ARIZONA DIABETES INDICATORS ANNUAL REPORT May 2004

Arizona Department of Health Services
Diabetes Prevention and Control Program

Arizona Diabetes Indicators Report: May 2004

by

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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 Epidemiology Center	The Epidemiology 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 261,228 Arizonans had diabetes in 2002. [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 report has 23 objectives that address primary, secondary, tertiary prevention categories and process objectives.

The purpose of this document is to measure the annual progress of diabetes control efforts. 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 staffing and resources of the ADHS Diabetes Prevention and Control Program.

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.

The following objectives have been categorized into four groups: (a) Precursory Conditions and Primary Prevention, (b) Secondary Prevention, (c) Tertiary Prevention, and (d) Process Objectives.

Methodology:

In 1999 the Surveillance Committee of the Diabetes Council selected a set of indicators of importance to the Council's partners, and which at the same time would 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 2002 and 2003 audits. The 2002 audit shows information from the Phoenix Area. The 2003 audit shows information from the Tucson Area. This IHS data excludes the Navajo Nation. Future reports intend to include data from the Navajo IHS-Area. The indicator data thus do not include all sources of care for all American Indian residents in Arizona.

ii) Community Health Centers: These information has been obtain from the following four Community Health Centers: Chiricahua – El Firda, Canyonlands, Clinica Adelante and Morenci Healthcare.

iii) Arizona Department of Health Services: The information presented from the hospital discharge database does not include information from federal facilities, nor does it include emergency room or outpatient information.

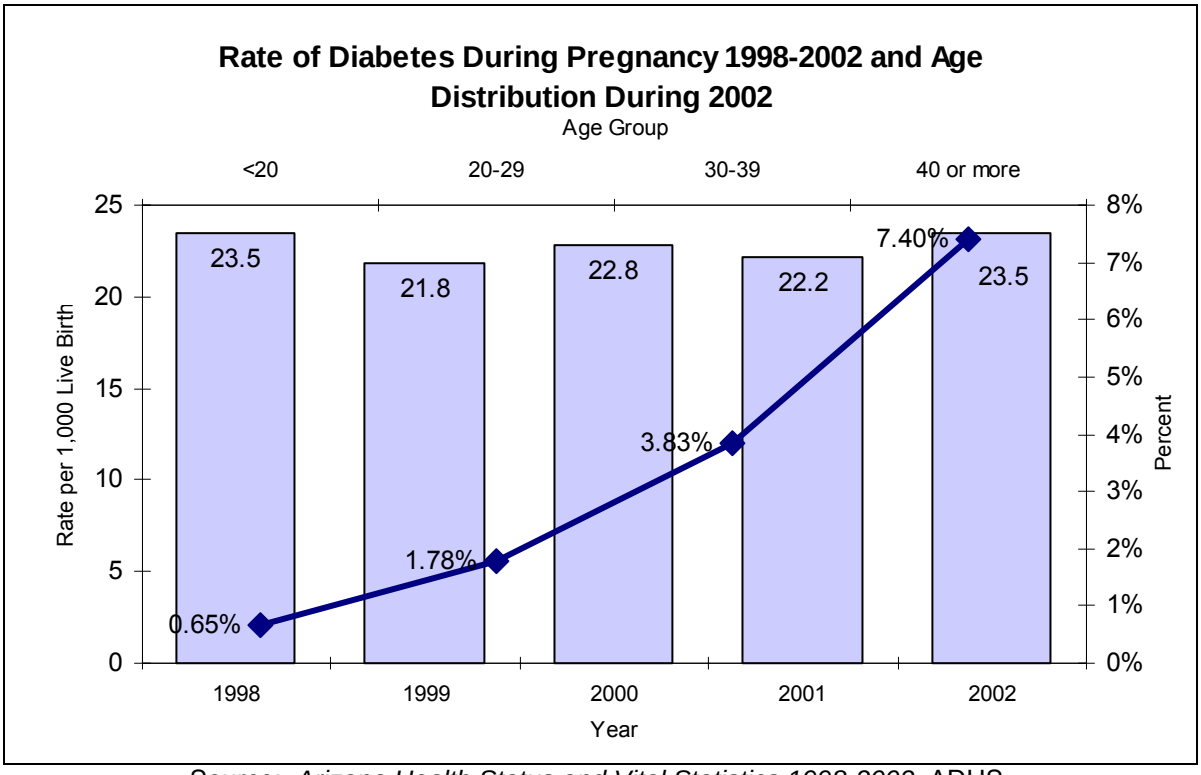
iv) Veterans Affairs Medical Center (VA): The VA health care system is divided into three areas: Phoenix, Tucson and Prescott. The data presented in this report covers the Phoenix and Prescott Areas only. It is the intention to include data from the Tucson Area in future reports. Therefore, indicator 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 includes all births. Figure 1 presents the rate per 1,000 live birth of diabetes during pregnancy from 1998 to 2002 and the age distribution for deliveries associated with diabetes for the year 2002. Notice that the rate of diabetes has been stable for the last five years. Figure 1 also shows an increase of diabetes rate with increasing age.

Figure 1. Percentage of Mothers with Diabetes (Chronic or Gestational) by Mother's Age Group. 1998-2002. All Races.



Source: *Arizona Health Status and Vital Statistics 1998-2002,* ADHS.

2. Rate Of Babies With Macrosomia (Birthweight ≥ 4,000 Grams) Among Mothers with Diabetes (Chronic or Gestational Diabetes).
Table 1 describes the rate of babies with Macrosomia for 1998-2002. The rate of Macrosomia has been stable for the last three years.

