

ARIZONA DIABETES INDICATORS ANNUAL REPORT

Surveillance Committee
Arizona Diabetes Control Council

May 2002

December 25, 2000

Dear Readers,

This is our first attempt to produce this type of independent report on selected diabetes indicators that are valid and easily obtainable. The comparability of some of the data is complex. The purpose is to measure the annual progress of diabetes control efforts by various agencies and health care systems in Arizona. The major contributors of this report are: Arizona Department of Health Services, Inter Tribal Council of Arizona, Carl T. Hayden Veterans' Affairs Medical Center, Health Services Advisory Group, Indian Health Service, the Rural Health Office at the University of Arizona and Arizona Association of Community Health Centers.

This report presents the methodology of collection, objectives, definitions, rationale and statistics on 21 selected diabetes indicators that are currently being recorded and reported. The indicators are organized under primary, secondary and tertiary prevention categories. We did not collect some other potential indicators this time because of lack of availability of standardized measuring protocols and reporting criteria. The Committee is concerned especially about the developing information on use of ACE inhibitors and HbA1c. There was considerable difficulty in the process of considering the data of those indicators. It will be necessary to determine the best way to identify and collect the data needed to support each measure. However, we are determined to include these in the future if possible.

Collecting data from different sources is definitely a tedious process and complex process. It requires much commitment and patience to jump through different hoops of the systems to be successful. The majorities of the committee members are volunteers, and have their own job responsibilities in each of their organizations. As a Chairperson of the Diabetes Surveillance Committee of the Arizona Diabetes Control Council, I would like to acknowledge all of our partners for their time, expertise and input in order to accomplish our goals. I also offer my deepest gratitude and thanks to the agencies that contributed a great deal of commitment in terms of analyzing the requested data and sharing the results with the State.

Please let the Committee hear your voice to refine our future work. Your comments and inputs about the report will be highly appreciated. Thanks.

Sincerely,

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Arizona Diabetes Indicators May 2002

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Special Acknowledgement:

The Surveillance Committee gives special acknowledgement to Beverly Judie, the Director of the Arizona Diabetes Control Program for her active support and on-going assistance to the committee's accomplishments. In addition, the Committee also gives special thanks to Helen Chacon, Diabetes Control Program Assistant, for providing consistent programmatic assistance and help to our members.

TABLE OF CONTENTS

GLOSSARY	Page 5
SELECTED DIABETES INDICATORS IN ARIZONA	Page 6
Introduction	Page 6
Methodology	Page 7
A. PRECURSOR CONDITIONS AND PRIMARY PREVENTION	Page 8
1. Proportion of Mothers with Diabetes During Pregnancy	Page 8
2. Proportion of Babies with Macrosomia	Page 9
3. Pre-School Children who are Overweight	Page 9
4. Proportion of Adults who are Considered Physically Inactive	Page 10
5. Proportion of Children who are Considered Physically Active	Page 11
6. Proportion of Adults who are Overweight	Page 12
7. Proportion of Adults who are Obese	Page 13
8. Proportion of Arizonans Consuming Inadequate Servings of Fruits and Vegetables Daily	Page 14
B. SECONDARY PREVENTION	Page 15
9. Percentage of Diabetic Patients Receiving One or More Glycohemoglobin (HbA1C) Tests During the Last 12 Months	Page 15
10. Percentage of Diabetic Patients Receiving At Least One microalbuminuria test during the last 12 months	Page 16
11. Eye Examination	Page 17
12. Foot Examination	Page 18
C. TERTIARY PREVENTION	Page 19
13. Hypertension	Page 19
14. Lipid Profile	Page 20
15. Hospitalizations	Page 21
16. New Cases of End Stage Renal Disease (ESRD) in Persons >= Age 65..	Page 22
17. Lower Extremity Amputation	Page 22
D. MORTALITY	Page 23
E. RESOURCES	Page 24
19. Certified Diabetes Educators	Page 24
20. Registries	Page 25
21. Patient Self-Management Education Including Nutrition Education	Page 26
F. IMPORTANT ISSUES NOT ADDRESSED	Page 27
G. STANDARDS OF CARE RECOMMENDATION	Page 27
REFERENCES	Page 28

GLOSSARY

ACE Inhibitors	Acetylcholine Enzyme Inhibitors (Blood Pressure Medicines).
CDE	Certified Diabetes Educator (“Gold Standard”).
CHS	Contact Health Services.
Denominator	Number of total diabetic population who were served through the agency.
FACCT	Foundation for Accountability - a consortium of healthcare organizations, professional groups and governmental agencies.
FFS	Fee for Service.
HEDIS®	Healthplan Employer Data Information Set - a product of the National Committee on Quality Assurance.
HSAG	Health Services Advisory Group (Arizona Medicare Program).
IHS	Indian Health Service, U.S. Department of Health and Human Services. There are 12 IHS Areas nationwide serving American Indian and Alaska Native population.
IHS Phoenix Area	Provides services to all tribes in Arizona (EXCEPT Pascua Yaqui, Tohono O’odham Nation and Navajo Nation), Nevada and Utah (Approx. 46 tribes).
IHS Tucson Area	Provides services to Tohono O’odham Nation and Pascua Yaqui Tribe of Arizona.
ITCA, Inc.	Consists of 19 member Tribes of Arizona, and serves and collaborates with all tribes in Arizona, Nevada and Utah.
ITCA, Inc.	Consists of 19 member Tribes of Arizona, and serves and collaborates with all tribes in Arizona, Nevada and Utah.
ITCA Epidemiology Center	The Epi center was established by the Department of Health and Human Services through the Indian Health Service in 1996.
Navajo Nation Area IHS	Provides services to entire Navajo Nation (portions in Arizona, New Mexico, Colorado and Utah).
Numerator	Number of diabetic patients who experienced a specific objective.
SDPS	Standard Data Processing System.
VAMC	Veterans’ Affairs Medical Center.

SELECTED DIABETES INDICATORS IN ARIZONA

Introduction:

It was estimated that about 210,000 Arizonans to have diabetes in 1999.¹ Diabetes continues to be a serious health problem in Arizona and the United States. At the national level, the Healthy People 2010 diabetes goal states, "Through prevention programs, reduce the disease and economic burden of diabetes, and improve the quality of life for all persons who have or are at risk for diabetes."² This goal has 21 objectives that address primary, secondary, tertiary prevention categories and process objectives.

In 2001, the Diabetes Control Program of the Arizona Department of Health Services (ADHS) published the *Diabetes and Associated Complications in Arizona: 1999 Status Report*.¹ This report makes recommendations to expand the surveillance of risk factors for diabetes and calls for collaboration with existing programs/agencies. Recognizing these needs, the Surveillance Committee of the Arizona Diabetes Control Council initiated a partnership that would collect information about diabetes. The committee is composed of representatives from the Arizona Association of Community Health Centers, Arizona Department of Health Services, Carl T. Hayden Veterans' Affairs Medical Center, Health Services Advisory Group, Indian Health Service, Inter Tribal Council of Arizona, Inc., Rural Health Office, University of Arizona, and members of the community.

