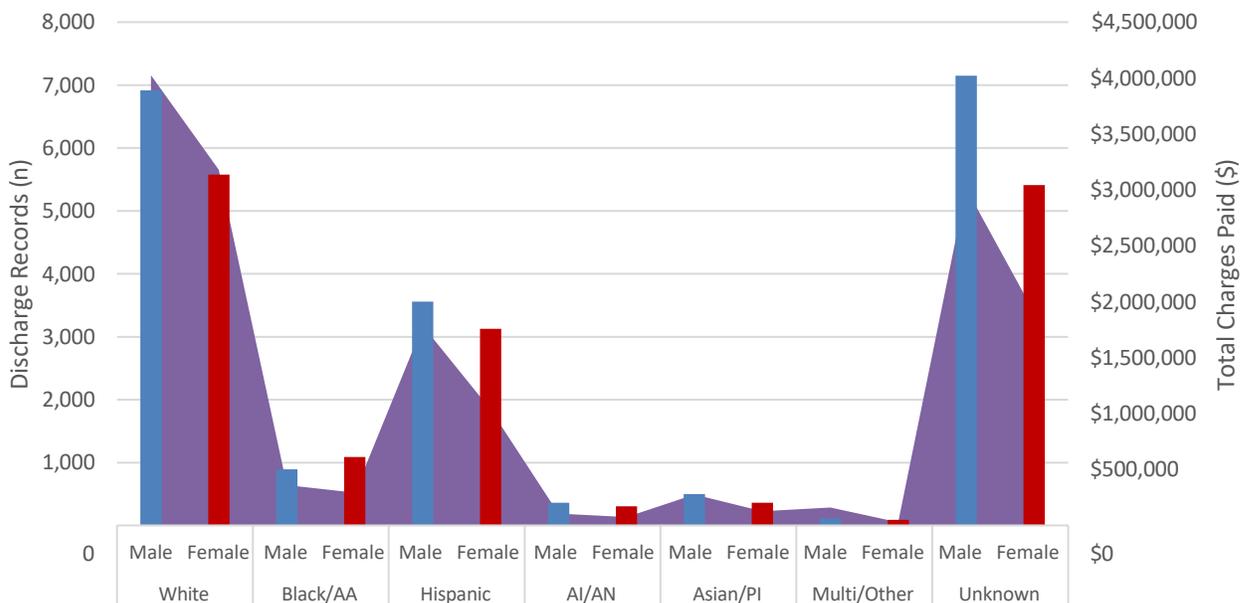
The majority of members with these conditions were between the ages 35-84 (Figure 24).

**Figure 24. Number and Cost of Comorbidity Discharge Records\* for ADOA members reported as having diabetes, by age and gender, 2020-2021**



Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1 through 3; Co-morbidity categories and encounters may not be mutually exclusive. The vertical bars (red, blue) represent the number of diabetes-related discharges by age and gender groups. The purple shading represents the corresponding dollar (\$) amount of total charges for diabetes-related discharges for each age and gender group.

**Figure 25. Number and Cost of Comorbidity Discharge Records\* for ADOA members reported as having diabetes, by ethnicity/race and gender, 2020-2021**



Data Source: ADOA, 2020-2021; Discharge records for medical encounters and antidiabetic prescription medications, ICD-10 diagnostic positions 1

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thru 3; Co-morbidity categories and encounters may not be mutually exclusive; AA-African American; AI/AN- American Indian/Alaska Native; PI-Pacific Islander. The vertical bars (red, blue) represent the number of diabetes-related discharges by age and ethnicity/race groups. The purple shading represents the corresponding dollar (\$) amount of total charges for diabetes-related discharges for each age and ethnicity/race group.

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Diabetes Related Reimbursement for AHCCCS

Table 7. Detail for AHCCCS Members with Primary Diagnosis Diabetes or Prediabetes (2020)



**Overall Report Summary for AHCCCS Members with Primary Diagnosis Diabetes or Prediabetes** <sup>[1][2][3][4]</sup>  
 Dates of Service Between 1/1/2020 and 12/31/2020  
 As of 5/12/22

**Utilization for Members with a Primary Diagnosis of Diabetes or Prediabetes** <sup>[1]</sup>

Diabetic Category	Distinct Member Count	Paid Amount
Abnormal Glucose	17,092	\$3,503,557
Diabetes Due to an Underlying Condition	720	\$843,008
Diabetes Related to Pregnancy and Childbirth	5,296	\$13,506,049
Drug or Chemical Induced Diabetes	107	\$96,472
Other Types of Diabetes	2,268	\$2,335,204
Prediabetes	14,853	\$2,365,389
Type 1 (Juvenile) Diabetes	9,326	\$28,076,659
Type 2 Diabetes	118,223	\$209,438,867
<b>Overall - Summary</b>	<b>151,241</b>	<b>\$260,165,204</b>

**Cohort Summary for Supplemental Data**

	Distinct Member Count	Paid Amount
DSME education, MNT & Eye Exams <sup>[2]</sup>	6,351	\$893,313
Diabetic Supplies and Medications <sup>[3]</sup>	82,566	\$299,933,128
Co-Occurring Conditions <sup>[4]</sup>	120,796	\$299,600,552

Notes:  
 [1] The cohort identifies members where the approved claims and encounters have a primary diagnosis in the approved diabetes diagnosis codeset.  
 [2] See Page 5 for Detail on DSME, MNT, and Eye Exam utilization.  
 [3] See Page 6 for Pharmacy Detail  
 [4] See Page 7 for Details on Co-Occurring Conditions

## House Bill 2258: Diabetes Action Plan and Report

In Calendar Year 2021, AHCCCS reimbursed approximately \$268.4 million for primary diagnosis diabetes related services for 168,505 distinct members (Table 8). In addition, AHCCCS reimbursed \$327.3 million related to co-occurring conditions, and \$302.4 million for diabetic medications and supplies.

