

**State of Illinois**

Rod R. Blagojevich, Governor

**Department of Public Health**

Damon T. Arnold, M.D., M.P.H., Director



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# Illinois Arthritis Data Report

The Burden of Arthritis in Illinois in 2005

December 2007

# Acknowledgements

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The Illinois Department of Public Health extends its appreciation to those who contributed their time and expertise to this effort.

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To learn more about the Illinois Arthritis Initiative contact the Illinois Department of Public Health, Arthritis Program at 217-782-3300, TTY 800-547-0466.

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Rod R. Blagojevich, Governor  
Damon T. Arnold, M.D., M.P.H., Director

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • [www.idph.state.il.us](http://www.idph.state.il.us)

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Dear Colleague:

On behalf of the Illinois Department of Public Health, Office of Health Promotion, Division of Chronic Disease Prevention and Control, I am pleased to share with you the "Illinois Arthritis Data Report: The Burden of Arthritis in 2005."

Arthritis is the leading cause of disability and affects the quality of life of the person with this condition. It is estimated that there are 2.35 million Illinois adults with doctor diagnosed arthritis, who make up about 25 percent of the Illinois adult population. This report will be utilized to increase awareness of arthritis as a public health issue and provide direction for future program planning.

The Department's Arthritis Program and the combined efforts of many partners provided the information for this report. It represents a coordinated approach to assess arthritis and other related health outcomes, such as physical activity and obesity from the Illinois Behavioral Risk Factor Surveillance System for the year 2005.

The Department would like to extend its sincere appreciation to those who served on the planning committee and contributed time and expertise to the development of this report.

Sincerely,

A handwritten signature in black ink that reads "Damon T. Arnold, M.D., M.P.H." The signature is written in a cursive style.

Damon T. Arnold, M.D., M.P.H.  
Director

## **EXECUTIVE SUMMARY**

This *Illinois Arthritis Data Report* describes the burden of arthritis in Illinois in 2005 and is based on 2005 Illinois Behavioral Risk Factor Surveillance System (BRFSS) data unless otherwise noted.

Highlights of the report are as follows:

- More than 2.3 million adults have doctor-diagnosed arthritis (24.8 percent of the adult population), an increase from 2.2 million in 2002.
- Total knee replacements increased by more than 25 percent and hip replacements by more than 13 percent from 2003 to 2005.
- Arthritis is the leading cause of disability in the United States. Of all persons reporting doctor-diagnosed arthritis, 33.2 percent stated their activities were limited because of their joint symptoms.
- While arthritis can affect persons of all ages, including children, the prevalence increases with age. The prevalence of doctor-diagnosed arthritis ranges from 5.7 percent among persons aged 18 to 24 to 55.6 percent among persons aged 65 and older.
- Arthritis is more prevalent among those with less education and lower income levels.
- The prevalence of doctor-diagnosed arthritis is higher in rural areas than in urban areas.
- Among adults with doctor-diagnosed arthritis, 35.1 percent are obese compared to 24.3 percent of all adults.
- There is a tremendous economic burden of arthritis. The Centers for Disease Control and Prevention (CDC) has estimated the direct cost of arthritis in Illinois to be \$1.7 billion and the indirect cost to be \$1 billion.
- Although evidence-based self-management programs exist, few adults report taking a class to help manage their arthritis or joint symptoms.

Much work needs to be done to increase awareness among persons with chronic joint symptoms about the importance of early diagnosis and appropriate management, to educate and encourage persons with joint symptoms to participate in physical activity and maintain an ideal weight, and to educate providers about the availability of self-management classes and encourage referral. The Illinois Arthritis Initiative continues to address these and other goals to reduce the burden of arthritis in Illinois.

### **The Illinois Arthritis Initiative**

The mission of the Illinois Arthritis Initiative is to improve the quality of life for Illinoisans affected by arthritis. The Illinois Arthritis Initiative Partnership consists of more than 80 members representing more than 60 agencies and organizations. The partnership provides leadership for overall program coordination and implementation and meets twice yearly. In addition, four work groups (Surveillance and Data, Public Education, Professional Development, and Public Policy and Infrastructure) address specific arthritis-related issues.