The purpose of this document is to measure the annual progress of diabetes control efforts. Some of the objectives reflect activities of Arizona Diabetes Control Council (the Council) and its members in Arizona. Some of these objectives reflect activities of the Arizona Diabetes Control Program and the Council. The objectives were chosen with several criteria in mind:

1. The objectives need to reflect activities that have occurred recently so programmatic and surveillance changes can be made accordingly and quickly.
2. Easily obtainable objectives are desired due to limited staff (ADHS Diabetes Control Program) and resources.
3. The objectives must be able to have the ability to monitor trends to determine whether progress was achieved.
4. The objectives must cover the wide range of activities of the Arizona Diabetes Control Council and its members.

Based on these criteria, the Surveillance Committee of the Arizona Diabetes Control Council discussed various options and possible objectives to include. The Committee proposed the following objectives, which have been categorized into four groups: (a) Precursory Conditions and Primary Prevention, (b) Secondary Prevention, (c) Tertiary Prevention, and (d) Process Objectives.

Methodology:

This committee selected a set of indicators of importance to the Council's partners, and which at the same time, provide information about the status of diabetes in Arizona. Each organization has its own way of collecting the indicators; therefore, both the numerator and denominator were defined in this report for clarification. These definitions may or may not correspond with all national standards or measurements of care as promulgated by the American Diabetes Association, Medicare Standards, Healthy People 2010, HEDIS[®] 3.0 Comprehensive Diabetes Care, FACCT Diabetes Standards or the American Associations of Diabetes Educators Standards. Each reporting organization has its own characteristics that are listed below. However, all information reported in this document is from users of the sources (Agencies) or self-reported through surveys and limitations are stated for each of the indicators within the relevant category.

i) Indian Health Service:

The data provided by the Indian Health Service (IHS) is a statistical sample of the 1999 audit and it shows information obtained only from the Phoenix Area **excluding** two tribes in Tucson and the greater part of Navajo Nation. Future reports intend to include data from the Tucson and Navajo IHS-Areas. The indicator data thus do not include all sources of care for all American Indian residents in Arizona.

ii) Community Health Centers:

The information from the Community Health Centers is obtained from the diabetes collaborative agreement that is composed of three health centers - Mariposa Clinic, Mountain Park and Sun Life. This collaboration will be expanded to more centers in Arizona in the near future.

iii) Arizona Department of Health Services:

The information presented from the hospital discharge database does not include information from federal facilities, nor does include it emergency room information or outpatient information. However, a limited set of data was obtained from the Indian Health Service (Phoenix Area) and Veterans' Affairs Medical Center in Phoenix.

iv) Veterans' Affairs Medical Center (VA):

The VA health care system is divided into three areas: Phoenix, Tucson and Prescott. As mentioned above, the data presented in this report covers the Phoenix Area only. It is the intention of the surveillance committee to include data from the Tucson and Prescott Areas in future reports. Therefore, indicator data does not include all sources of care for all American Veterans in Arizona.

A. PRECURSOR CONDITIONS AND PRIMARY PREVENTION (Prevention of Diabetes Mellitus)

1. Proportion Of Mothers With Diabetes During Pregnancy

Mothers with diabetes during pregnancy are defined as those mothers who have chronic diabetes and/or women who develop diabetes during pregnancy (gestational diabetes). This measure was not filtered for singleton births.

Table 1. Percentage of mothers with diabetes (chronic or gestational) by mother's age group, 1989-1999. Source: Arizona Health Status and Vital Statistics 1989-1999, ADHS.

Age Group	<15	15-19	20-24	25-29	30-34	35-39	40+
Total Births 1989-1999	1,894	110,677	223,677	220,837	157,828	66,651	12,902
Births from Mothers with Diabetes	5	742	3,045	4,978	5,198	3,245	904
Percent	0.3%	0.7%	1.4%	2.3%	3.3%	4.9%	7.0%

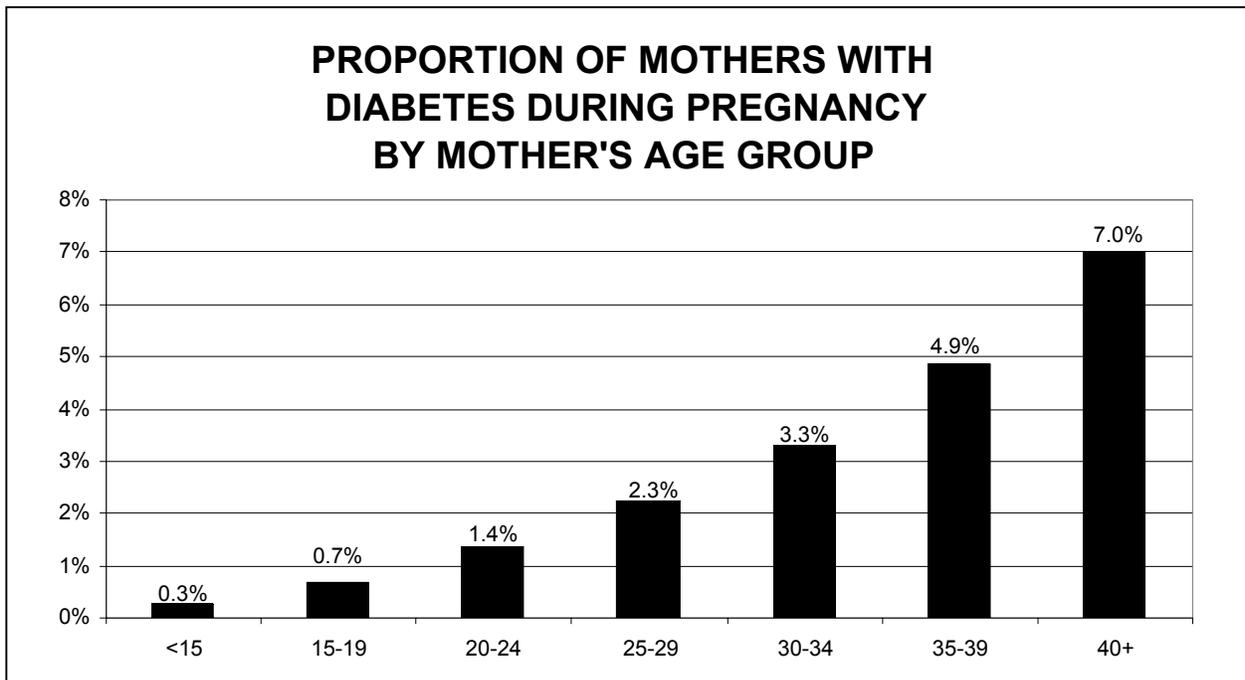


Figure 1. Percentage of mothers with diabetes (chronic or gestational) by mother's age group, 1989 – 1999, all races. Source: Arizona Health Status and Vital Statistics 1989-1999, ADHS.