Table 1. Births to Diabetic Mothers of Infants Weighing at or Greater than 4,000 Grams, 1998 – 2002, All Races.

Year	Births of Infants Over 4,000 Grams	Rate Per 1,000 Live Births
1998	353	4.5
1999	251	3.1
2000	332	3.9
2001	320	3.8
2002	342	3.9

Source: *Birth Database 1998-2002,* ADHS.

3. Pre-School Children Who Are Overweight

This indicator is defined as those children age two through age four with weight for height ≥ 95th percentile for Arizona WIC Program and ITCA. Age one through four with weight for height > 90th percentile for Navajo Nation 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 (see Table 2).

Table 2. WIC Participants and Program Characteristics Report.

Source	Year	Number of Clients	Percent Overweight
State of Arizona WIC Program	2002	35,470	11.4%
Intertribal Council of Arizona	2002	4,912	20.8%
Navajo WIC Program	1998	11,655	21.1% (>90th percentile)

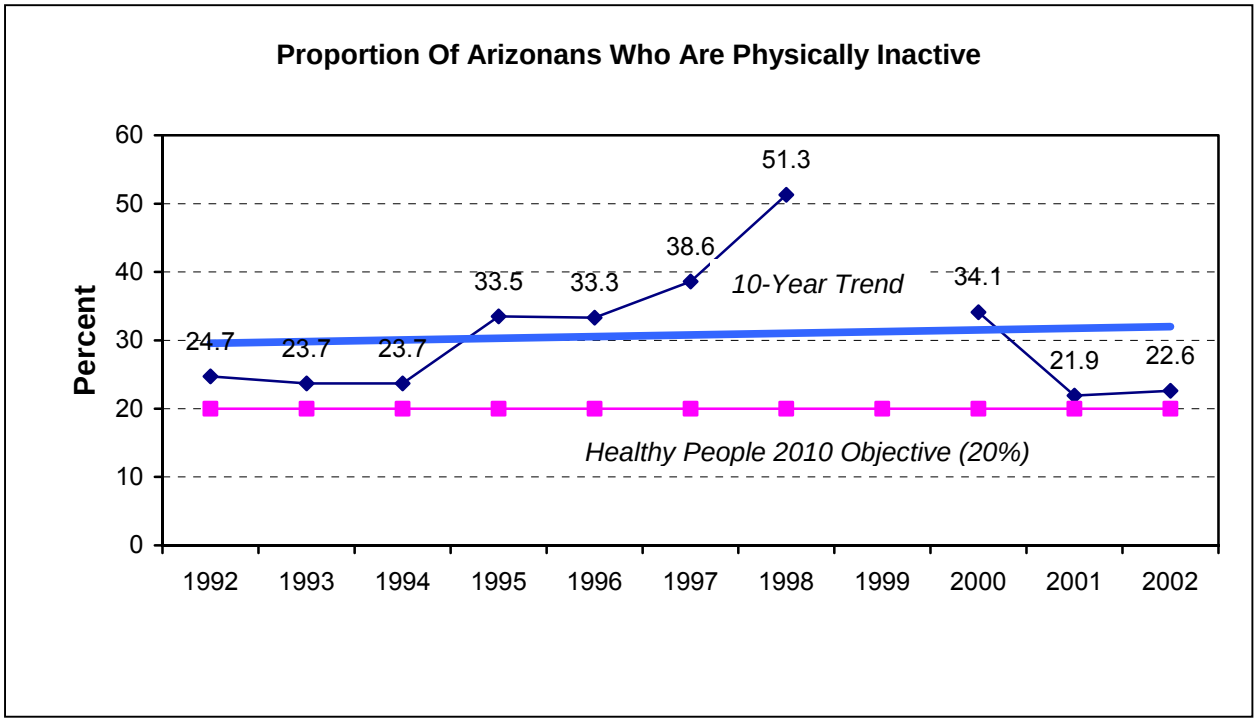
NOTES:

- Arizona WIC - 2002 Pediatric Nutrition Surveillance System Summary.
- Navajo WIC Program - Data from the Navajo Nation may include some children living in New Mexico.

4. Proportion Of Adults Who Are Considered Physically Inactive

These data are obtained from the self-reports of the Behavioral Risk Factor Survey (BRFS). This telephone survey has been conducted monthly since 1992 and is reported annually. These adults were defined as those individuals age 18 and older that responded they did not do physical activity outside of work (during leisure time) during the past month. Figure 2 shows the proportion of Arizonans who are physically inactive. Based on the 10-year trend line presented approximately 30% of the Arizona adult population self report physically inactivity.

Figure 2. Proportion of Arizonans Not Participating in Physical Activity in the Past Month, 1992-2002.



Source: *Arizona BRFS, 1992-2002.*

5. Proportion Of Children Who Are Considered Physically Active

This information is complied from students responding to the 2003 Youth Risk Behavioral Survey. The survey included students in grades 9 through 12. These figures represent self-reported data from all children who participated in the survey (see Table 3).

Table 3. Self-reported Physical Activity Among Youth During Past Seven Days.