**Table 8. Detail for AHCCCS Members with Primary Diagnosis Diabetes or Prediabetes**



**Overall Report Summary for AHCCCS Members with Primary Diagnosis Diabetes or Prediabetes** <sup>[1][2][3][4]</sup>

Dates of Service Between 1/1/2021 and 12/31/2021

As of 5/12/22

**Utilization for Members Having a Primary Diagnosis of Diabetes or Prediabetes**<sup>[1]</sup>

Diabetic Category	Distinct Member Count	Paid Amount
Abnormal Glucose	20,181	\$4,227,264
Diabetes Due to an Underlying Condition	682	\$688,322
Diabetes Related to Pregnancy and Childbirth	5,450	\$13,778,146
Drug or Chemical Induced Diabetes	83	\$139,843
Other Types of Diabetes	2,345	\$2,132,242
Prediabetes	21,282	\$3,672,836
Type 1 (Juvenile) Diabetes	9,929	\$30,361,327
Type 2 Diabetes	127,068	\$213,431,931
<b>Overall - Summary</b>	<b>168,505</b>	<b>\$268,431,911</b>

**Cohort Summary for Supplemental Data**

	Distinct Member Count	Paid Amount
DSME education, MNT & Eye Exams <sup>[2]</sup>	7,169	\$1,120,650
Diabetic Supplies and Medications <sup>[3]</sup>	90,097	\$302,397,929
Co-Occurring Conditions <sup>[4]</sup>	134,732	\$327,346,851

Notes:

[1] The cohort identifies members where the approved claims and encounters have a primary diagnosis in the approved diabetes diagnosis codeset.(ref tab)

[2] See Page 5 for Detail on DSME, MNT, and Eye Exam utilization.

[3] See Page 6 for Pharmacy Detail

[4] See Page 7 for Details on Co-Occurring Conditions. Costs where the Primary diagnosis is Diabetes were excluded.

Table 9. Reference Co-Occurring Diagnosis Cost List

## Arizona Health Care Cost Containment System

### Reference- Co-Occurring Diagnosis Code List

Diagnosis Code	Code Description
E780	PURE HYPERCHOLESTEROLEMIA
E781	PURE HYPERGLYCERIDEMIA
E782	MIXED HYPERLIPIDEMIA
E785	HYPERLIPIDEMIA, UNSPECIFIED
E8881	METABOLIC SYNDROME
I10	ESSENTIAL (PRIMARY) HYPERTENSION
I110	HYPERTENSIVE HEART DISEASE WITH HEART FAILURE
I119	HYPERTENSIVE HEART DISEASE WITHOUT HEART FAILURE
I20	ANGINA PECTORIS
I2109	STEMI INVOLVING OTH CORONARY ARTERY OF ANTERIOR WALL
I213	ST ELEVATION (STEMI) MYOCARDIAL INFARCTION OF UNSP SITE
I2510	ATHSCL HEART DISEASE OF NATIVE CORONARY ARTERY W/O ANG PCTRS
I252	OLD MYOCARDIAL INFARCTION
I2584	CORONARY ATHEROSCLEROSIS DUE TO CALCIFIED CORONARY LESION
I4891	UNSPECIFIED ATRIAL FIBRILLATION
I509	HEART FAILURE, UNSPECIFIED
I639	CEREBRAL INFARCTION, UNSPECIFIED
I6523	OCCLUSION AND STENOSIS OF BILATERAL CAROTID ARTERIES
I6529	OCCLUSION AND STENOSIS OF UNSPECIFIED CAROTID ARTERY
I672	CEREBRAL ATHEROSCLEROSIS
I679	CEREBROVASCULAR DISEASE, UNSPECIFIED
I739	PERIPHERAL VASCULAR DISEASE, UNSPECIFIED
Z13220	ENCOUNTER FOR SCREENING FOR LIPOID DISORDERS
Z79899	OTHER LONG TERM (CURRENT) DRUG THERAPY
Z8249	FAMILY HX OF ISCHEM HEART DIS AND OTH DIS OF THE CIRC SYS

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### ***CDC/Arizona Behavioral Risk Factor Surveillance System (BRFSS)***

The BRFSS is the nation's premier system of health-related telephone surveys that collects state data about residents regarding their behaviors that influence individual health, chronic conditions and their use of preventive services. The BRFSS is an ongoing data collection system gathering information on adult health-related behaviors of non-institutionalized residents 18 years of age and older. Only one adult per household is interviewed and the participants are not compensated for their time.