2. Proportion Of Babies With Macrosomia (Birthweight \geq 4,000 Grams)

Only singleton births were included in this measure.

Table 2. Births of infants over 4,000 grams, 1990 – 1999, all races. Source: Arizona Health Status and Vital Statistics 1990-1999, ADHS.

Year	Births of Infants Over 4,000 Grams	Rate Per 1,000 Live Births
1990	6,837	99
1991	6,493	95
1992	6,247	91
1993	6,149	89
1994	6,348	90
1995	6,505	90
1996	6,506	94
1997	6,686	88
1998	6,900	89
1999	6,567	82

3. Pre-School Children Who Are Overweight

This indicator is defined as those children age one through age four with weight for height $>$ 90th percentile (ITCA and Navajo Nation) or $>$ 95th percentile (Arizona) based on standards developed by the National Center for Health Statistics (NCHS). These data only include low-income children participating in the WIC programs conducted by the State of Arizona, the Inter Tribal Council of Arizona, or the Navajo Nation.

Table 3. WIC participants and program characteristics report. Source: PAR 98, United State Department of Agriculture.

Source	Year	Number of Clients	Percent Overweight
State of Arizona WIC Program	1998	157,536	10.1% ($>$ 95 th percentile)
Intertribal Council of Arizona	1998	5,378	26.9% ($>$ 90 th percentile)
Navajo WIC Program	1998	11,655	21.1% ($>$ 90 th percentile)

NOTES:

Navajo WIC Program - Data from the Navajo Nation may include some children living in New Mexico.

All Sources - No response was provided for the current year.

4. Proportion Of Adults Who Are Considered Physically Inactive

These data are obtained from the self-reports of the Behavioral Risk Factor Surveys (BRFS). This survey has been conducted monthly over the telephone since 1992 and reported annually. These adults were defined as those individuals age 18 and older who responded that they did not do physical activity outside of work (during leisure time) during the past month.

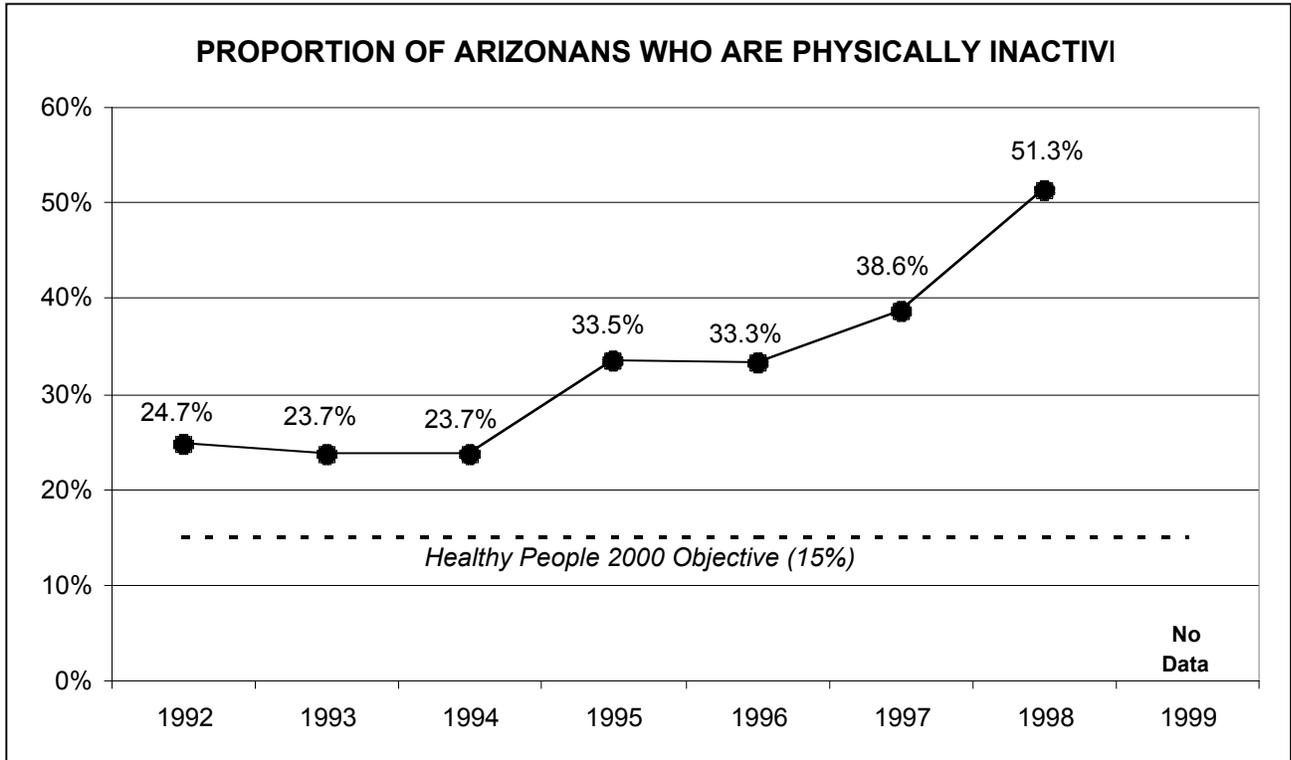


Figure 2. Proportion of Arizonans not participating in physical activity in the past month, 1992-1999. Source: *Arizona BRFS, 1992-1999.*

5. Proportion Of Children Who Are Considered Physically Active

This is determined by counting the number of children enrolled in the Promoting Lifetime Activity for Youth (PLAY) program who participated at various durations (in minutes) of activity. Those children in the fourth through eighth grades are included. These figures are self-reported by children who participated in the program.

Table 4a. Physical activity self-reported among youth during each school day. Source: Promoting Lifetime Activity for Youth (PLAY) Program.

Year 2000	Count	Percent
None	121	1.7%
Less than 30 Minutes	1,146	16.0%
30 – 59 Minutes	2,720	38.1%
1-2 Hours	1,633	22.9%
More than 2 Hours	1,521	21.3%

Table 4b. Physical activity self-reported among youth during each weekend. Source: Promoting Lifetime Activity for Youth (PLAY) Program.

Year 2000	Count	Percent
None	128	1.8%
Less than 30 Minutes	682	9.5%
30 – 59 Minutes	1,137	15.8%
1-2 Hours	1,497	20.8%
More than 2 Hours	3,741	52.1%

6. Proportion Of Adults Who Are Overweight

“Adults who are overweight” was defined separately for males and females. Overweight males were defined as those males age 18 and older with a body mass index (BMI) >27.8; overweight females were defined as those females age 18 and older with a BMI >27.3.