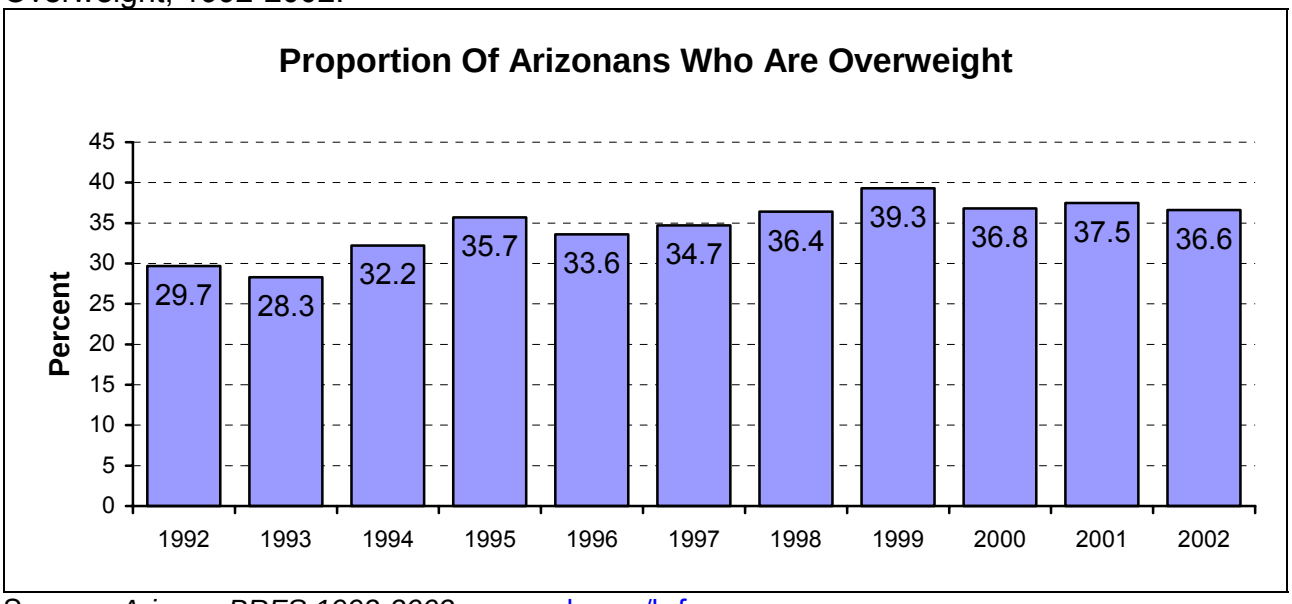
Year 2003	Percent
No vigorous or moderate physical activity	7.7%
Vigorous activity for 20 minutes or more/ 3 or more days	66.9%
Moderate activity 30 minutes or more/ 5 or more days	29.2 %
Participated in recommended physical activity in past week	72.2%

Source: *YRBS, 2003*. Arizona Department of Education (www.ade.state.az.us)

6. Proportion Of Adults Who Are Overweight

All respondents to the Arizona Behavioral Risk Factor Survey with a Body Mass Index (BMI) that is between 25.0 and 29.9 is used to defined overweight in adults. BMI is defined as weight in kilograms divided by height in meters squared (w/h^2). The figures do not include survey respondents with missing, don't know and refused answers. Figure 3 shows the proportion of Arizonans whose body mass exceeds the lower limit of overweight over a 10-year period.

Figure 3. Proportion of Arizonans Whose Body Mass Index Exceeds the Lower Limit of Overweight, 1992-2002.

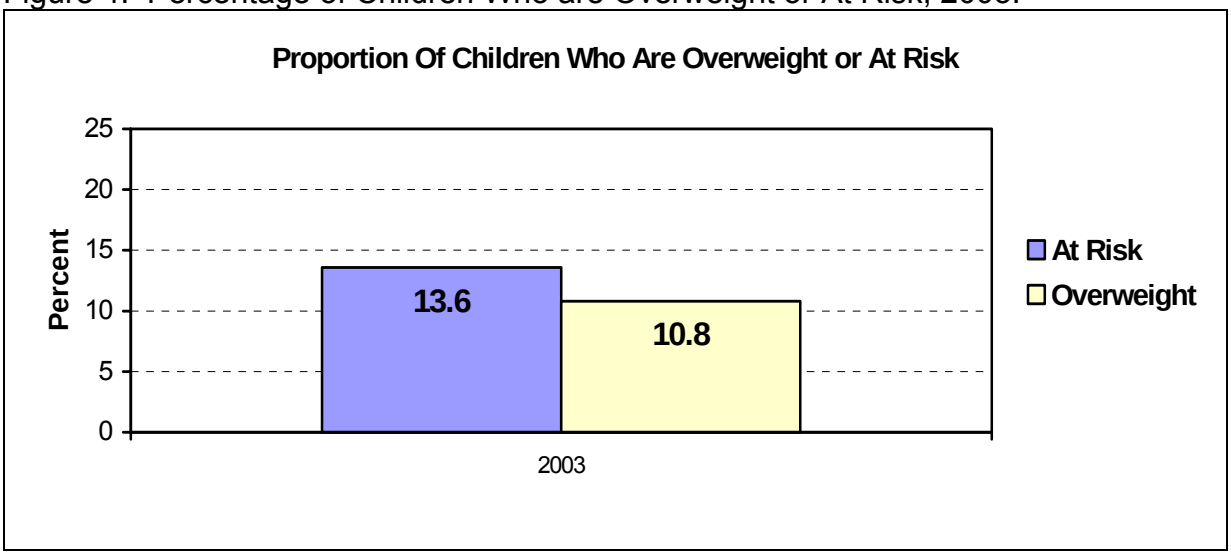


Source: *Arizona BRFS 1992-2002*, www.cdc.gov/brfss.

