

18. DIABETES

Goal

Reduce preventable disease and economic burden associated with diabetes and improve the quality of life for all persons who have, or are at risk for, diabetes.

Terminology

Diabetes Mellitus: A metabolic disease in which the body does not produce or properly use insulin, a hormone that is needed to convert sugar, starches, and other food into energy needed for daily life. Diabetes is characterized by high levels of blood glucose (sugar). Over time, unless properly treated, organ complications related to diabetes develop, including heart, nerve, foot, eye, and kidney damage and problems with pregnancy.

Types of diabetes:

Type 1 diabetes, formerly called insulin-dependent diabetes mellitus or juvenile-onset diabetes, is an autoimmune disease that results when the body's immune system attacks and destroys its own insulin-producing beta cells in the pancreas. People with type 1 diabetes need daily injections of insulin to live. Type 1 diabetes develops most often in children or young adults and accounts for about 5-10 percent of diagnosed diabetes in the United States. Although risk factors are not well defined for type 1 diabetes, autoimmune, genetic, and environmental factors are involved in its development.

Type 2 diabetes, formerly called non-insulin-dependent diabetes, mellitus (NIDDM) or adult-onset diabetes, is a disease that occurs when the body continues to make insulin but cannot use it effectively. This form of diabetes usually develops in adults over the age of 40. About 90 to 95 percent of people with diabetes have type 2. Approximately 80 percent are overweight. Type 2 diabetes is more common among people who are older, obese, have a family history of diabetes, have had gestational diabetes, and are of African American, Hispanic, American, Asian American, Pacific Islander, or Native American ethnicity.

Gestational diabetes is the recognition of hyperglycemia during pregnancy in an individual not previously known to have diabetes. Approximately 3 percent of all pregnancies are associated with gestational diabetes. This type usually disappears when the pregnancy is over, but women who have had gestational diabetes have a greater risk of developing type 2 diabetes later in their lives.

Complications: Harmful effects that may develop over a length of time in an individual with diabetes. These include damage to the eyes, kidneys, nerves, heart, lower extremities, and brain.

Diabetes Quality Improvement Project (DQIP): A project begun under the sponsorship of a coalition of public and private entities which formed an expert committee charged with recommending a set of diabetes-specific performance and outcome measures with which health plans, physicians, clinics and other health care providers could be compared for the purposes of accountability. The DQIP measure set was the result of this effort.

Health Plan Employer Data and Information Set (HEIDIS): Set of standard performance measures designed to ensure that purchasers and consumers can reliably compare the performance of Managed Care Organizations.

Hemoglobin A1c: (also called glycohemoglobin, glycosylated hemoglobin or glycated hemoglobin) A test that indicates blood glucose control over the previous 8-12 weeks.

National Diabetes Education Program: A federally sponsored initiative that involves public and private partners to improve the treatment and outcomes for people with diabetes, to promote early diagnosis, and ultimately to prevent the onset of diabetes.

Overview

As is the case nationally, diabetes is a serious, common, and costly disease in Kentucky. While it affects people of all ages, races and ethnicities, it disproportionately affects certain populations. It is a major clinical issue *as well as* a public health issue.

Diabetes is serious. It is widely recognized as one of the leading causes of death and disability in the U.S. According to the 1997 Kentucky Annual Vital Statistics Report, it is currently the sixth leading cause of death by disease in the Commonwealth. Mortality rates tend to be higher in African Americans compared to Whites. For 1997, diabetes was listed as the fifth leading cause of death by disease for African American males and the fourth leading cause of death by disease for African American females. Both types of diabetes are associated with long-term complications that threaten both quality and length of life. Nationally, diabetes is the leading cause of new cases of blindness in adults 20-74 years old, end-stage (chronic, irreversible) kidney disease, and lower extremity amputation not related to injury. Those with diabetes are also two to four times more likely to develop heart disease or stroke than people without diabetes. Kentucky Hospital Discharge Data from 1996 show that diabetes directly accounted for 1,492 hospitalizations due to diabetic ketoacidosis. The Renal Network, Inc. indicates that there were 348 new cases of end-stage renal disease due to diabetes in 1998. The Centers for Disease Control and Prevention's (CDC) Burden of Diabetes in Kentucky estimates 229 new cases of blindness in 1996. In addition, in 1996, Kentucky Hospital Discharge Data indicated there were 1,496 lower extremity amputations with 535 (35.7 percent) of

them performed on people with a primary diagnosis of diabetes. There were 5,234 discharges in 1996 with a primary diagnosis of diabetes, and the 535 discharges with lower extremity amputations accounted for 10.2 percent of the total.