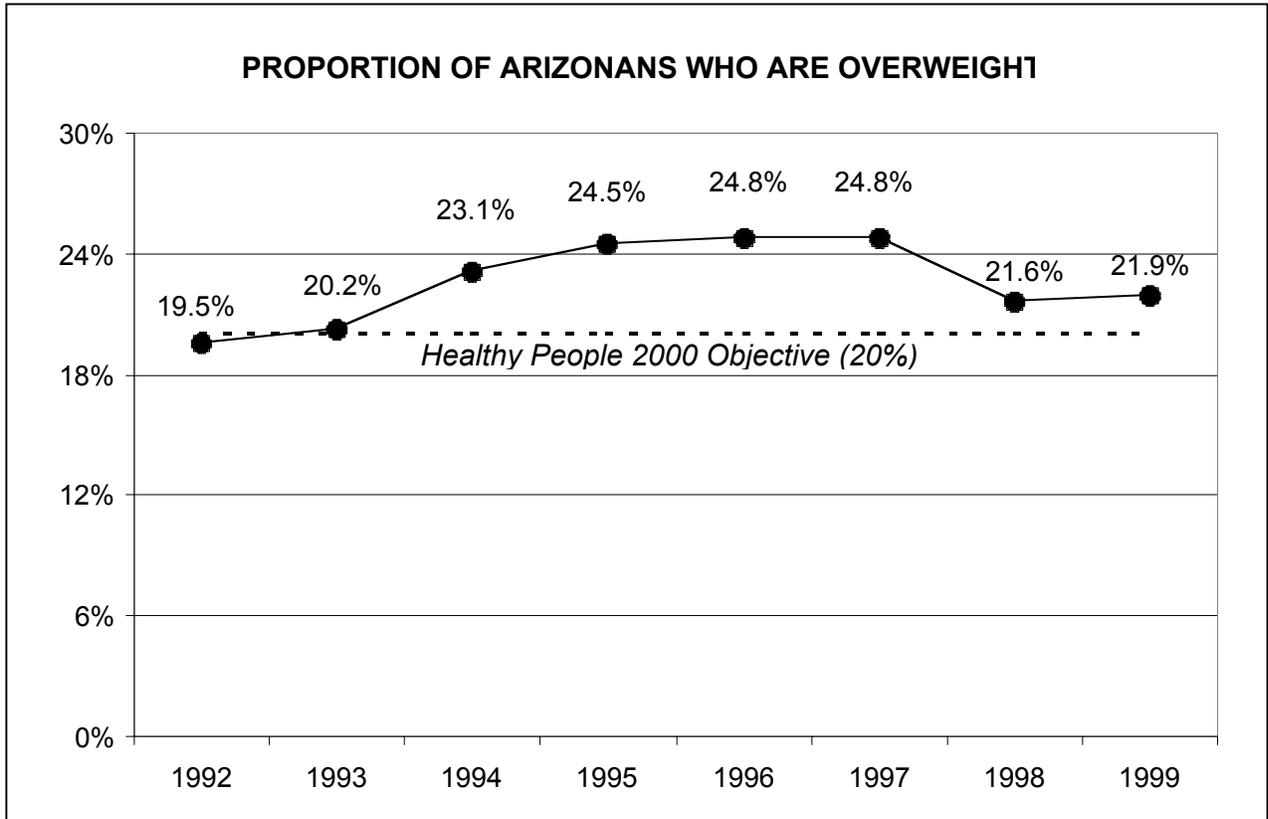


Figure 3. Proportion of Arizonans whose body mass index exceeds the lower limit of overweight, 1992-1999. Source: Arizona BRFS 1992-1999.

7. Proportion Of Adults Who Are Obese

This indicator is defined as those adults age 18 and older who have a body mass index (BMI) ≥ 30 .

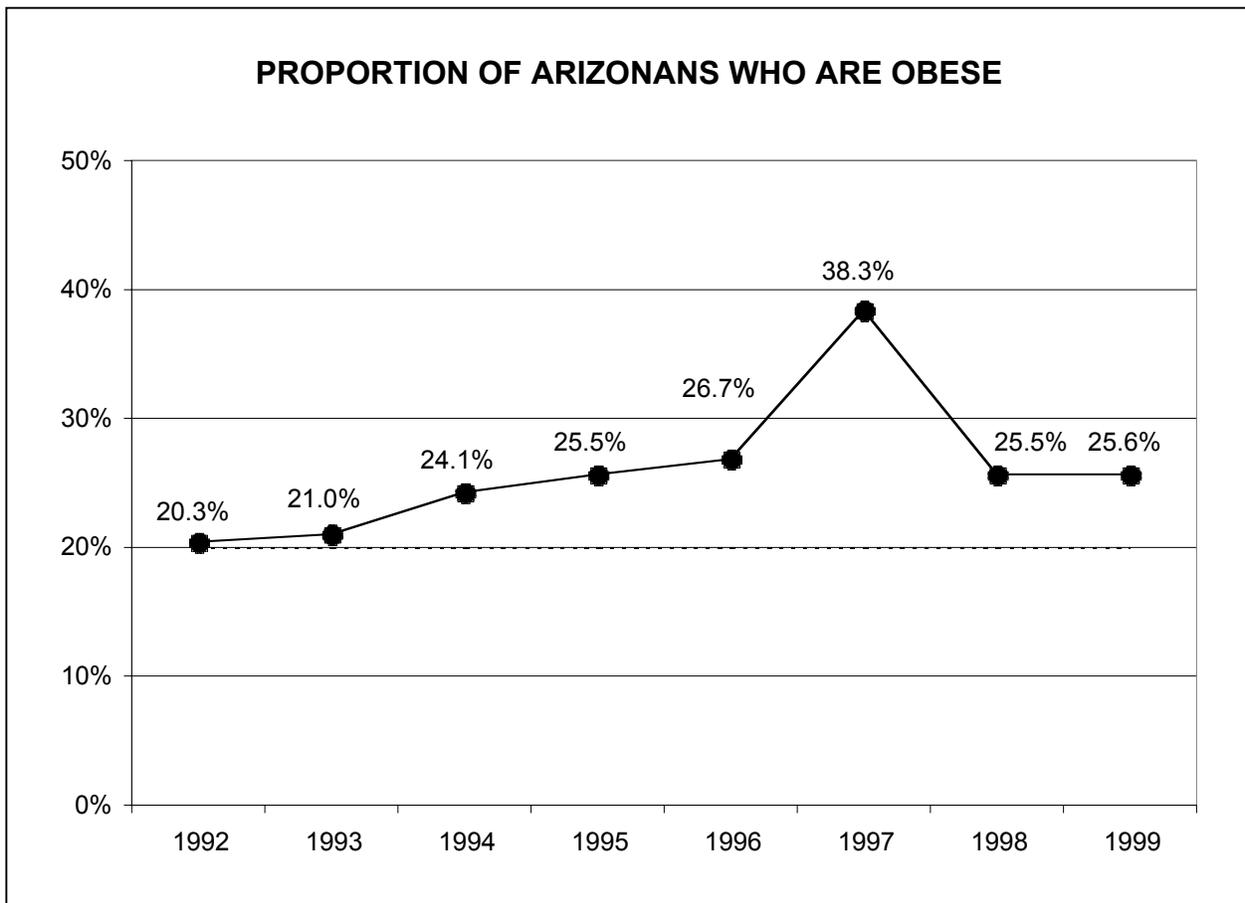


Figure 4. Proportion of Arizonans whose body mass index exceeds the lower limit of obese, 1992-1999. Source: *Arizona BRFS, 1992-1999*.