### **Purpose of This Report**

This is the third comprehensive *Illinois Arthritis Data Report* to describe the burden of arthritis in the state. The burden of arthritis includes economic and social factors, such as costs of health care and time lost from work due to arthritis, and decreased quality of life and activity limitations. Findings from this report will be used to plan future self-management and public

education efforts. Funding for this project was made possible by a cooperative agreement between the CDC and the Illinois Department of Public Health.

## ARTHRITIS OVERVIEW

### What is Arthritis?

Arthritis encompasses more than 120 rheumatic diseases and conditions affecting joints, the surrounding tissues and other connective tissues. It may cause pain, stiffness and swelling, not just in joints but also in other supporting structures of the body, such as muscles, tendons, ligaments and bones. Some rheumatic diseases also are autoimmune disorders and affect other parts of the body, including internal organs.

Early diagnosis and treatment is the key to successful management of arthritis, and knowing the risk factors (characteristics or attributes that increase a person's risk for developing a disease or condition), helps to better identify populations most at risk. Risk factors can be non-modifiable or modifiable.

### Risk Factors

**Non-Modifiable risk factors** (those that cannot be prevented or changed)

- **Age** -- The risk of arthritis increases with age.
- **Gender** -- Sixty percent of all people with arthritis are women. Gout is more common in men.
- **Genetic Predisposition** – Family history of some types of arthritis increases risk.

**Modifiable risk factors** (those that can be prevented or changed by an individual)

- Obesity
- Joint injury
- Infections, such as Lyme disease
- Certain occupations that require repetitive joint activities, like kneeling or stooping.

### Types of Arthritis

The following six diseases are the focus of the Illinois Arthritis Initiative's *Illinois Arthritis Action Plan*. Estimates cited are from "Estimates of the Prevalence of Arthritis and Selected Musculoskeletal Disorders" (*Arthritis and Rheumatism*, 1998. 41(5):778-99).

**Osteoarthritis (OA)**, a type of degenerative joint disease, is the most common type of arthritis and affects an estimated 20.7 million adults in the United States. It impacts cartilage (the tissue that cushions the ends of bones within joints) and adjacent bone and muscle, and can lead to pain, limited motion, deformity and loss of function of the joint. In its most severe form, untreated OA can result in severe joint damage and disability.

**Rheumatoid arthritis (RA)** is a disease in which the body's own immune system targets its own tissue as an enemy, leading to inflammation of the synovium (lining of the joint) that results in pain, swelling and stiffness. This inflammation can lead to destruction of cartilage, bone, ligaments and tendons that can result in loss of motion and function of a joint. Inflammation most often affects joints of the hands and feet, but can develop in body organs as well. It tends to occur on both sides of the body, which aids in the specific diagnosis of rheumatoid arthritis.

Other symptoms include fatigue, fever and general feeling unwell. Less common than OA, RA affects an estimated 2.1 million persons in the United States. (1 percent).

***Fibromyalgia*** is a chronic syndrome that causes pain and stiffness throughout muscles and soft tissues. Widespread pain and localized tender points occur in the muscles and tendons, especially those of the neck, spine, elbows, shoulders and hips. Other common symptoms include headaches, fatigue, irritable bowel syndrome and sleep disturbance. Fibromyalgia affects approximately 2 percent of the U.S. population.

***Lupus (Systemic Lupus Erythematosus or SLE)*** is a chronic, inflammatory, multi-system disorder of the immune system. In SLE, the body develops antibodies that react against the person's own tissues. Symptoms of SLE can include fatigue, pain and stiffness in joints, fever, skin rash appearing in areas exposed to sun, sores in the mouth and nose, kidney inflammation, pleurisy (caused by inflammation of the lining of the lungs and/or heart), and nervous system disorders including seizures, mental disorders and strokes. It usually develops in young women of childbearing age, but many men and children also are affected. African Americans and Hispanics have a higher frequency of this disease. There also may be a hereditary component.