A standardized questionnaire (~75 questions) is used with questions determined by the state BRFSS coordinator and the CDC. Participants of the survey are determined by random sampling telephone survey, using disproportionate stratified sampling, random digit dialing, and a Computer Assisted Telephone Interviewing (CATI) system using a sample size of 4,700 over a 12-month survey period (sample size 95% confidence interval of  $\pm 3\%$ ). Each survey has the potential to represent 96.3% of all households that have landline telephones and cell phones. Monthly data files are sent to the Arizona BRFSS program and reports are prepared. Data is weighted based on Arizona population demographics and takes into account number of adults and telephone lines in the household, cluster size, stratum size and age/race/sex distribution of the general population.

#### **CORE QUESTION: DIABETES (ASKED EVERY YEAR)**

Q. Has a doctor, nurse, or other health professional EVER told you that you have diabetes?

- A.
- 1 Yes
  - 2 Yes, but female told only during pregnancy
  - 3 No
  - 4 No, prediabetes or borderline diabetes
  - 7 Don't know / Not sure
  - 9 Refused Diabetes in Arizona:

#### **MODULE 1: PREDIABETES (LAST TIME ASKED IN 2020)**

Q. Have you had a test for high blood sugar or diabetes within the past three years?

- A.
- 1 Yes
  - 2 No
  - 7 Don't know / Not sure
  - 9 Refused

### ***ICD-10 Codes: International Classification of Diseases Codes:***

The International Classification of Diseases (ICD) codes are used to classify diseases and other health problems recorded on many types of health and vital records, including death certificates and health records. In this report, the ICD-10-CM International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) were used. Additional information on these codes from the National Center for Health Statistics can be found here: [CDC - National Center for Health Statistics](https://www.cdc.gov/nchs)

Mortality: ICD-10 Diagnosis Codes

Diabetes: E10-E14

A full description of the ICD-10 codes can be found here: [ICD-10-CM Browser Tool](https://www.cdc.gov/nchs/icd/icd10cmbrowsertool/)

### ICD-10 Codes for Diabetes Due to an Underlying Condition

- Diabetes mellitus due to underlying condition: E08
  - Diabetes mellitus due to underlying condition with hyperosmolarity: E08.0
    - ..... without nonketotic hyperglycemic-hyperosmolar coma (NKHHC): E08.00
    - ..... with coma: E08.01
  - Diabetes mellitus due to underlying condition with ketoacidosis: E08.1
    - ..... without coma: E08.10
    - ..... with coma: E08.11
  - Diabetes mellitus due to underlying condition with kidney complications: E08.2
    - Diabetes mellitus due to underlying condition with diabetic nephropathy: E08.21
    - Diabetes mellitus due to underlying condition with diabetic chronic kidney disease: E08.22
    - Diabetes mellitus due to underlying condition with other diabetic kidney complication: E08.29
  - Diabetes mellitus due to underlying condition with ophthalmic complications: E08.3
    - Diabetes mellitus due to underlying condition with unspecified diabetic retinopathy: E08.31
      - ..... with macular edema: E08.311
      - ..... without macular edema: E08.319
    - Diabetes mellitus due to underlying condition with mild nonproliferative diabetic retinopathy: E08.32
      - ..... with macular edema: E08.321
      - ..... without macular edema: E08.329
    - Diabetes mellitus due to underlying condition with moderate nonproliferative diabetic retinopathy: E08.33
      - ..... with macular edema: E08.331
      - ..... without macular edema: E08.339
    - Diabetes mellitus due to underlying condition with severe nonproliferative diabetic retinopathy: E08.34
      - ..... with macular edema: E08.341
      - ..... without macular edema: E08.349
    - Diabetes mellitus due to underlying condition with proliferative diabetic retinopathy: E08.35
      - ..... with macular edema: E08.351
      - ..... without macular edema: E08.359

## House Bill 2258: Diabetes Action Plan and Report

- Diabetes mellitus due to underlying condition with diabetic cataract: E08.36
- Diabetes mellitus due to underlying condition with other diabetic ophthalmic complication: E08.39
- Diabetes mellitus due to underlying condition with neurological complications: E08.4
  - Diabetes mellitus due to underlying condition with diabetic neuropathy, unspecified: E08.40
  - Diabetes mellitus due to underlying condition with diabetic mononeuropathy: E08.41
  - Diabetes mellitus due to underlying condition with diabetic polyneuropathy: E08.42
  - Diabetes mellitus due to underlying condition with diabetic autonomic (poly)neuropathy: E08.43
  - Diabetes mellitus due to underlying condition with diabetic amyotrophy: E08.44
  - Diabetes mellitus due to underlying condition with other diabetic neurological complication: E08.49
- Diabetes mellitus due to underlying condition with circulatory complications: E08.5
  - Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene: E08.51
  - Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene: E08.52
  - Diabetes mellitus due to underlying condition with other circulatory complications: E08.59
- Diabetes mellitus due to underlying condition with other specified complications: E08.6
  - Diabetes mellitus due to underlying condition with diabetic arthropathy: E08.61
    - Diabetes mellitus due to underlying condition with diabetic neuropathic arthropathy: E08.610
    - Diabetes mellitus due to underlying condition with other diabetic arthropathy: E08.618
  - Diabetes mellitus due to underlying condition with skin complications: E08.62
    - Diabetes mellitus due to underlying condition with diabetic dermatitis: E08.620
    - Diabetes mellitus due to underlying condition with foot ulcer: E08.621
    - Diabetes mellitus due to underlying condition with other skin ulcer: E08.622
    - Diabetes mellitus due to underlying condition with other skin complications: E08.628
  - Diabetes mellitus due to underlying condition with oral complications: E08.63
    - Diabetes mellitus due to underlying condition with periodontal disease: E08.630
    - Diabetes mellitus due to underlying condition with other oral complications: E08.638
  - Diabetes mellitus due to underlying condition with hypoglycemia: E08.64
    - ..... with coma: E08.641
    - ..... without coma: E08.649
  - Diabetes mellitus due to underlying condition with hyperglycemia: E08.65
  - Diabetes mellitus due to underlying condition with other specified complication: E08.69
- Diabetes mellitus due to underlying condition with unspecified complications: E08.8
- Diabetes mellitus due to underlying condition without complications: E08.9