8. Proportion Of Arizonans Consuming Inadequate Servings Of Fruits And Vegetables Daily

This indicator is defined as self-reported eating less than 5 servings of fruits and vegetables per day by the adults age 18 and older who participated in the state's BRFS.

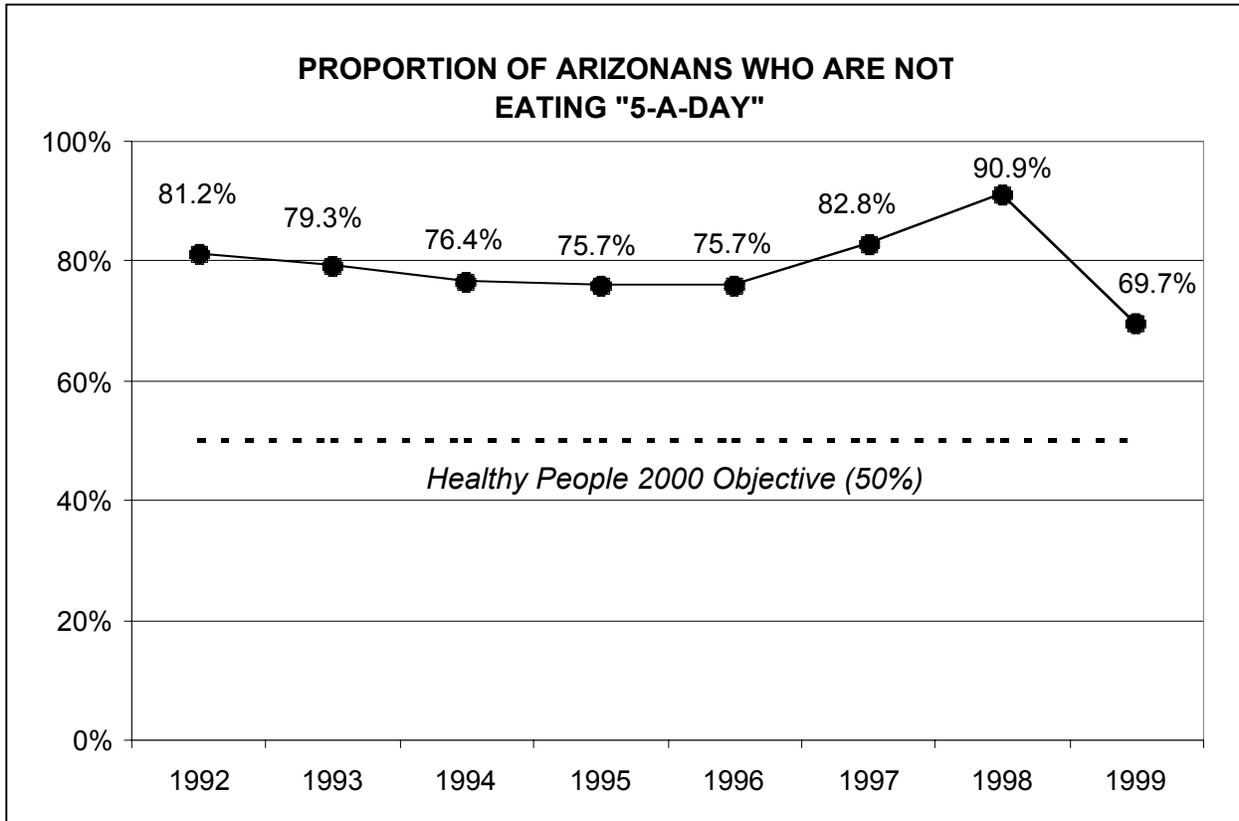


Figure 5. Proportion of Arizonans consuming less than 5 servings of fruits or vegetables per day, 1992-1999. Source: Arizona BRFS, 1992-1999.

**B. SECONDARY PREVENTION
(Prevention of complications among persons who already have clinically diagnosed Diabetes Mellitus)**

9. Percentage Of Diabetic Patients Receiving One Or More Glycohemoglobin (HbA_{1c}) Tests During The Last 12 Months

The numerator for this indicator is the number of diabetic patients who have had at least one glycohemoglobin test coded as CPT code 83036 in the past year. The denominator is defined as “diabetic patients”, that is, persons seen for medical services who also were coded with at least one diagnosis of diabetes (ICD-9 code=250.xx) during the past year. HbA_{1c} testing is fundamental to assessing the underlying control of the disease. Measurement of HbA_{1c} quantifies glucose control over the previous three to four months and is the preferable measure of long-term glycemic control. The Diabetes Quality Improvement Project (DQIP) recommends that health plans and providers be accountable for at least one test per year.

Table 5. Percentage of diabetic patients receiving one or more glycohemoglobin (HbA_{1c}) tests during the last 12 months by reporting organization.

Source	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	Not Presented	Not Presented	48.0%
IHS - Phoenix Area	8/98 – 7/99	Not Presented	Not Presented	98.0%
Medicare Fee for Service	4/99 – 3/00	12,561	18,149	69.2%
Medicare HMO (7 groups)	1/00 – 12/00	Not Presented	Not Presented	87%
VA - Phoenix Area	8/00 – 7/01	5,377	6,678	80.5%

NOTES:

Community Health Centers - No response was provided for the current year.

IHS Phoenix Area – No response was provided for the current year, but for the period 8/98-7/99, data were collected from the Diabetes chart audit. The information is obtain through a random sampling technique of 7.4% of the total diabetic population that are seen at the IHS facilities within the last 3 years in only Phoenix Area IHS (not included 2 tribes in Tucson and some portion of Navajo).

Medicare HMO – Summary HEDIS® data obtained from www.medicare.gov.

Medicare Fee for Service – Figures represent interim data. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

10. Percentage of diabetic patients receiving at least one microalbuminuria test during the last 12 months

Diabetic patients receiving a micoralbuminuria test with the CPT procedure code of 82043 (quantitative microalbumin urine) or 82044 (semi-quantitative microalbumin urine). This test is a measure for early detection of renal disease in people with diabetes. It should be noted that the microalbuminuria test is not usually done for patients with diabetes who already have evidence of renal disease with high protein levels shown in other preliminary basic urine tests; this is a difficult factor to consider and certainly accounts for some variability seen between organizations.

Table 6. Percentage of diabetic patients receiving at least one microalbuminuria test during the last 12 months by reporting organization.