Diabetes is common in Kentucky, the nation and the world. Nationally, there has been a sixfold increase in diabetes prevalence over the past four decades. In Kentucky, the 1996-98 Behavior Risk Factor Surveillance System (BRFSS) indicated that 148,161 adults in Kentucky, 5.0 percent of the adult population, had diagnosed diabetes. In addition, CDC estimates nationally that only two-thirds of the individuals with diabetes are diagnosed. Applying this estimate to Kentucky's population results in approximately 74,080 individuals having undiagnosed diabetes resulting in a total of 222,241 diagnosed and undiagnosed cases of diabetes. The prevalence of diabetes is expected to continue to rise nationally considering the aging of the U.S. population, the growth of minority populations most susceptible to type 2 diabetes, and the increasing prevalence of obesity among Americans. In addition, improved diagnosis and surveillance efforts are expected to increase the prevalence of diagnosed diabetes. There is no reason to believe that these trends will not be true for Kentucky as well. According to the 1996-98 BRFSS, an estimated 1,020,618 persons in Kentucky, or 35 percent of the adult population, are at increased risk of developing diabetes due to the risk factors of age, obesity, and sedentary lifestyle.

According to the BRFSS, from 1996-98, the estimated percentage of diagnosed diabetes cases was higher in African Americans compared to whites, and was disproportionately higher in African American females. Eastern Kentucky, or the Appalachian region, is the area of Kentucky with the highest prevalence of diabetes with 5.7 percent of the region's population estimated to have diabetes in 1996-98. According to the 1996-98 BRFSS, approximately 58,126 (12.0 percent) of individuals over 65 years of age have diagnosed diabetes, with Eastern Kentucky having the largest number of individuals with diabetes in the 65 and older population.

Diabetes is costly. The American Diabetes Association (ADA) estimates that the nation spent more than \$98 billion on diabetes in 1997 in direct and indirect costs. According to the CDC, the estimated cost of direct medical care and indirect cost due to loss of productivity due to diabetes in Kentucky was \$1.7 billion in 1996. Complications of diabetes generate a large cost. For instance, in 1994, the Health Care Financing Administration estimated the total cost for all services associated with end-stage renal disease to be approximately \$30,000 per patient per year. Applying this estimate to the 1,050 individuals with end-stage renal disease as a result of diabetes in Kentucky for 1998 would result in a cost of approximately \$31,500,000. This figure represents only one complication associated with diabetes.

The full cost of diabetes is difficult to determine. For families and communities, the loss of people's lives and abilities cannot be measured numerically.

Diabetes is controllable. Current scientific evidence demonstrates that much of the morbidity and mortality of diabetes can be eliminated by early detection, improved

delivery of care, and better education for diabetes self-management. A 1993 study called the Diabetes Control and Complications Trial conclusively showed that intensive glucose control delayed the onset and progression of eye disease, kidney disease and nerve disease by “a range of 35 to more than 70 percent.” In fact, it demonstrated that any sustained lowering of blood glucose helps, even if the person has a history of poor control. Results from a recent study in the United Kingdom indicate that intensive treatment to control glucose levels in people with type 2 diabetes significantly reduces the risk of complications more than diet therapy alone. Unfortunately, and for multiple reasons, this science is not being routinely applied in the Commonwealth or in the nation. A wide gap still exists between current and desired diabetes care and practices. Practices reported through the 1996-98 BRFSS indicate that among adults with diabetes in Kentucky surveyed:

- 86 percent reported seeing their health professional for diabetes one or more times in the past year;
- 64 percent reported receiving a dilated eye exam within the past year;
- 51 percent reported receiving a foot exam one or more times in the past year;
- 37 percent reported checking their blood for glucose at least once a day;
- 12 percent reported having their hemoglobin A1c level checked one or more times within the past year; and
- 20 percent reported having heard of a Hemoglobin A1c.