***Gout*** is a type of arthritis that causes sudden, severe attacks of pain, swelling, redness, warmth and tenderness in the joints. Gout results from deposits of needle-like crystals of uric acid (a byproduct of the breakdown of waste products in the body) in connective tissue, joint spaces or both. These deposits lead to inflammatory arthritis that causes swelling, redness, heat, pain and stiffness in the joints. It usually affects the joint of the big toe, but can occur in feet, ankles, knees, hands and wrists. The first symptoms of gout often occur in the middle of the night or upon rising in the morning. Wearing shoes, moving the joint or standing may be difficult and painful.

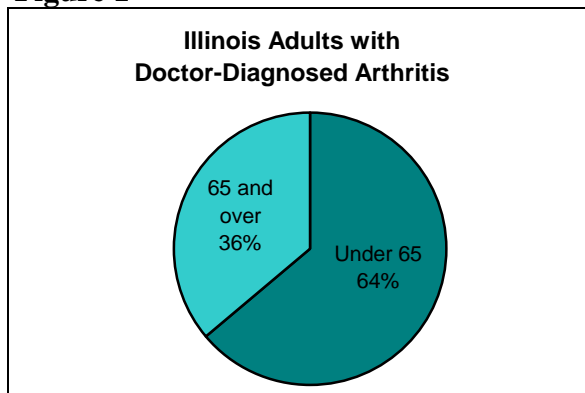
***Juvenile Arthritis*** is arthritis that causes joint inflammation and stiffness for more than six weeks in a child 16 years of age or younger. Children can develop almost all types of arthritis that affect adults. Juvenile rheumatoid arthritis is the most common type of arthritis in children.



## Arthritis Myths

The burden of arthritis for Illinois, as well as for the nation, is compounded by prevailing myths about the disease. It has long been recognized that myths about arthritis hinder people from seeking early diagnosis, treatment and appropriate management.

**Figure 1**



Source: 2005 IL BRFSS

**MYTH:**

*“Arthritis is an old person’s disease.”*

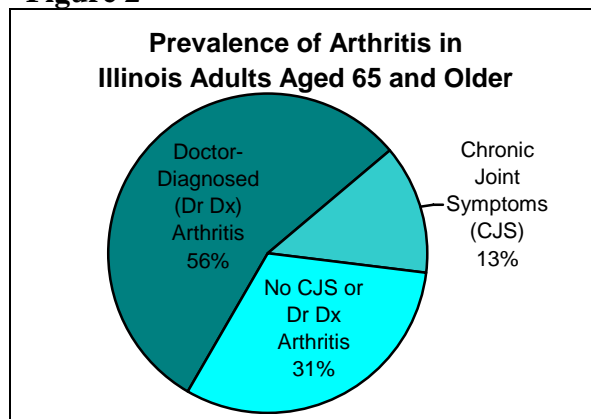
**FACT:** People of all ages have arthritis. Although the prevalence of arthritis increases as people age, in Illinois, 64 percent of adults with doctor-diagnosed arthritis are **younger than** age 65 (Figure 1). In addition, arthritis also affects many children.

**MYTH:**

*“Arthritis is just a normal part of aging.”*

**FACT:** In Illinois, 31.3 percent of those ages 65 and older have no apparent joint symptoms (Figure 2).

**Figure 2**



Source: 2005 IL BRFSS

**MYTH:** *“There is nothing I can do for arthritis.”*

**FACT:** Research shows that early diagnosis and appropriate management can help reduce pain, improve function and often prevent further joint damage associated with many types of arthritis. In fact, one intervention, the Arthritis Foundation Self-Help Program, has been shown to reduce pain by 20 percent and physician visits by 40 percent. (*Archives of Internal Medicine*, 158(10):1245-9)

**MYTH:** *“Exercise is not good for people with arthritis.”*

**FACT:** Recent studies have shown that moderate physical activity among persons with arthritis is associated with improvement in function and decreased disability (*Arthritis Care and Research* (2005) 53:879-885). More than half (52.6 percent) of the people with arthritis or chronic joint symptoms reported that a doctor or a health care professional suggested that they perform physical activity or exercise.