Source	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	1	113	0.9%
IHS - Phoenix Area	8/98 – 7/99	310	1,331	23.0%
Medicare Fee For Service	Not Available	Not Available	Not Available	Not Available
Medicare HMO (6 of 8 groups)	1/98 – 12/98	882	1,649	53.5%
VA - Phoenix Area	8/00 – 7/01	3,404	6,678	51.0%

NOTES:

Community Health Centers - No response was provided for the current year, however for the period 11/99-10/00, this indicator is defined as the number of patients with microalbuminuria and creatinine ratio.

IHS Phoenix Area - No response was provided for the current year, but for the period 8/98-7/99, IHS Phoenix reported an additional 27% of patients who had frank proteinuria; the remaining patients were not screened for microalbuminuria.

Medicare Fee for Service - This information is not available for Medicare FFS due to change in methodology. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

Medicare HMO - Summary HEDIS® data were not available for the current year. However, for the period 1/98 – 12/98, the percentage of patients monitored for nephropathy is assessed by the patient having been given an annual screening test for microalbuminuria, or in the past two years if any two of the following three conditions are met: (1) the patient is not taking insulin; (2) the patient has an HbA_{1c} less than 8.0% (most recent result within the reporting period); and (3) the patient did not have any evidence of albumin on the previous year's exam, or did not have a positive test for macroalbuminuria in the past two years, or did not have documented evidence of medical recognition for nephropathy in the past two years. Other evidence of a patient being treated for nephropathy or kidney disease (by use of CPT-4, ICD-9 or other coding) would also count.

11. Eye Examination

Percent of diabetic patient receiving a dilated eye examination performed by an eye care professional--ophthalmologist or optometrist--within the past 12 months. The following CPT codes were used to determine whether patients received a dilated eye examination: 92002, 92004, 92012, 92014, 92018, 92019, 99201-99215, and 99241-99245.

Table 7. Percent of diabetic patients with eye examination by reporting organization.

Sources	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	2	113	1.8%
IHS - Phoenix Area	8/98 – 7/99	675	1,331	50.7%
Medicare Fee For Service	4/98 – 3/00	11,687	18,149	64.4%
Medicare HMO (7 groups)	1/00 – 12/00	Not Presented	Not Presented	66%
VA - Phoenix Area	10/98 – 9/99	2,215	5,347	41.4%

NOTES:

Community Health Centers - No response was provided for the current year, however for the period 11/99-10/00, data are available for a few months only.

IHS Phoenix Area - No response was provided for the current year.

Medicare Fee For Service - Figures represent interim data. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

Medicare HMO – Summary HEDIS® data obtained from www.medicare.gov.

VA - Phoenix Area – Current data are not available due to current coding and computer limitations.

12. Foot Examination

The foot examination measure is defined as a documented foot examination performed by a foot specialist (CPT code 99239). The examination includes an evaluation of protective sensation, vascular status (i.e., palpation for pulses), and a visual inspection for foot deformities/ulcers. A proper foot exam is a low-cost and effective means to detect foot disease and assess the risk of future serious foot disease.

Table 8. Percent of diabetic patients with recorded foot examination.

Source	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	Not Presented	Not Presented	44.2%
IHS - Phoenix Area	8/98 – 7/99	Not Presented	Not Presented	55.0%
Medicare Fee For Service	Not Available	Not Available	Not Available	Not Available
Medicare HMO (6 of 8 groups)	1/98 – 12/98	Not Presented	Not Presented	15.6%
VA - Phoenix Area	Not Available	Not Available	Not Available	Not Available

NOTES:

Community Health Centers - No response was provided for the current year, however for the period 11/99-10/00, patients provided a binary response (Yes/No) to the question of whether or not they had a foot examination within the last 12 months. This is a self-reported measure. Podiatrists have noted that other CPT codes sometimes are used to indicate a foot exam.; these codes are not reflected in this table.

IHS - Phoenix Area - No response was provided for the current year, but for the period 8/98-7/99, foot examination is gathered by chart audits.

Medicare Fee for Service - This information is not available for Medicare FFS due to change in methodology. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

Medicare HMO – Summary HEDIS® data were not available for the current year.

VA - Phoenix Area – Current data are not available due to current coding and computer limitations.

**C. TERTIARY PREVENTION
(Prevention of additional complications among Diabetics with a complication)**

13. Hypertension

It was calculated as the percentage of diabetic patients with hypertension. For this report, a person is defined to be hypertensive if the average blood pressure was above 130/85 during the last 12 months.

Table 9. Percent of Diabetic patients with hypertension by reporting organization.

Source	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	Not Presented	Not Presented	45.1%
IHS - Phoenix Area	8/98 – 7/99	Not Presented	Not Presented	62.0%
Medicare Fee For Service	Not Available	Not Available	Not Available	Not Available
Medicare HMO (6 of 8 groups)	1/98 – 12/98	Not Presented	Not Presented	60.4%
VA - Phoenix Area	10/98 – 9/99	Not Presented	Not Presented	79.4%

NOTES:

Community Health Centers - No response was provided for the current year.

IHS - Phoenix Area - No response was provided for the current year.

Medicare Fee for Service - This information is not available for Medicare FFS due to change in methodology. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

Medicare HMO - Summary HEDIS® data were not available for the current year. However, for the period 1/98 – 12/98, these figures are based on clients' most recent blood pressure readings that are available. The information represents the percent of patients that had a systolic blood pressure reading greater than 140 mm of Hg and/or a diastolic blood pressure reading greater than 90 mm Hg. Also, these figures can be recalculated using a blood pressure of 130/85.

VA - Phoenix Area – Current data are not available due to current coding and computer limitations.

14. Lipid Profile

It was calculated as the percentage of diabetic patients who had a lipid panel within the last 12 months. The CPT code 80061 was used to identify patients who had a lipid panel. CPT code 80061 includes total serum cholesterol, direct measurement lipoproteins and triglycerides.

Table 10. Percent of diabetic patients who had a lipid panel within the last year by reporting organization.

Sources	Most Recent Year of Collection	Numerator	Denominator	Percent
Community Health Centers	11/99 – 10/00	Not Presented	Not Presented	53.1%
IHS - Phoenix Area	8/98 – 7/99	Not Presented	Not Presented	44.0%
Medicare Fee For Service	4/98 – 3/00	12,210	18,149	67.3%
Medicare HMO (7 groups)	1/00 – 12/00	Not Presented	Not Presented	87%
VA - Phoenix Area	8/00 – 7/01	4,704	6,678	70.4%

NOTES:

Community Health Centers - No response was provided for the current year.

IHS - Phoenix Area - No response was provided for the current year, but for the period 8/98-7/99, the Indian Health Service (Arizona) did not code this data as a profile; this information is the percent of patients with LDL measured, which amounts to the same thing, as those patients are likely to have had the other profile components.