Many challenges exist in a quest to significantly prevent or delay diabetes and its complications here in Kentucky. One-to-one relationships between patients and their health care providers will not be enough to address the burden of this disease. To curtail the rising prevalence of diabetes, its risk factors, and its complications, a statewide population-based approach is needed. A variety of strategies must be implemented collaboratively as well as individually by various organizations, associations, and individuals to successfully impact this serious public health problem. In addition, culturally appropriate diabetes interventions are needed to address the disparities in disease and health outcomes for African American, Appalachian, and senior populations.

Among all the changes and challenges of the current health care environment, there are several unprecedented opportunities in the area of diabetes. For the first time, the DQIP has provided broad-based national consensus on a set of diabetes specific performance and outcome measures, blazing the trail to establish comparable baselines and set levels for improvement. HEDIS has incorporated six of these diabetes specific measures for the year 2000. The Peer Review Organization for Medicare Beneficiaries, the Medicaid Managed Care Partnerships, and other health plans will be collecting many of these measures for the first time, providing valuable information to establish accountability and quality improvement projects. In an unparalleled way, the private and public health care industry and policy makers are recognizing the magnitude of diabetes-related disease, costs, and opportunities for prevention. Diabetes is one of the priority areas for the provision of case management and the development of quality improvement initiatives. Policies are being adopted with the intention of improving coverage of equipment, supplies and diabetes self-management training.

Indeed, there are significant challenges in an effort to improve the lives of Kentuckians with or at risk for diabetes. However, we must focus our vision in a common direction and take advantage of these unprecedented opportunities to improve diabetes-related outcomes in Kentucky.

Progress Toward Year 2000 Objectives

Healthy Kentuckians 2000 listed three objectives related to diabetes as indicated below. In addition, one objective (17.4) was added at the mid-decade report to correspond to a similar objective that was added to the national document.

- 17.1 To reduce deaths due to diabetes to no more than 15.8 per 100,000.

Progress: Mortality due to diabetes is moving away from the Year 2000 target. The rate has increased from a baseline rate of 17.6/100,000 to a 1997 rate of 20/100,000 (age-adjusted to the Year 1970 population for comparability).

- 17.2 To reduce the most severe complications of diabetes by the following: end stage renal disease (ESRD) 6.6 percent, blindness 36 percent, lower extremity amputation 40 percent, perinatal mortality 60 percent, and major congenital malformations 50 percent.

Data are currently available to assess progress in the area of ESRD. The rate is moving away from the Year 2000 target. No data are available to assess blindness. Data are recently available regarding lower extremity amputations but they are not comparable with the earlier baseline estimate. Congenital malformation data were analyzed in 1993-95 but this analysis has not been repeated and is not comparable with the earlier estimate. Perinatal mortality data specific to diabetes are now potentially available through the Kentucky Birth Surveillance Registry (KBSR) but have not been analyzed.

- 17.3 To reduce the incidence of diabetes by 13 percent and the prevalence by 10 percent.

No data are available regarding incidence. Since data about prevalence were not available at the time *Healthy Kentuckians 2000* was written, an initial target was not listed. At the mid-decade point, diabetes prevalence was estimated utilizing the "Kentucky Health Interview and Examination Survey." This survey has not been repeated. Since 1994, estimates for prevalence have been derived from the BRFSS. Assessing progress is difficult due to the lack of comparability of the data; however, it is possible to assess the recent trend utilizing the BRFSS data. The 1994-96 BRFSS aggregate data indicated a prevalence of 4.1 percent of those over 18 years of age. In 1995-97 this number had increased to 4.5 percent, and in

1996-98 it increased again to 5.0 percent. It appears that the prevalence is increasing, as is the case nationally.

- 17.4 Increase to 75 percent the percent of individuals with diabetes having a dilated eye exam in the previous year.