7. Proportion of High School Age Children Who Are Overweight or At Risk to Become Overweight

This information is complied from students responding to the 2003 Youth Risk Behavioral Survey. The survey included students in grades 9 through 12. These figures represent self-reported data from all children who participated in the survey. In 2003, 10.8 percent of the children were overweight (see Figure 4).

Figure 4. Percentage of Children Who are Overweight or At Risk, 2003.

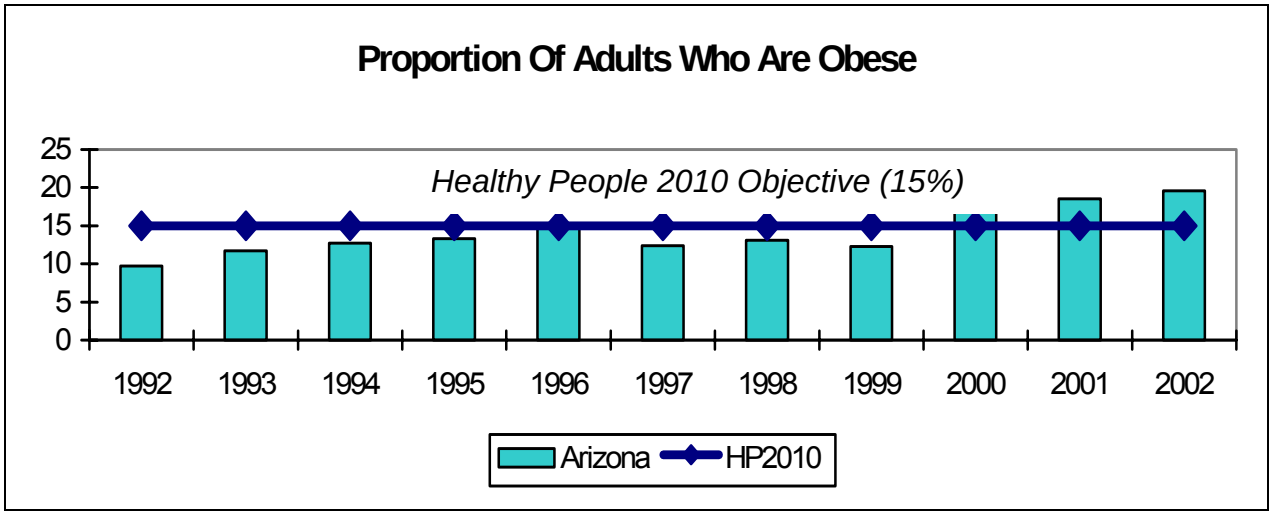


Source: *Arizona YRBS 2003*, www.ade.state.az.us

8. Proportion Of Adults Who Are Obese

All respondents to the Behavioral Risk Factor Survey with a Body Mass Index (BMI) of 30.0 or more. BMI is defined as weight in kilograms divided by height in meters squared (w/h^2). The figures do not include survey respondent s with missing, don't know and refused answers. The adult 2000-02 levels were above the Healthy People 2010 Objectives of 15 percent (see Figure 5).

Figure 5. Proportion of Arizonans Whose Body Mass Index Exceeds the Lower Limit of Obese, 1992-2002.

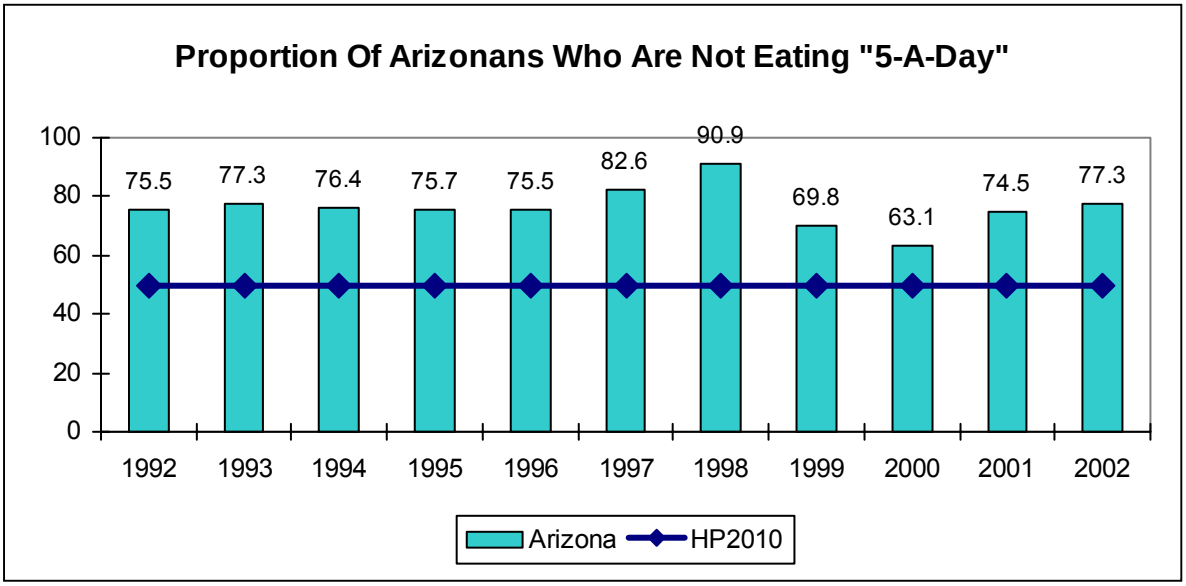


Source: Arizona BRFS Trends 1992-2002, www.cdc.gov/brfss.

9. 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 adults age 18 and older who participated in the Arizona BRFS (see Figure 6). During the 10-year period, the year 2002 had the lowest percent of adults who did not eat less than 5 servings of fruits and vegetables per day.