Medicare Fee For Service - Figures represent interim data. Data are currently obtained from claims, rather than by chart abstraction in previous data collection cycles.

Medicare HMO – Summary HEDIS® data obtained from www.medicare.gov.

15. Hospitalizations

The numerator for this indicator is defined as a person discharged from the hospital, which had an ICD9-CM of 250.xx in any of the discharge diagnosis fields in the database.

Table 11a. Hospital discharges for diabetes-related discharge diagnosis, nonfederal facilities only, 1991-1999. Source: HDDB.

Year of Discharge	Diabetes Discharges (Number)	Diabetes Discharge Rate*	Average Length Stay (Days)	Total Charges	Deaths (Number)
1991	28,783	67.4	6.3	\$327,563,452	939
1992	33,036	76.7	6.1	\$402,768,934	1,067
1993	32,758	74.8	5.8	\$429,237,924	1,081
1994	36,788	81.6	5.3	\$493,820,743	979
1995	44,088	93.4	5.4	\$669,148,220	1,345
1996	50,762	103.0	4.9	\$775,551,399	1,407
1997	54,848	106.3	4.7	\$881,891,382	1,688
1998	54,425	101.1	4.9	\$925,712,245	1,349
1999	59,359	105.8	4.8	\$1,065,316,017	1,440

Table 11b. Hospitalizations from federal facilities.

Source	Year	Number of Discharges for Diabetes	Diabetes Discharge Rate	Average Length of Stay (Days)
VA - Phoenix Area	FY 98	1,645	226.6	5.6
	FY 99	1,545	250.0	6.6
IHS - Arizona	1996	Not Available	325	Not Available

NOTES:

VA - Phoenix Area - Discharge rate computed as number of diabetes discharges per 1,000 discharges from all causes.

IHS - Arizona - No response was provided for the current year, but for the 1996 period, discharge rate computed as number of diabetes-related discharges per 100,000 discharges.

16. New Cases of End Stage Renal Disease (ESRD) in persons ≥ age 65

Based on the End Stage Renal Disease (ESRD) Network #15 Data System, Arizona had a total of 1,717 newly diagnosed chronic ESRD patients in 2000. Of those 1,717 patients, 906 or 52.8% were age 65 or older.

17. Lower Extremity Amputation

Diabetes patients that had one or more extremity amputations during the reporting year. Lower extremity amputations include those procedures coded with the following ICD-9 diagnosis codes: 84.10-leg amputation, 84.11-toe amputation, 84.12-foot amputation, 84.13-ankle through joint amputation, 84.14-ankle through lower leg amputation, 84.15-leg below knee amputation, 84.16-knee through joint amputation, 84.17-leg above knee amputation, 84.18-leg through hip amputation, and 84.19-leg and hip amputation.

Table 12. Number of lower extremity amputations among hospitalized diabetic patients.

Source	1997	1998	1999
Hospital Discharge Database (HDDDB)	1,054	1,010	824
IHS	Not Available	Not Available	Not Available
VA - Phoenix Area	Not Available	Not Available	51

NOTES:

Hospital Discharge Database - The HDDDB data is for inpatient amputations from nonfederal facilities only.

IHS - No response was provided for the current year, but for the previous periods, these data are not available. Some of these amputations occur in non-IHS facilities. In older American Indian adult male populations (Veterans), diabetes care (especially amputation) for a significant number of urban and reservation dwellers may be delivered in VA Medical Centers. Urban populations care would be greater than reservation because of the nature of the IHS 3rd party reimbursement policies.

D. MORTALITY

18. Mortality

This indicator is defined as the number of all deaths in Arizona with a diabetes diagnosis (ICD9 code = 250.xx) listed as the underlying cause of death.

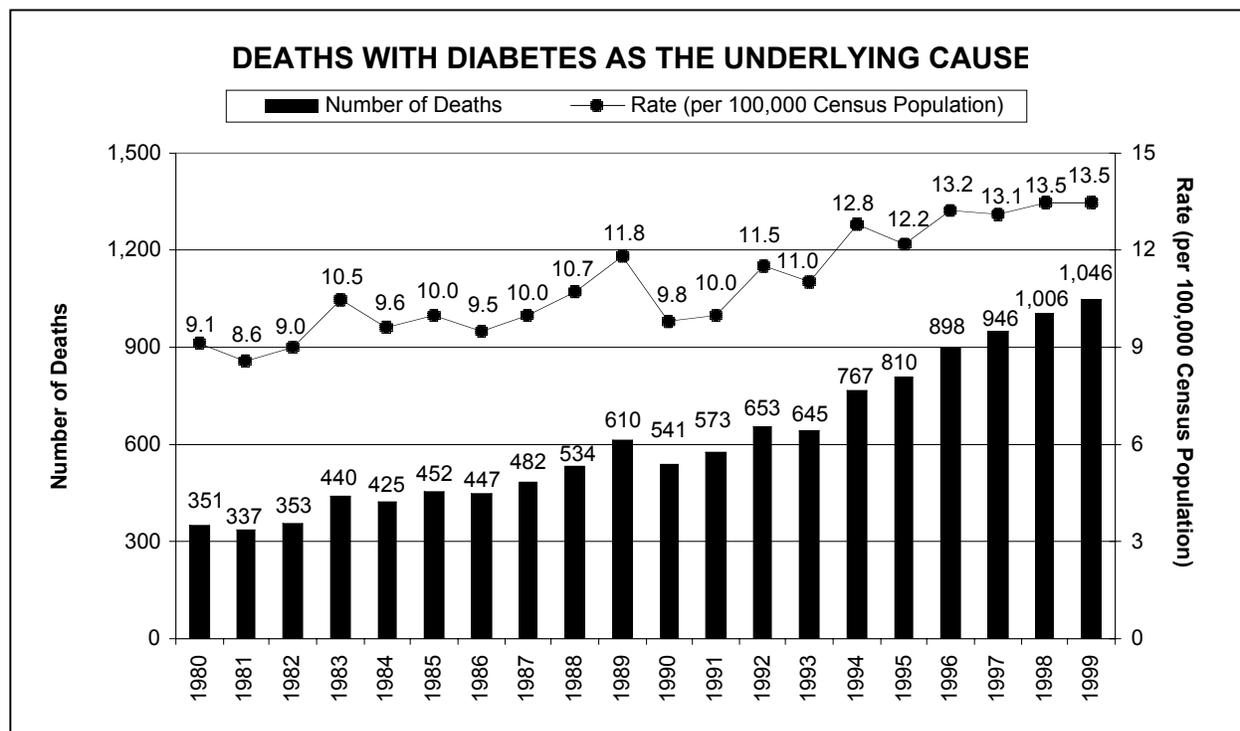


Figure 6. Deaths in Arizona with the underlying cause of death listed as ICD-9 code 250.xx (diabetes), 1980 – 1999. Rates are per 100,000 population, age-adjusted to the US 1940 standard. These data include deaths among American Indians. Source: *Arizona Health Status and Vital Statistics 1980-1999*, ADHS.