Progress: The percent of individuals receiving eye exams appears to be moving toward the Year 2000 target. The mid-decade baseline estimate of 60 percent was derived from the 1993 Diabetes Prevalence Study. This study has not been repeated. Since 1994, the BRFSS has been utilized to determine this estimate. BRFSS aggregate data indicates that in 1994-96, 57 percent of those with diabetes over the age of 18 reported having a dilated eye exam in the previous year. In 1995-97, this number increased to 66 percent, and in 1996-98 increased again to 69 percent.

2010 Objectives

Data are age-adjusted to the year 2000 standard population.

18.1. (Developmental) Reduce the incidence of diabetes.

Potential Data Source: No Kentucky data source exists at this time.

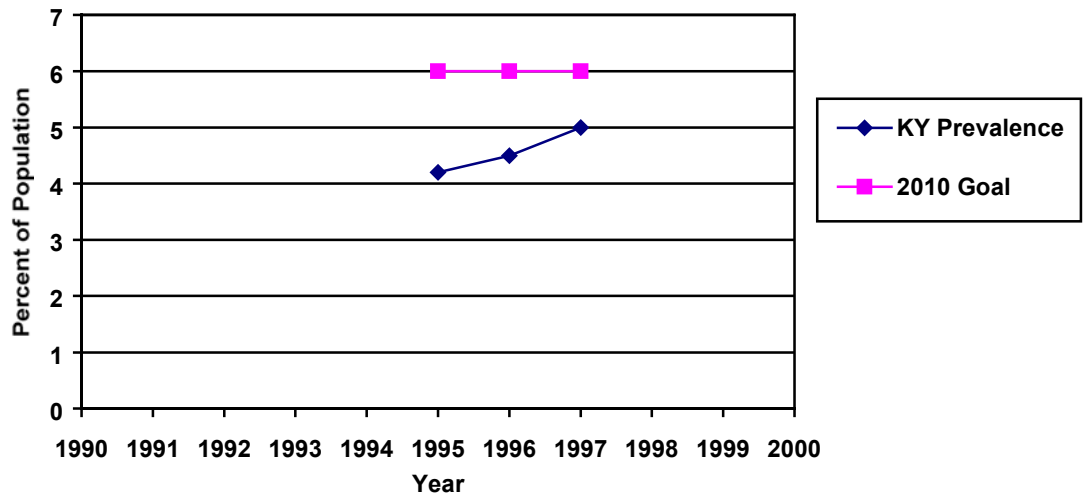
Implementation Strategy:

- Develop a data source for measuring incidence.
- The Department for Public Health's Diabetes Control Program (DCP) will implement the work plan specified in their Cooperative Agreement with CDC.
- Collaborate and participate with the Department's cardiovascular health grant staff, the tobacco control staff and the core health education staff, and their partners (American Heart Association, Department of Education, Kentucky Dietetic Association, etc.) to implement activities in the areas of nutrition, physical activity, and tobacco control.
- Stay informed about, and be prepared to assist Kentucky in implementing, the findings of the two diabetes prevention trials now in progress. The Diabetes Prevention Trial – 1 (DPT-1) is attempting to prevent the onset of type 1 diabetes. The Diabetes Prevention Trial – 2 (DPT-2) is attempting to prevent the onset of type 2 diabetes.

18.2 Decrease the rate at which the prevalence of diagnosed diabetes is climbing so that it reaches no more than 6 percent of the population 18 years and older.

Baseline: 1996-98 – 5.0 percent of those 18 years and older.

**Diabetes Prevalence, Age 18 and Older,
Kentucky, 1995-1998 (Three-year moving average)**



<u>Select Populations</u>	<u>1996-98</u>
African American	6.5%
American Indian/Alaska Native	DNA*
Asian/Pacific Islander	DNA
Hispanic	DNA
White	4.9%
Appalachian	5.7%
Male	5.0%
Female	5.0%
People aged 18 – 44	1.4%
People aged 45 – 54	5.9%
People aged 55 – 64	11.0%
People aged ≥ 65	12.0%

*DNA – Data Not Available

Target setting method: 4.6 percent increase. The prevalence of diagnosed diabetes has increased steadily over the last half of this century and is likely to continue to rise with the aging of the US population, the growth of minority populations most susceptible to type 2 diabetes, and the increasing prevalence of obesity among Americans. In Kentucky, the estimated prevalence of diabetes, according to the BRFSS, has increased an average of approximately 4.6 percent each year from 1994-98. If this trend continues, the prevalence of diagnosed diabetes is expected to be approximately 6 percent by 2009-11.