### ICD-10 Codes for Drug or Chemical Induced Diabetes

- Drug or chemical induced diabetes mellitus: E09
  - Drug or chemical induced diabetes mellitus with hyperosmolarity: E09.0
    - ..... without nonketotic hyperglycemic-hyperosmolar coma (NKHHC): E09.00
    - ..... with coma: E09.01

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- Drug or chemical induced diabetes mellitus with ketoacidosis: E09.1
  - ..... without coma: E09.10
  - ..... with coma: E09.11
- Drug or chemical induced diabetes mellitus with kidney complications: E09.2
  - Drug or chemical induced diabetes mellitus with diabetic nephropathy: E09.21
  - Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease: E09.22
  - Drug or chemical induced diabetes mellitus with other diabetic kidney complication: E09.29
- Drug or chemical induced diabetes mellitus with ophthalmic complications: E09.3
  - Drug or chemical induced diabetes mellitus with unspecified diabetic retinopathy: E09.31
    - ..... with macular edema: E09.311
    - ..... without macular edema: E09.319
  - Drug or chemical induced diabetes mellitus with mild nonproliferative diabetic retinopathy: E09.32
    - ..... with macular edema: E09.321
    - ..... without macular edema: E09.329
  - Drug or chemical induced diabetes mellitus with moderate nonproliferative diabetic retinopathy: E09.33
    - ..... with macular edema: E09.331
    - ..... without macular edema: E09.339
  - Drug or chemical induced diabetes mellitus with severe nonproliferative diabetic retinopathy: E09.34
    - ..... with macular edema: E09.341
    - ..... without macular edema: E09.349
  - Drug or chemical induced diabetes mellitus with proliferative diabetic retinopathy: E09.35
    - ..... with macular edema: E09.351
    - ..... without macular edema: E09.359
  - Drug or chemical induced diabetes mellitus with diabetic cataract: E09.36
  - Drug or chemical induced diabetes mellitus with other diabetic ophthalmic complication: E09.39
- Drug or chemical induced diabetes mellitus with neurological complications: E09.4
  - ..... with diabetic neuropathy, unspecified: E09.40
  - ..... with diabetic mononeuropathy: E09.41
  - ..... with diabetic polyneuropathy: E09.42
  - ..... with diabetic autonomic (poly)neuropathy: E09.43
  - ..... with diabetic amyotrophy: E09.44
  - ..... with other diabetic neurological complication: E09.49
- Drug or chemical induced diabetes mellitus with circulatory complications: E09.5
  - Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene: E09.51
  - Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene: E09.52
  - Drug or chemical induced diabetes mellitus with other circulatory complications: E09.59
- Drug or chemical induced diabetes mellitus with other specified complications: E09.6
  - Drug or chemical induced diabetes mellitus with diabetic arthropathy: E09.61
    - Drug or chemical induced diabetes mellitus with diabetic neuropathic arthropathy: E09.610
    - Drug or chemical induced diabetes mellitus with other diabetic arthropathy: E09.618

- Drug or chemical induced diabetes mellitus with skin complications: E09.62
  - Drug or chemical induced diabetes mellitus with diabetic dermatitis: E09.620
  - Drug or chemical induced diabetes mellitus with foot ulcer: E09.621
  - Drug or chemical induced diabetes mellitus with other skin ulcer: E09.622
  - Drug or chemical induced diabetes mellitus with other skin complications: E09.628
- Drug or chemical induced diabetes mellitus with oral complications: E09.63
  - Drug or chemical induced diabetes mellitus with periodontal disease: E09.630
  - Drug or chemical induced diabetes mellitus with other oral complications: E09.638
- Drug or chemical induced diabetes mellitus with hypoglycemia: E09.64
  - ..... with coma: E09.641
  - ..... without coma: E09.649
- Drug or chemical induced diabetes mellitus with hyperglycemia: E09.65
- Drug or chemical induced diabetes mellitus with other specified complication: E09.69
- Drug or chemical induced diabetes mellitus with unspecified complications: E09.8
- Drug or chemical induced diabetes mellitus without complications: E09.9