E. RESOURCES

19. Certified Diabetes Educators

Diabetes education in Arizona is provided by health professionals representing various disciplines, such as: physicians, family nurse practitioners, registered nurses and registered dietitians. There is a specialty group, Certified Diabetes Educators (CDEs), whose membership requires that the individual be from one of the above health fields, which requires a license, and successful completion of a national certification examination. Certification for Diabetes Educators represents the “Gold Standard” in diabetes education.

In Arizona the majority of Certified Diabetes Educators are found in the metropolitan areas of Phoenix and Tucson. The rural areas, which include majority of the reservations and the area along the U.S.-Mexico Border, have only a handful of CDEs. Statewide there is a disproportionate under representation of bilingual and minority CDEs.

Diabetes education is critical to the management of diabetes and the prevention of the complications that it causes. The Arizona Diabetes Control Council and the Diabetes Control Program recognize the need to provide education and training for both professionals and para-professionals That provide diabetes education.

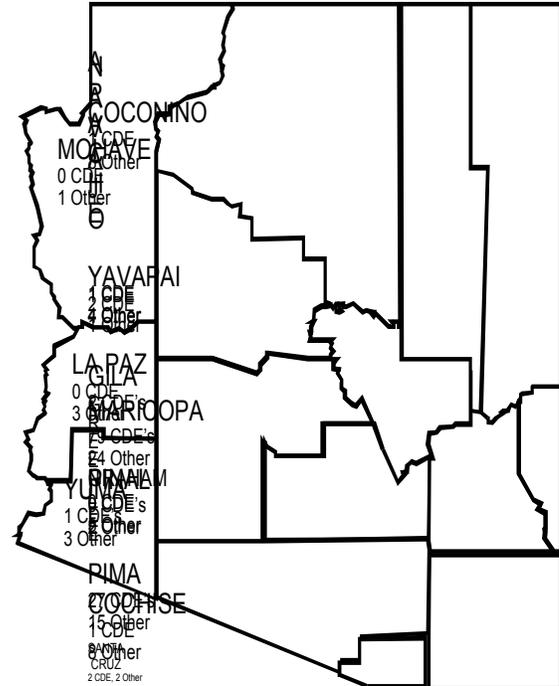


Figure 7. CDE distribution by County in Arizona, 1999.

Source: For this measure, the source documents the membership lists of the two state chapters of the American Association of Diabetes Educators and the National Member Resource Guide of the American Association of Diabetes Educators. The two state chapters are: - Central Arizona Association of Diabetes Educators (CAADE) - Southern Arizona Chapter of Diabetes Educators (SACDE)

Notes:

As defined above, this measure captures only one type of diabetes educator, namely those educators who are members of CAADE, SACDE, and the American Association of Diabetes Educators. In addition, doctors, nurses, registered dietitians, and other health care providers who are not certified Diabetes Educators may provide education to patients with diabetes.

20. Registries

The registries measure is defined as those managed care systems (HMOs, VA, IHS Area, CHC) that have a registry of diabetic patients. The term registry cannot readily be defined because the definition of registry may vary from entity to entity. Each source responded to this measure with a binary (yes/no) response to the question as to whether or not the entity has a registry of diabetic patients.

Table 13. Number of reporting organizations with diabetes registry.

Source	Yes/No
Community Health Centers	Yes
IHS - Phoenix Area	Yes
Medicare Fee For Service	N/A
Medicare HMO	N/A
VA - Phoenix Area	No

NOTES:

Community Health Centers - Two of the 12 community health centers currently have registries of their diabetic patients. In the future, the plan is for all of the community health centers to have their own registries of diabetic patients.

Medicare Fee For Service - SDPS can be queried for all 250.0 ICD-9 codes which may or may not approximate the prevalence of diabetes among Medicare beneficiaries. Please note SDPS cannot be considered a complete data source.

Medicare HMO - No response was provided for Medicare HMO. This will be addressed in future years.

21. Patient Self-Management Education Including Nutrition Education

This is a patient-survey based measure used to determine whether or not patients with diabetes are receiving the necessary education to help them manage their disease. The proper management of diabetes relies extensively on the patients' knowledge and understanding of their disease. Therefore, patients must be properly educated in order to successfully self-manage their blood sugar levels, plan meals and exercise.

Table 14. Number of diabetic patients who received self-management classes.

Source	Most Recent Year of Collection	Total Number Of Diabetic Patients	Diabetic Patients Completing Educational Programs	Percent
Community Health Centers	11/99 – 10/00	113	2	1.8%
IHS - Phoenix Area	8/98 – 7/99	1,331	956	71.8%
Medicare	5/98 – 4/99	1,870	971	51.9%
VA - Phoenix Area	10/98 – 9/99	5,239	482	92.0%

NOTES:

Community Health Centers - Community Health Centers - No response was provided for the current year, however for the period 11/99-10/00, the type of education and the extent to which the information is provided to the patients varies from entity to entity. Patients provided a binary (yes/no) response as to whether or not they had completed a diabetes educational program.

IHS - Phoenix Area - No response was provided for the current year, but for the period 8/98-7/99, 53% of the patients with diabetes received formal diet education, 45% received exercise information, and 60% received other information such as self-testing procedures and insulin injection technique. This sum is greater than 100% because some patients received more than one type of education.

Medicare - These figures represent the number of Medicare patients (both FFS and HMO) who reported having discussions of diet with a health care professional. Data are from the Diabetes Statewide Project conducted from May 1998 to April 1999.

F. IMPORTANT ISSUES NOT ADDRESSED

Several measures were identified but have been omitted due to the lack of reasonably comparable data to support their inclusion. These measures are as follows:

- i) Smoking;
- ii) School-aged Children Who are Overweight;
- iii) HbA₁C Mean Value;
- iv) Use of ACE inhibitors.

It is recommended that these items be evaluated in the future. It will be necessary to determine the best way to identify and collect the data needed to support each measure.

G. STANDARDS OF CARE

Table 15. Standards of care recommended by the American Diabetes Association.

Indicator	Recommendations
Physical Activity - Adults	At least 30 minutes a day
Physical Activity - Children	At least 60 minutes a day of intermittent activity
Glycated hemoglobin - HbA ₁ C (%)= <7	i) Test quarterly if treatment changes or not meeting goals; ii) Test at least 2 times/year if stable.
Microalbuminuria	Test yearly if urinalysis is negative for protein
Dilated eye exam	Test yearly
Blood pressure = <130/85	Test each regular diabetes visit
Lipid profile	Test yearly (less frequent if normal)

REFERENCES

1. Arizona Diabetes Control Council Surveillance Committee. *Diabetes and Associated Complications in Arizona: 1999 Status Report*. ADHS. May, 2002.
2. U.S. Department of Health and Human Services. *Healthy People 2010*, Vol. I, 5:1-38, 1999.