Data Source: Kentucky Behavioral Risk Factor Surveillance System

Implementation Strategy: See Objective 18.1.

18.3 (Developmental) Increase the proportion of persons with diabetes whose condition has been diagnosed.

Potential Data Source: No Kentucky data source exists at this time.

Implementation Strategy:

- Develop data source
- ADA will continue to implement awareness raising activities such as “Take the Test Know the Score,” Diabetes Alert, etc.
- The DCP and the KDN will implement the National Diabetes Education Program in Kentucky.

18.4 Slow the rise in the diabetes death rate (diabetes as a primary/underlying cause) to no more than 28 deaths per 100,000 persons.

Baseline: 25.5/100,000 in 1997. (Age-adjusted)

<u>Select Populations</u>	<u>1997</u>
African American	46.0/100,000
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	23.6/100,000
Appalachian	25.3/100,000
Non-Appalachian:	
Louisville	25.1/100,000
Central	21.6/100,000
Western	25.2/100,000
Northern	29.1/100,000
Male	27.6/100,000
Female	23.5/100,000
People aged 0 – 44	1.5/100,000
People aged 45 – 54	13.8/100,000
People aged 55 – 64	37.3/100,000
People aged 65 – 74	92.0/100,000
People aged ≥ 75	219.7/100,000

Target setting method: Limit the rise in diabetes death rate to 10 percent. During the 90’s the diabetes death rate has risen over 20 percent. A 10 percent rise would represent a significant slowing of the trend.

Data Source: Kentucky Vital Statistics, 1997. (Rates for age groups are age specific rates, all other rates are age-adjusted).

Implementation Strategy:

- The KDCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Collaborate and participate with the Department's cardiovascular health grant staff, the tobacco control staff and the core health education staff, and their partners (American Heart Association, Department of Education, Kentucky Dietetic Association, etc.) to implement activities in the areas of nutrition, physical activity, and tobacco control.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The Kentucky Diabetes Network (KDN) will implement the National Diabetes Education Program (NDEP), particularly the "Control Your Diabetes for Life Campaign."
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- ADA will promote campaigns such as "What To Know – Head to Toe;" materials such as "Take the Test Know the Score;" and programs such as the African American Program to raise awareness among the African American population.
- Hospitals, universities, DCP, local health departments, coalitions, professional associations, and diabetes product companies will promote and provide up to date diabetes professional education opportunities.
- Hospitals, physician offices, local health departments will provide individual and group self-management training to individuals with diabetes and their families.
- Diabetes quality improvement projects will be implemented by Medicaid Managed Care Partnerships, the Peer Review Organization for Medicare beneficiaries and private health plans consistent with the DQIP measures.

18.5 Slow the rise in deaths due to cardiovascular disease where diabetes is listed as either a supplemental cause of death or an existing condition to no more than 276 per 100,000 diabetic population.

Baseline: 265.4/100,000 diabetic population, 1997. (Age-adjusted)

<u>Select Populations</u>	<u>1997</u>
African American	459.3/100,000
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	252.1/100,000
Appalachian	210.9/100,000
Male	211.8/100,000
Female	302.4/100,000
People aged 18 – 44	52.5/100,000
People aged 45 – 54	146.7/100,000
People aged 55 – 64	320.6/100,000
People aged 65 - 74	786.1/100,000
People aged 75 +	2366.7/100,000

Target setting method: Limit rise in death rate for this objective to 5 percent.

Data Source: Kentucky Vital Statistics (death certificates), 1997. BRFSS, 1997 was used for estimated diabetes prevalence. Rates for age groups are age-specific rates, all other rates are age-adjusted.

Implementation Strategy: See Objective 18.4.

18.6 (Developmental) Reduce perinatal mortality in infants of mothers with diabetes.

Potential Data Source: These data will soon be available through vital statistics and the Kentucky Birth Surveillance Registry (KBSR).