### ICD-10 Codes for Type 1 (Juvenile) Diabetes

- Type 1 diabetes mellitus: E10
  - Type 1 diabetes mellitus with ketoacidosis: E10.1
    - ..... without coma: E10.10
    - ..... with coma: E10.11
  - Type 1 diabetes mellitus with kidney complications: E10.2
    - Type 1 diabetes mellitus with diabetic nephropathy: E10.21
    - Type 1 diabetes mellitus with diabetic chronic kidney disease: E10.22
    - Type 1 diabetes mellitus with other diabetic kidney complication: E10.29
  - Type 1 diabetes mellitus with ophthalmic complications: E10.3
    - Type 1 diabetes mellitus with unspecified diabetic retinopathy: E10.31
      - ..... with macular edema: E10.311
      - ..... without macular edema: E10.319
    - Type 1 diabetes mellitus with mild nonproliferative diabetic retinopathy: E10.32
      - ..... with macular edema: E10.321
      - ..... without macular edema: E10.329
    - Type 1 diabetes mellitus with moderate nonproliferative diabetic retinopathy: E10.33
      - ..... with macular edema: E10.331
      - ..... without macular edema: E10.339
    - Type 1 diabetes mellitus with severe nonproliferative diabetic retinopathy: E10.34
      - ..... with macular edema: E10.341
      - ..... without macular edema: E10.349
    - Type 1 diabetes mellitus with proliferative diabetic retinopathy: E10.35
      - ..... with macular edema: E10.351
      - ..... without macular edema: E10.359
    - Type 1 diabetes mellitus with diabetic cataract: E10.36
    - Type 1 diabetes mellitus with other diabetic ophthalmic complication: E10.39
  - Type 1 diabetes mellitus with neurological complications: E10.4
    - Type 1 diabetes mellitus with diabetic neuropathy, unspecified: E10.40

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- Type 1 diabetes mellitus with diabetic mononeuropathy: E10.41
- Type 1 diabetes mellitus with diabetic polyneuropathy: E10.42
- Type 1 diabetes mellitus with diabetic autonomic (poly)neuropathy: E10.43
- Type 1 diabetes mellitus with diabetic amyotrophy: E10.44
- Type 1 diabetes mellitus with other diabetic neurological complication: E10.49
- Type 1 diabetes mellitus with circulatory complications: E10.5
  - Type 1 diabetes mellitus with diabetic peripheral angiopathy without gangrene: E10.51
  - Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene: E10.52
  - Type 1 diabetes mellitus with other circulatory complications: E10.59
- Type 1 diabetes mellitus with other specified complications: E10.6
  - Type 1 diabetes mellitus with diabetic arthropathy: E10.61
    - Type 1 diabetes mellitus with diabetic neuropathic arthropathy: E10.610
    - Type 1 diabetes mellitus with other diabetic arthropathy: E10.618
  - Type 1 diabetes mellitus with skin complications: E10.62
    - Type 1 diabetes mellitus with diabetic dermatitis: E10.620
    - Type 1 diabetes mellitus with foot ulcer: E10.621
    - Type 1 diabetes mellitus with other skin ulcer: E10.622
    - Type 1 diabetes mellitus with other skin complications: E10.628
  - Type 1 diabetes mellitus with oral complications: E10.63
    - Type 1 diabetes mellitus with periodontal disease: E10.630
    - Type 1 diabetes mellitus with other oral complications: E10.638
  - Type 1 diabetes mellitus with hypoglycemia: E10.64
    - ..... with coma: E10.641
    - ..... without coma: E10.649
  - Type 1 diabetes mellitus with hyperglycemia: E10.65
  - Type 1 diabetes mellitus with other specified complication: E10.69
- Type 1 diabetes mellitus with unspecified complications: E10.8
- Type 1 diabetes mellitus without complications: E10.9

### ICD-10 Codes for Type 2 Diabetes

- Type 2 diabetes mellitus: E11
  - Type 2 diabetes mellitus with hyperosmolarity: E11.0
    - ..... without non-ketotic hyperglycemic-hyperosmolar coma (NKHHC): E11.00
    - ..... with coma: E11.01
  - Type 2 diabetes mellitus with kidney complications: E11.2
    - Type 2 diabetes mellitus with diabetic nephropathy: E11.21
    - Type 2 diabetes mellitus with diabetic chronic kidney disease: E11.22
    - Type 2 diabetes mellitus with other diabetic kidney complication: E11.29
  - Type 2 diabetes mellitus with ophthalmic complications: E11.3
    - Type 2 diabetes mellitus with unspecified diabetic retinopathy: E11.31
      - ..... with macular edema: E11.311
      - ..... without macular edema: E11.319
    - Type 2 diabetes mellitus with mild nonproliferative diabetic retinopathy: E11.32
      - ..... with macular edema: E11.321
      - ..... without macular edema: E11.329