Figure 6. Proportion of Arizonans consuming less than 5 servings of fruits or vegetables per day, 1992-2002.

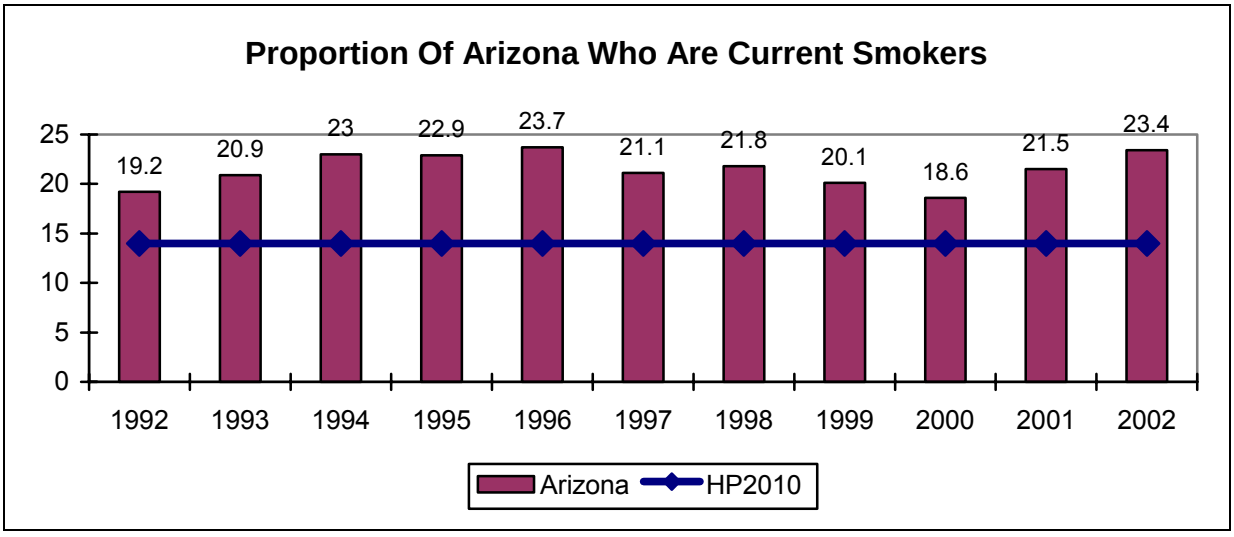


Source: Arizona BRFS Trends, 1992-2002, www.cdc.gov/brfss

10. Proportion of Arizonans Who are Current Smokers

This indicator is defined as self-reported current smokers by adults age 18 and older who participated in the Arizona BRFS. During the ten year period, the year 2000 had the lowest proportion of Arizonans who were current smokers (18.6). The two years that followed, the proportion of current smokers rose to 23.4. Figure 7 shows the trend during the ten year period.

Figure 7. Proportion of Arizonans Who Are Current Smokers, 1992-2002.

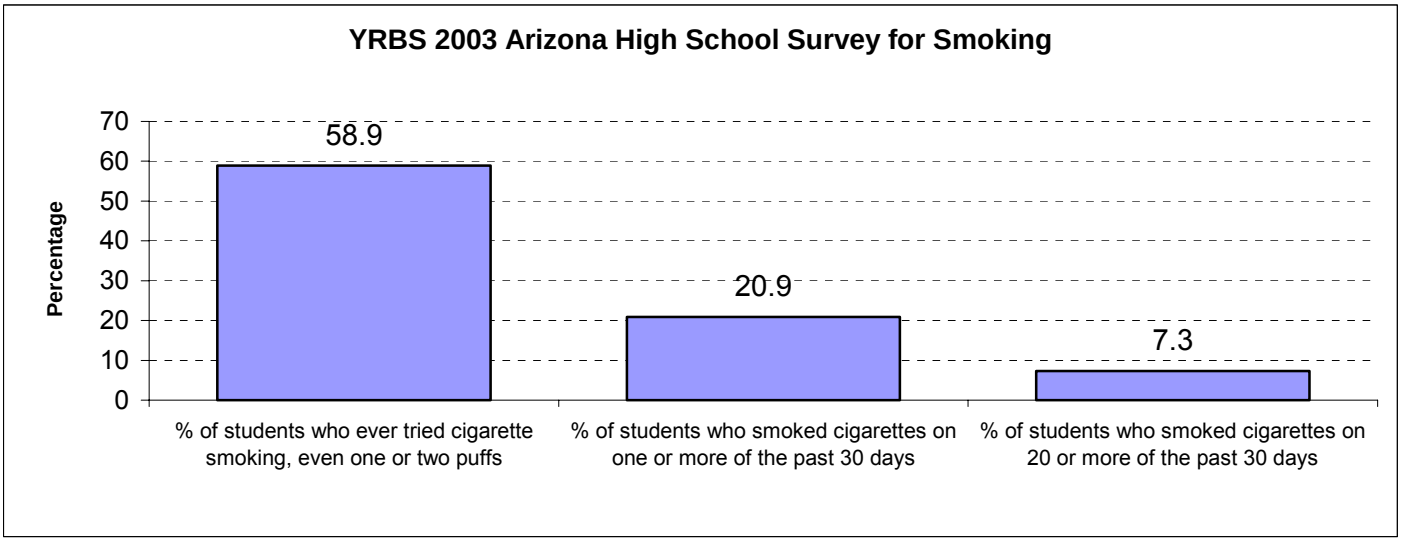


Source: Arizona BRFS Trends, 1992-2002, www.cdc.gov/brfss.