Implementation Strategy:

- The Department for Public Health will continue to refine the KBSR.
- The KBSR staff and the DCP staff will collaborate on a potential diabetes-specific project for the next grant cycle of the KBSR
- The DCP has proposed a change to the birth certificate to differentiate pre-existing diabetes from gestational diabetes.
- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Staff will work with other department staff to develop protocols for appropriate screening guidelines, management when appropriate, pre-conceptual counseling, etc. to be used by local health departments.
- Staff will promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.

- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign.”
- Staff will establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- Local health departments, obstetricians, gynecologists, other physicians, and health professionals will provide pre-conceptual counseling, and prenatal care.
- Medicaid Managed Care Partnerships and other health plans will implement clinical quality improvement projects regarding prenatal care and birth outcomes.

18.7 Reduce the frequency of major congenital malformations in infants of mother’s with diabetes to no more than 25/1,000 births.

Baseline: 27.8 per 1,000 births, 1993-95.

Target setting method: 10 percent decrease.

Data Source: Kentucky Birth Registry

Implementation Strategy: See Objective 18.6.

18.8 (Developmental) Reduce the frequency of foot ulcers among persons with diabetes.

Potential Data Source: The BRFSS is adding a question to address this issue to the 2000 survey. A baseline and target will be set by mid-decade.

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign.”
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- ADA will promote campaigns such as “What To Know – Head to Toe;” materials such as “Take the Test Know the Score;” and programs such as the

African American Program to raise awareness among the African American population.

- Promotion of national campaigns and materials such as “Feet Can Last a Lifetime.”
- Diabetes quality improvement projects will be implemented by Medicaid Managed Care Partnerships, the Peer Review Organization for Medicare beneficiaries and private health plans consistent with the DQIP measures.

18.9 Reduce the frequency of lower extremity amputation to 5.4 per 1,000 persons with diabetes.

Baseline: 1996 - 7.3/1,000 persons over 18 years diagnosed with diabetes.

<u>Select Populations</u>	<u>1996</u>
African American	46.4/1,000
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	4.1/1,000
Appalachian	DNA
Male	9.1/1,000
Female	5.8/1,000
People aged 18 – 44	4.7/1,000
People aged 45 – 64	6.2/1,000
People aged 65 – 74	7.3/1,000
People aged \geq 75	13.2/1,000

Target setting method: 25 percent improvement

Data Source: Kentucky Hospital Discharge Data, 1996. BRFSS, 1996 was used for diabetes prevalence estimates.

Implementation Strategy: See Objective 18.8.

18.10 (Developmental) Reduce the frequency of blindness due to diabetes.

Potential Data Sources: BRFSS data

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.

- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign.”
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- ADA will promote campaigns such as “What you need to know – head to toe,” and “Don’t Lose Sight of Diabetes” during National Diabetes Month and throughout the year.
- The Optometric Association will promote Healthy Vision 2000.
- The American Academy of Ophthalmology will promote projects such as “The National Eye Care Project.”
- Diabetes quality improvement projects will be implemented by Medicaid Managed Care Partnerships, the Peer Review Organization for Medicare beneficiaries and private health plans consistent with the DQIP measures.
- Civic organizations such as the Lions Clubs will promote special projects such as the Lions Eye Health Program (LEHP) - an educational effort focusing on prevention of vision loss due to glaucoma and diabetes.

18.11 Decrease the incidence of ESRD due to diabetes requiring dialysis or transplantation to no more than 113.4 per 1,000,000 population.

Baseline: 119.4/1,000,000 persons with diabetes in 1998.

<u>Select Populations</u>	<u>1998</u>
African American	372.5/1,000,000
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	97.8/1,000,000
Appalachian	135.3/1,000,000
Male	10.4/1,000,000
Female	126.8/1,000,000
People aged 18 – 44	29.8/1,000,000
People aged 45 – 64	229.9/1,000,000
People aged 65 – 74	504.0/1,000,000
People aged ≥ 75	381.3/1,000,000

Target Setting Method: 5 percent decrease.

Data Source: Tri-State Renal Network, 1998.