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- Type 2 diabetes mellitus with moderate nonproliferative diabetic retinopathy: E11.33
  - ..... with macular edema: E11.331
  - ..... without macular edema: E11.339
- Type 2 diabetes mellitus with severe nonproliferative diabetic retinopathy: E11.34
  - ..... with macular edema: E11.341
  - ..... without macular edema: E11.349
- Type 2 diabetes mellitus with proliferative diabetic retinopathy: E11.35
  - ..... with macular edema: E11.351
  - ..... without macular edema: E11.359
- Type 2 diabetes mellitus with diabetic cataract: E11.36
- Type 2 diabetes mellitus with other diabetic ophthalmic complication: E11.39
- Type 2 diabetes mellitus with neurological complications: E11.4
  - Type 2 diabetes mellitus with diabetic neuropathy, unspecified: E11.40
  - Type 2 diabetes mellitus with diabetic mononeuropathy: E11.41
  - Type 2 diabetes mellitus with diabetic polyneuropathy: E11.42
  - Type 2 diabetes mellitus with diabetic autonomic (poly)neuropathy: E11.43
  - Type 2 diabetes mellitus with diabetic amyotrophy: E11.44
  - Type 2 diabetes mellitus with other diabetic neurological complication: E11.49
- Type 2 diabetes mellitus with circulatory complications: E11.5
  - Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene: E11.51
  - Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene: E11.52
  - Type 2 diabetes mellitus with other circulatory complications: E11.59
- Type 2 diabetes mellitus with other specified complications: E11.6
  - Type 2 diabetes mellitus with diabetic arthropathy: E11.61
    - Type 2 diabetes mellitus with diabetic neuropathic arthropathy: E11.610
    - Type 2 diabetes mellitus with other diabetic arthropathy: E11.618
  - Type 2 diabetes mellitus with skin complications: E11.62
    - Type 2 diabetes mellitus with diabetic dermatitis: E11.620
    - Type 2 diabetes mellitus with foot ulcer: E11.621
    - Type 2 diabetes mellitus with other skin ulcer: E11.622
    - Type 2 diabetes mellitus with other skin complications: E11.628
  - Type 2 diabetes mellitus with oral complications: E11.63
    - Type 2 diabetes mellitus with periodontal disease: E11.630
    - Type 2 diabetes mellitus with other oral complications: E11.638
  - Type 2 diabetes mellitus with hypoglycemia: E11.64
    - ..... with coma: E11.641
    - ..... without coma: E11.649
  - Type 2 diabetes mellitus with hyperglycemia: E11.65
  - Type 2 diabetes mellitus with other specified complication: E11.69
- Type 2 diabetes mellitus with unspecified complications: E11.8
- Type 2 diabetes mellitus without complications: E11.9

### ICD-10 Codes for Diabetes Related to Pregnancy and Childbirth

- Diabetes mellitus in pregnancy, childbirth, and the puerperium: 024
  - Pre-existing diabetes mellitus, type 1, in pregnancy, childbirth and the puerperium: 024.0

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- Pre-existing diabetes mellitus, type 1, in pregnancy: 024.01
  - ..... first trimester: 024.011
  - ..... second trimester: 024.012
  - ..... third trimester: 024.013
  - ..... unspecified trimester: 024.019
- Pre-existing diabetes mellitus, type 1, in childbirth: 024.02
- Pre-existing diabetes mellitus, type 1, in the puerperium: 024.03
- Pre-existing diabetes mellitus, type 2, in pregnancy, childbirth and the puerperium: 024.1
  - Pre-existing diabetes mellitus, type 2, in pregnancy: 024.11
    - ..... first trimester: 024.111
    - ..... second trimester: 024.112
    - ..... third trimester: 024.113
    - ..... unspecified trimester: 024.119
  - Pre-existing diabetes mellitus, type 2, in childbirth: 024.12
  - Pre-existing diabetes mellitus, type 2, in the puerperium: 024.13
- Unspecified pre-existing diabetes mellitus in pregnancy, childbirth and the puerperium: 024.3
  - Unspecified pre-existing diabetes mellitus in pregnancy: 024.31
    - ..... first trimester: 024.311
    - ..... second trimester: 024.312
    - ..... third trimester: 024.313
    - ..... unspecified trimester: 024.319
  - Unspecified pre-existing diabetes mellitus in childbirth: 024.32
  - Unspecified pre-existing diabetes mellitus in the puerperium: 024.33
- Gestational diabetes mellitus: 024.4
  - Gestational diabetes mellitus in pregnancy: 024.41
    - ..... diet controlled: 024.410
    - ..... insulin controlled: 024.414
    - ..... unspecified control: 024.419
  - Gestational diabetes mellitus in childbirth: 024.42
    - ..... diet controlled: 024.420
    - ..... insulin controlled: 024.424
    - ..... unspecified control: 024.429
  - Gestational diabetes mellitus in the puerperium: 024.43
    - ..... diet controlled: 024.430
    - ..... insulin controlled: 024.434
    - ..... unspecified control: 024.439
- Other pre-existing diabetes mellitus in pregnancy, childbirth, and the puerperium: 024.8
  - Other pre-existing diabetes mellitus in pregnancy: 024.81
    - ..... first trimester: 024.811
    - ..... second trimester: 024.812
    - ..... third trimester: 024.813
    - ..... unspecified trimester: 024.819
  - Other pre-existing diabetes mellitus in childbirth: 024.82
  - Other pre-existing diabetes mellitus in the puerperium: 024.83
- Unspecified diabetes mellitus in pregnancy, childbirth and the puerperium: 024.9
  - Unspecified diabetes mellitus in pregnancy: 024.91
    - ..... first trimester: 024.911