11. Proportion of Children Who are Current Smokers

This information is complied from students responding to the 2003 Youth Risk Behavioral Survey. The survey included students in grades 9th through 12. Figure 8 summarizes the self-reported data from all children who participated in the survey.

Figure 8. The Proportion of Children Who Smoke.



Source: YRBS, 2003. Arizona Department of Education, www.ade.state.az.us.

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

12. Percentage Of Diabetic Patients Receiving One Or More A1C Tests During The Last 12 Months

The numerator for this indicator is the number of diabetic patients who have had at least one A1C 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). A_1C testing is fundamental to assessing the underlying control of the disease. Measurement of A_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 4 presents the provider percentages of diabetic patients who received one or more A_1C tests during the past year.

Table 4. Percentage of Diabetic Patients Receiving One or More A1C Tests During the Last 12 Months by Reporting Organization.

Source	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	486 212	529 273	91.9% 77.7%
IHS - Phoenix Area	08/98-07/99 10/02 – 09/03	Not Presented 19,204	Not Presented 20,874	98.0% 92.0%
IHS -Tucson Area	7/02 – 6/03	1,028	1,155	89%
Medicare Fee for Service	2002	18,940	26,087	72.6%
Medicare HMO (7 groups)	2001 2002	Not Available	Not Available	88% 85%
VA - Phoenix Area	2000 2001 2002 2003	4244 5238 6085 7069	6017 7217 8597 9660	80.5% 72.6% 70.8% 73.2%
BRFS (N=252)	2002	Not Available	Not Available	78.8%

Notes:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS Phoenix Area – Responses were provided for the period 10/02-09/03, 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.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare Fee For Service - Figures represent annual exam. Data are currently obtained from claims.
- Medicare HMO – Figures represent annual exam. Summary HEDIS® data obtained from www.cms.gov.
- BRFS – Telephone survey collected in a calendar year.

13. 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 5 presents the provider percentages of diabetic patients who received at least one microalbuminuria test during the past year.

Table 5. Percentage of diabetic patients receiving at least one microalbuminuria test during the last 12 months by reporting organization.

Source	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	243 88	529 207	45.9% 42.5%
IHS - Phoenix Area	10/02-09/03	12,107	20,874	58.0%
IHS -Tucson Area	7/02 – 6/03	832	1,155	72%
Medicare Fee For Service	2002	Not Available	Not Available	Not Available
Medicare HMO	2002	Not Available	Not Available	Not Available
VA - Phoenix Area	2003	153	9660	1.6%

NOTES:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.

14. 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 (see Table 6). 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 6. Percent of Diabetic Patients with Eye Examination by Reporting Organization.

Sources	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	286 81	529 207	54.1% 39.1%
IHS - Phoenix Area	10/02-09/03	13,151	20,874	63.0%
IHS -Tucson Area	7/02 – 6/03	566	1,155	49%
Medicare Fee For Service	1/02 – 12/02	17,518	26,087	67.7%
Medicare HMO (7 groups)	2001 2002	Not Available	Not Available	63% 63%
VA - Phoenix Area	2000 2001 2002 2003	1647 1673 2347 2559	6017 7217 8597 9660	27.4% 23.2% 27.3% 26.5%
VA – Prescott Area	FY2003 FY2004	Not Available 26	Not Available 31	66% 84%
BRFS (N=252)	2002	Not Available	Not Available	72.4%

NOTES:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare Fee For Service - Figures represent biannual exam. Data are currently obtained from claims.
- Medicare HMO – Figures represent biannual exam. Summary HEDIS® data obtained from www.cms.gov.
- VA - Phoenix Area – Data is capture based on calendar year and CPT codes
- VA – Prescott Area – The information is based on fiscal year
- BRFS – Telephone survey collected in a calendar year.

15. 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 7 presents the provider percentages of diabetic patients with recorded foot examination during the past year.

Table 7. Percent of Diabetic Patients with Recorded Foot Examination.

Source	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	456 123	529 273	86.2% 45.1%
IHS - Phoenix Area	10/02-09/03	12,107	20,874	58.0%
IHS -Tucson Area	7/02 – 6/03	589	1,155	51%
Medicare Fee For Service	2002	Not Available	Not Available	Not Available
Medicare HMO	2002	Not Available	Not Available	Not Available
VA - Phoenix Area	2000 2001 2002 2003	1,363 1,417 1,344 1,386	6,017 7,217 8,597 9,660	22.7% 19.6% 15.6% 14.4%
VA – Prescott Area	FY2003 FY2004	Not Available 21	Not Available 30	71% 70%
BRFS (N=252)	2002	Not Available	Not Available	63.6%

NOTES:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS - Phoenix Area - Foot examination is gathered by chart audits.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare Fee for Service – Information not available.
- Medicare HMO – Information not available.
- VA - Phoenix Area – Data is collected based on calendar year, percent of patients seen in the podiatric clinic not associated with specific CPT code
- VA – Prescott Area – The information is based on fiscal year.
- BRFS – Telephone survey collected in a calendar year.

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

16. Hypertension

This indicator 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 130/80 during the last 12 months. Table 8 presents the provider percentages of diabetic patients with hypertension.

Table 8. Percent of Diabetic Patients with Hypertension by Reporting Organization.