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign.”
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- ADA will promote campaigns such as “What you need to know – head to toe,” during National Diabetes Month and throughout the year.
- Diabetes quality improvement projects will be implemented by Medicaid Managed Care Partnerships, the Peer Review Organization for Medicare beneficiaries and private health plans consistent with the DQIP measures.

18.12. (Developmental) Increase the proportion of patients with diabetes who annually obtain lipid assessment (total cholesterol, LDL, HDL, triglyceride).

Potential Data Source: Since this is a HEDIS and DQIP measure, health plans are a potential source for this data.

Implementation Strategy: See Objective 18.4.

18.13. Increase to 48 percent the proportion of persons with diabetes who have a glycosylated hemoglobin measurement at least once a year.

Baseline: 12 percent of persons 18 years and older with diabetes in 1996-98.

<u>Select Populations</u>	<u>1996-98</u>
African American	12.0%
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	12.0%
Appalachian	7.5%
Male	13.0%
Female	11.0%
People aged 18 – 44	28.0%
People aged 45 – 54	18.0%
People aged 55 – 64	8.4%
People aged ≥ 65	4.8%

Target setting method: 300 percent increase.

Data Source: BRFSS, 1996-98.

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign”.
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- Hospitals, universities, DCP, local health departments, coalitions, professional associations, and diabetes product companies will promote and provide up-to-date diabetes professional education opportunities.
- Hospitals, physician offices, local health departments will provide individual and group self-management training to individuals with diabetes and their families.
- Diabetes quality improvement projects will be implemented by Medicaid Managed Care Partnerships, the Peer Review Organization for Medicare beneficiaries and private health plans consistent with the DQIP measures.

18.14. (Developmental) Increase the proportion of persons with diabetes who have at least an annual measurement of urinary microalbumin.

Potential Data Source: Since this is a HEDIS and DQIP measure, health plans are a potential source for this data.

Implementation Strategy: See objective number 18.11.

18.15. Increase to 75 percent the proportion of persons with diabetes who have an annual dilated eye exam.

Baseline: 64 percent of persons 18 years and older in 1996-98.

Select Populations	1996-98
African American	74%
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	63%
Appalachian	58%
Male	63%
Female	65%
People aged 18 – 44	48%
People aged 45 – 54	64%
People aged 55 – 64	65%
People aged ≥ 65	69%

Target Setting Method: Better than best.

Data Sources: BRFSS, 1996-98. Public and private health plans also collect this data.

Implementation Strategy: See Objective 18.10.

18.16. Increase to 70 percent the proportion of persons with diabetes who have at least an annual foot exam.

Baseline: 51 percent of persons 18 years and older with diabetes in 1996-98.

Select Populations	1996-98
African American	67%
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	50%
Appalachian	51%
Male	54%
Female	50%
People aged 18 – 44	55%
People aged 45 – 54	61%
People aged 55 – 64	48%
People aged ≥ 65	49%

Target setting method: Based on *Healthy People 2010* Objectives.

Data Sources: BRFSS, 1996-98. Potential sources include public and private health plans.

Implementation Strategy: See Objective 18.8.

18.17. (Developmental) Increase the proportion of persons with diabetes over 40 years of age that take aspirin daily or every other day.

Potential Data Source: BRFSS, cardiovascular disease module.

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign.”
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- Hospitals, universities, DCP, local health departments, coalitions, professional associations, and diabetes product companies will promote and provide up to date diabetes professional education opportunities.
- Hospitals, physician offices, local health departments will provide individual and group self-management training to individuals with diabetes and their families.

18.18 Increase to 45 percent the proportion of persons with diabetes who perform self-blood glucose monitoring at least daily.

Baseline: 37 percent of persons with diabetes 18 years and older in 1996-98.

Select Populations	1996-98
African American	35%
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	38%
Appalachian	39%
Male	33%
Female	41%
People aged 18 – 44	43%
People aged 45 – 54	42%
People aged 55 – 64	41%
People aged ≥ 65	30%

Target Setting Method: Based on *Healthy People 2010* Objectives.

Data Source: BRFSS, 1996-98.