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- ..... second trimester: 024.912
- ..... third trimester: 024.913
- ..... unspecified trimester: 024.919
- Unspecified diabetes mellitus in childbirth: 024.92
- Unspecified diabetes mellitus in the puerperium: 024.93

### ICD-10 Codes for Other Types of Diabetes

- Other specified diabetes mellitus: E13
  - Other specified diabetes mellitus with hyperosmolarity: E13.0
    - ..... without nonketotic hyperglycemic-hyperosmolar coma (NKHHC): E13.00
    - ..... with coma: E13.01
  - Other specified diabetes mellitus with ketoacidosis: E13.1
    - ..... without coma: E13.10
    - ..... with coma: E13.11
  - Other specified diabetes mellitus with kidney complications: E13.2
    - Other specified diabetes mellitus with diabetic nephropathy: E13.21
    - Other specified diabetes mellitus with diabetic chronic kidney disease: E13.22
    - Other specified diabetes mellitus with other diabetic kidney complication: E13.29
  - Other specified diabetes mellitus with ophthalmic complications: E13.3
    - Other specified diabetes mellitus with unspecified diabetic retinopathy: E13.31
      - ..... with macular edema: E13.311
      - ..... without macular edema: E13.319
    - Other specified diabetes mellitus with mild nonproliferative diabetic retinopathy: E13.32
      - ..... with macular edema: E13.321
      - ..... without macular edema: E13.329
    - Other specified diabetes mellitus with moderate nonproliferative diabetic retinopathy: E13.33
      - ..... with macular edema: E13.331
      - ..... without macular edema: E13.339
    - Other specified diabetes mellitus with severe nonproliferative diabetic retinopathy: E13.34
      - ..... with macular edema: E13.341
      - ..... without macular edema: E13.349
    - Other specified diabetes mellitus with proliferative diabetic retinopathy: E13.35
      - ..... with macular edema: E13.351
      - ..... without macular edema: E13.359
    - Other specified diabetes mellitus with diabetic cataract: E13.36
    - Other specified diabetes mellitus with other diabetic ophthalmic complication: E13.39
  - Other specified diabetes mellitus with neurological complications: E13.4
    - Other specified diabetes mellitus with diabetic neuropathy, unspecified: E13.40
    - Other specified diabetes mellitus with diabetic mononeuropathy: E13.41
    - Other specified diabetes mellitus with diabetic polyneuropathy: E13.42
    - Other specified diabetes mellitus with diabetic autonomic (poly)neuropathy: E13.43
    - Other specified diabetes mellitus with diabetic amyotrophy: E13.44
    - Other specified diabetes mellitus with other diabetic neurological complication: E13.49
  - Other specified diabetes mellitus with circulatory complications: E13.5

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- Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene: E13.51
- Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene: E13.52
- Other specified diabetes mellitus with other circulatory complications: E13.59
- Other specified diabetes mellitus with other specified complications: E13.6
  - Other specified diabetes mellitus with diabetic arthropathy: E13.61
    - Other specified diabetes mellitus with diabetic neuropathic arthropathy: E13.610
    - Other specified diabetes mellitus with other diabetic arthropathy: E13.618
  - Other specified diabetes mellitus with skin complications: E13.62
    - Other specified diabetes mellitus with diabetic dermatitis: E13.620
    - Other specified diabetes mellitus with foot ulcer: E13.621
    - Other specified diabetes mellitus with other skin ulcer: E13.622
    - Other specified diabetes mellitus with other skin complications: E13.628
  - Other specified diabetes mellitus with oral complications: E13.63
    - Other specified diabetes mellitus with periodontal disease: E13.630
    - Other specified diabetes mellitus with other oral complications: E13.638
  - Other specified diabetes mellitus with hypoglycemia: E13.64
    - ..... with coma: E13.641
    - ..... without coma: E13.649
  - Other specified diabetes mellitus with hyperglycemia: E13.65
  - Other specified diabetes mellitus with other specified complication: E13.69
- Other specified diabetes mellitus with unspecified complications: E13.8
- Other specified diabetes mellitus without complications: E13.9
- Diabetes mellitus due to underlying condition with hypoglycemia without coma: E08.649
- Use Additional code to identify site of ulcer (L97.1-L97.9, L98.41-L98.49)

## Appendix 6: Glossary of Terms and Abbreviations

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### *Glossary of Terms:*

Behavioral Risk Factor Surveillance Survey (BRFSS) – a telephone survey that is administered nationally on an annual basis, and asks standardized questions aimed at assessing the prevalence of risk factors for a variety of diseases and threats to health and quality of life and to measure changes in the population’s risk.

Blood Pressure – the pressure, measured in millimeters of mercury (mmHg), exerted against the artery walls. Also considered to be the force required by the heart to move blood through the vascular system.