Source	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	210 112	344 273	61.1% 41.0%
IHS - Phoenix Area	10/02-09/03	11,689	20,874	56.0%
IHS -Tucson Area	7/02 – 6/03	670	1,155	58%
Medicare Fee For Service	2002	Not Available	Not Available	Not Available
Medicare HMO	2002	Not Available	Not Available	Not Available
VA - Phoenix Area	2000 2001 2002 2003	2813 4733 5068 6131	6017 7217 8597 9660	46.8% 65.6% 59.0% 63.5%
VA - Prescott Area	FY2003	26	31	84%

NOTES:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS - Phoenix Area –Patients with blood pressure of 130/81 or greater.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare Fee for Service - Information not available.
- Medicare HMO - Information not available.
- VA - Phoenix Area – Current data was collected based on calendar year.
- VA – Prescott Area – The information is based on fiscal year.

17. Lipid Profile

Lipid profile 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 9. Percent of Diabetic Patients Who Had a Lipid Panel Within the Last Year by Reporting Organization.

Sources	Year of Collection	Patient Tested (Numerator)	Diabetic Patient (Denominator)	Percent
Community Health Centers	FY2003 FY2004	454 42	529 66	85.8% 63.6%
IHS - Phoenix Area	10/02-09/03	14,821	20,874	71.0%
IHS -Tucson Area	7/02 – 6/03	474	1,155	41%
Medicare Fee For Service	1/02 – 12/02	20,330	26,087	77.9%
Medicare HMO (7 groups)	2001 2002	Not Available	Not Available	89% 91%
VA - Phoenix Area	2000 2001 2002 2003	4,279 4,470 5,275 6,162	6,017 7,217 8,597 9,660	71.1% 61.9% 61.4% 63.8%
VA – Prescott Area	FY2003 FY2004	Not Available 22	Not Available 31	78% 71%

NOTES:

- Community Health Centers – Information reported from four of the Community Health Centers.
- IHS - Phoenix Area - 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.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare Fee For Service - Figures represent biannual exam. Data are currently obtained from claims.
- Medicare HMO – Figures represent biannual exam. Summary HEDIS® data obtained from www.cms.gov.
- VA - Phoenix Area – Current data was collected based on calendar year.
- VA – Prescott Area – The information is based on fiscal year. Based in full lipid profile in the prior 2 years.

18. Hospitalizations

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

Table 10a. Hospital Discharges for Diabetes-Related Discharge Diagnoses, Nonfederal Facilities Only, 1992-2002.

Year of Discharge	Diabetes Discharges (Number)	Diabetes Discharge Rate*	Average Length Stay (Days)	Total Charges	Deaths (Number)
1992	33,036	76.7	6.1	$402,768,934	653
1993	32,758	74.8	5.8	$429,237,924	645
1994	36,788	81.6	5.3	$493,820,743	767
1995	44,088	93.4	5.4	$669,148,220	810
1996	50,762	103.0	4.9	$775,551,399	898
1997	54,848	106.3	4.7	$881,891,382	946
1998	54,425	101.1	4.9	$925,712,245	1,006
1999	59,359	105.8	4.8	$1,065,316,017	1,046
2000	66,695	110.4	4.6	$1,337,609,106	993
2001	70,278	116.7	4.6	$1,486,475,577	1,040
2002	76,670	120.3	4.5	Not available	1,201

Source: ADHS Hospital Discharge Database, 1992-2002.
*Diabetes-related discharges per 1,000 discharges from all causes.

Table 10b. Hospital Discharges for Diabetes-Related Discharge Diagnoses from Federal Facilities for Selected Years.

Source	Year	Number of Discharges for Diabetes	Diabetes Discharge Rate	Average Length of Stay (Days)
VA Phoenix Area	2002	188	29.8	6.5
	2003	251	39.5	6.8
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.

19. New Cases of End Stage Renal Disease (ESRD) in persons with Diabetes

Based on the End Stage Renal Disease (ESRD) Network #15 Data System, Arizona had a total of 1,814 newly diagnosed chronic ESRD patients in 2002. Of those, 1,030 or 56.8% were age 65 or older.

Table 11. Number of End Stage Renal Disease

Patients with Diabetes Diagnosis	2000	2001	2002
ESRD Incidence	916	980	956
ESRD Dialysis Prevalence	2608	2782	2866
ESRD Deaths	622	680	778

20. Lower Extremity Amputation

This indicator consists of patients with diabetes 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 presents the hospital numbers of diabetic patients with lower extremity amputations.

Table 12. Number of Lower Extremity Amputations Among Hospitalized Diabetic Patients.

Source	**1999**	**2000**	**2001**	**2002**	**2003**
Hospital Discharge Database (HDDB)	824	1,176	1,126	1,201	Not Available
IHS	Not Available	Not Available	Not Available	Not Available	Not Available
VA - Phoenix Area	51	43	54	48	47

NOTES:

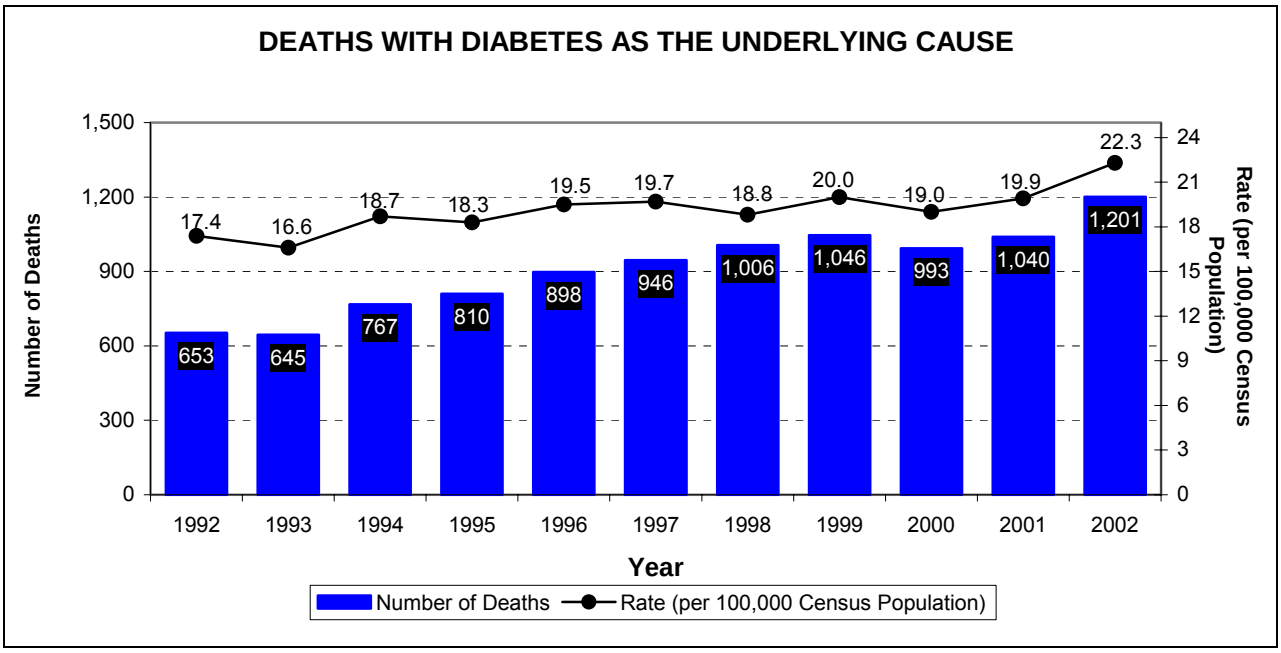
- Hospital Discharge Database - The HDDB data is for inpatient amputations from nonfederal facilities only.
- IHS - These data are not available. Some of these amputations occur in non-IHS facilities. In older American Indian adult male populations (Veterans), diabetes care (especially amputation) for 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

21. 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 9. Deaths in Arizona with the Underlying Cause of Death Listed as ICD-9 code 250.xx (Diabetes, 1992-2002*



Source: *Arizona Health Status and Vital Statistics, 1992-2002, ADHS.*

* Rates are per 100,000 population, age-adjusted to the US 2000 standard. These data include deaths among American Indians.

D. RESOURCES

22. Registries

The registries measure is defined as those managed care systems (HMOs, VA, IHS Area, CHC's) 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 summarizes the organizations with diabetes registry.

Table 13. Number of reporting organizations with diabetes registry.

Source	Yes/No
Community Health Centers	Yes
IHS - Phoenix Area	Yes
IHS - Tucson 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 proximate 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.

23. 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 summarizes the providers' number of diabetic patients who received self-management classes.

Table 14. Number of Diabetic Patients Who Received Self-Management Classes.

Source	Year of Collection	Diabetic Patients Completing Educational Programs	Total Number Of Diabetic Patients	Percent
Community Health Centers	FY2003 FY2004	460 161	711 207	64.7% 77.8%
IHS - Phoenix Area	10/02-09/03	16,490	20,879	79%
IHS -Tucson Area	7/02 – 6/03	139	1,155	12%
Medicare	2002	Not Available	Not Available	Not Available
VA - Phoenix Area	2000 2001 2002 2003	1,098 1,246 1,650 1,869	6,017 7,217 8,597 9,660	18.2% 17.3% 19.2% 19.3%

NOTES:

- Community Health Centers - 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 – During this period, 63% of the patients with diabetes received formal diet education, 55.8% received exercise information, and 72% 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.
- IHS Tucson Area - The numbers are based on the IHS Diabetes Audit 2003, there were a total of 3,960 clients in their registry, of those 1,155 were audited.
- Medicare - Not Available

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) A_1C Mean Value
ii) Elementary and Middle School-Aged Children Who Are Overweight
iii) Use of ACE inhibitors.
iv) Aspirin Therapy

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	A regular physical activity program (adapted for those patients with complications) is recommended for all diabetic patients capable of participating in such a program. The Centers for Disease Control currently recommends at least 30 minutes of physical activity for adults and at least 60 minutes of intermittent physical activity for children.
A1C (<7)	Test quarterly if treatment changes or not meeting goals; Test at least 2 times/year if stable.
Microalbuminuria	Test yearly if urinalysis is negative for protein
Dilated eye exam	Test yearly
Blood pressure = <130/80	Test each regular diabetes visit
Lipid profile	Test yearly (less frequent if normal)
Comprehensive foot exam	Test yearly (more often in patient with high-risk foot conditions)
Weight	At each visit
Smoking Cessation	Emphasize cessation and include cessation counseling and other forms of treatment as a routine component of diabetes care.
Aspirin Therapy	Enteric-coated aspirin (81-325 mg/day) as secondary prevention for CVD

Source: American Diabetes Association Clinical Practice Recommendations, *Diabetes Care 27* (Suppl 1): S15-S35, 2004.

REFERENCES

1. Arizona Department of Health Services. 2002 Chronic Disease Estimates, Arizona, http://www.hs.state.az.us/phs/phstats/meddir/. Estimates were calculated using a national sample.

2. U.S. Department of Health and Human Services. *Healthy People 2010*, Vol. I, 5:1-38, 1999.