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Promote the establishment and maintenance of local diabetes coalitions, diabetes support groups, and diabetes self-management programs throughout the state.
- The KDN will implement the NDEP in Kentucky, particularly the “Control Your Diabetes for Life Campaign”.
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- Hospitals, physician offices, local health departments will provide individual and group self-management training to individuals with diabetes and their families.

18.19. (Developmental) Increase the proportion of persons with diabetes who have received formal diabetes self-management training.

Potential Data Source: The BRFSS Diabetes Module will include a question regarding this issue beginning with the 2000 survey. A baseline and a target will be set by mid-decade.

Implementation Strategy:

- Hospitals, universities, DCP, local health departments, coalitions, professional associations, and diabetes product companies will promote and provide up to date diabetes professional education opportunities.
- The ADA will continue its Recognition Programs.
- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Promote the establishment and maintenance of diabetes self-management training programs throughout the state.
- KDN will address this issue in strategic planning efforts.

18.20. Increase to 80 percent the proportion of persons with diabetes who receive an annual flu vaccination.

Baseline: 52 percent of those 18 years of age and older in 1997.

Select Populations	1997
African American	49%
American Indian/Alaska Native	DNA
Asian/Pacific Islander	DNA
Hispanic	DNA
White	52%
Appalachian	50%
Male	47%
Female	57%
People aged 18 – 44	31%
People aged 45 – 54	39%
People aged 55 – 64	36%
People aged \geq 65	77%

Target Setting Method: Based on *Healthy People 2010* Objectives.

Data Source: BRFSS, 1997

Implementation Strategy:

- The DCP will implement the work plan specified in their Cooperative Agreement with the CDC.
- Implement CDC’s “Life-Preserver” campaign geared toward increasing the number of persons with diabetes who receive an annual flu vaccination.
- The KDN will implement the NDEP in Kentucky.
- Establish a resource/consultant group to guide KDN in its efforts to decrease disparities, particularly in the African American, Appalachian and senior populations.
- A diabetes-specific web page will be developed and maintained via the Kentucky Department for Public Health’s web site to disseminate diabetes related information for DCP, KDN and others.
- Local health departments, health plans, physician offices, hospitals and other health care organizations will promote and provide flu immunizations for people with diabetes in clinic as well as community settings.
- The Medicare Peer Review Organization will implement quality improvement projects to increase flu vaccinations in the senior population and potentially other public and private insurers.

Progress toward achieving the 2010 objectives will require a wide variety of interventions implemented by many organizations, associations and individuals. Collaboration and coordination among these entities are essential to maximize progress and use of resources. The KDN is one example of an effort to do this in Kentucky.

The KDN is a broad-based partnership of approximately 100 organizations, associations, and individuals which share a concern about the issue of diabetes in

Kentucky. The mission of KDN is to improve the treatment and outcomes for Kentuckians with diabetes, to promote early diagnosis, and ultimately prevent the onset of diabetes. The current workplan includes interventions utilizing the NDEP and other strategies. Workgroups have been established to address the needs and develop intervention strategies for the following audiences: the general population, individuals with diabetes, health professionals, and purchasers, payers, and policy makers with special emphasis on high risk populations particularly African Americans, Appalachia and seniors as applicable.

As their first effort, KDN will launch a statewide informational campaign to promote the messages about the seriousness of diabetes, ways to control the disease and the benefits of controlling diabetes for life. The KDN will also be instrumental in the development and implementation of a strategic plan for Kentucky.

References

“Diabetes: A Serious Public Health Problem, At-A-Glance 1999.” U.S. Department of Health and Human Services, Centers for Disease Control and Prevention

“Tracking the Burden of Diabetes in Kentucky, Update 1998” Department For Public Health

Kentucky Diabetes Fact Sheet, 1996-98. Kentucky Behavioral Risk Factor Surveillance System, composite data, 1996-98. KY Department for Public Health, Chronic Disease Branch

“Control Your Diabetes. For Life, Campaign Guide for Partners”. National Diabetes Education Program. National Institutes for Health and the Centers for Disease Control and Prevention

United States Department of Health and Human Services. *Healthy People 2010*. Draft for Public Comment, 1998.

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