- Diastolic blood pressure – the measurement of pressure in the arterial system during the resting phase of the cardiac cycle when the coronary arteries fill and perfusion of the myocardium takes place. Diastole refers to the resting of the heart.
- Systolic blood pressure – the measurement of pressure in the arterial system during the contraction of the heart when blood is forced out of the left ventricle into the arterial system.

Body Mass Index – a height to weight ratio field measurement which is correlated to an increased risk of Cardiovascular Diseases. BMI is in units of kg/m<sup>2</sup> and is derived by taking the bodyweight of an individual in kilograms and dividing it by the height of that individual in meters squared. Absolute values are used to interpret BMI in adults and CDC’s published growth charts for age and gender are used to interpret BMI in children.

Cardiovascular Disease – refers to a broad spectrum of heart and blood vessel diseases, including heart disease, stroke, and peripheral vascular disease. Atherosclerosis is the underlying disease process of all major forms of cardiovascular disease.

Confidence Interval – A confidence interval is a range of values that a person can be 95% certain contain the true average of a population.

Diagnosed Diabetes – participant were classified as having diagnosed diabetes if they answered “yes” to the question: “Other than during pregnancy, have you ever been told by a doctor or health professional that you have diabetes or sugar diabetes?”

Direct Costs – costs that are clearly and directly associated with the production of goods or services.

Disparities – refers to the gaps in the quality of health and health care across racial, ethnic, and socioeconomic groups.

Healthy People 2030 – a document created by the US Department of Health and Human Services, with targets to move the US population towards greater health.

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Hemoglobin A1c – a component of hemoglobin that binds with glucose. Abbreviated, HbA1c or A1c. A1c levels depend on glucose concentration in the blood, the higher the concentration, the higher the A1c levels. A1c levels are not influenced by daily nutritional intake or daily blood sugar fluctuations, but reflective of 6-8 weeks prior to measurement. A1c levels are reliable indicators of insulin efficiency and is used to measure the effectiveness of diet, exercise and medication in the glucose control in those with diabetes. A1c is also monitored for those at an elevated risk of developing diabetes. A1c levels between 5.7- 6.4 are considered to be prediabetic and above 6.5 to be diabetic.

Hospital Discharges – the number of inpatients discharged from short-stay hospitals where some type of disease was the first listed diagnosis. Discharges include people both living and dead.

Indirect Costs – costs or expenses that are not directly accountable to a cost object.

Medicare – the health insurance program administered by the U.S. government, covering people who are either 65 or older, or who meet other special criteria.

Medicaid – the health insurance program to millions of Americans, including eligible low-income adults, children, pregnant women, elderly adults and people with disabilities. Medicaid is administered by states, according to federal requirements.

Mortality – rate of death expressed as the number of deaths occurring in a population of a given size within a specified time interval.

Prevalence – the frequency of a particular condition within a defined population at a designated time.

Risk Factors – attributes or characteristics of a person’s lifestyle that increases the likelihood of developing a disease or condition.

Socio-economic status – a measure of an individual’s place within a social group based on various factors, including income and education.

Total Diabetes – combined overall prevalence of diagnosed and undiagnosed diabetes.

Undiagnosed Diabetes – participants were classified as having undiagnosed diabetes if they did not report a diagnosis of diabetes by a health care provider and their fasting (8-12 hours) plasma glucose was greater than or equal to 126 mg/dL or their hemoglobin A1c was greater than or equal to 6.5%.

Weight Status – body mass index (BMI) was calculated as measured weight in kilograms divided by measured height in meters squared and rounded to one decimal place. Overweight was defined as a BMI greater than or equal to 25 or less than 30. Obesity was defined as a BMI greater than or equal to 30. Normal or underweight was defined as a BMI less than 25.

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### **Abbreviations:**

A1c – Hemoglobin A1c  
ADA – American Diabetes Association  
ADCES – Association of Diabetes Care and Education Specialists  
ADHS – Arizona Department of Health Services  
AHCCCS – Arizona Health Care Cost Containment System (Arizona’s Medicaid Program)  
BMI – Body Mass Index  
BRFSS – Behavioral Risk Factor Surveillance System  
CDC – Centers for Disease Control and Prevention  
CDCES – Certified Diabetes Care and Education Specialist, formally CDE – Certified Diabetes Educator  
CVD – Cardiovascular Disease  
DM – Diabetes Mellitus  
DPRP – CDC's Diabetes Prevention Recognition Program  
EHR – Electronic health records  
ESRD – End-stage Renal Disease  
eGFR – Estimated Glomerular Filtration Rate  
FPG – Fasting Plasma Glucose  
GDM – Gestational Diabetes Mellitus  
HDD – Hospital Discharge Data  
HIE – Health Information Exchange  
IFG – Impaired Fasting Glucose  
IGT – Impaired Glucose Tolerance  
LEAs – Lower Extremity Amputations  
MCO – Managed Care Organization  
MDPP – Medicare Diabetes Prevention Program  
NDPP – National Diabetes Prevention Program  
NHANES – National Health and Nutrition Examination Survey  
NHIS – National Health Interview Survey  
NIH – National Institutes of Health  
UHA – Umbrella Hub Arrangement  
USDA – United States Department of Agriculture  
uACR – Urine Albumin Creatinine Ratio  
VS – Vital Statistics

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