## ARTHRITIS PREVALENCE

### Behavioral Risk Factor Surveillance System (BRFSS)

Currently, the BRFSS provides arthritis prevalence rates within specific populations and allows comparison of data related to quality of life for persons with and without arthritis. It also provides measures of various health behaviors, such as exercise and weight control, having the potential to prevent or hinder the progress of some forms of arthritis.

BRFSS data have enabled the IAI to:

- estimate arthritis prevalence rates on state and county levels;
- compare arthritis prevalence among counties and demographic groups to target interventions more appropriately;
- compare quality of life measures among persons with doctor-diagnosed arthritis, and those without arthritis;
- document health behaviors that might slow the progression of arthritis; and
- reach groups at highest risk with self-management and public education interventions.

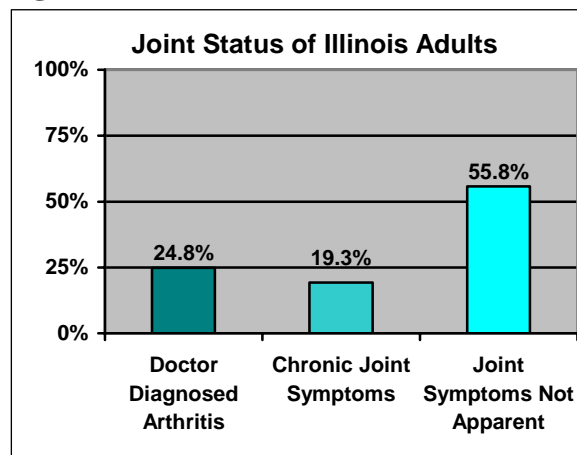
### Burden of Arthritis in the United States

An estimated 46.4 million adults in the United States (21.6 percent or one in five) reported being told by a doctor that they have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia, and 8.3 percent (17.4 million) had arthritis-attributable activity limitations. It also is estimated that 67 million adults in the United States will be affected by arthritis by 2030. *MMWR* 2006; 55(40):1089-1092. [Data Source: 2003–2005 NHIS]

### Burden of Arthritis in Illinois

In Illinois, more than 2.3 million adults have doctor-diagnosed arthritis (24.8 percent of the adult population). (Figure 3)

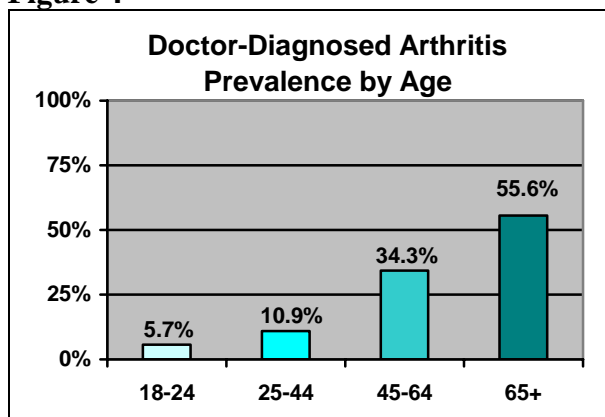
**Figure 3**



### By Age

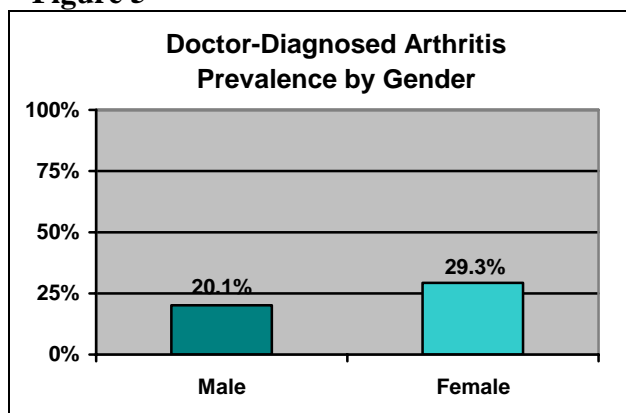
While arthritis can affect persons of all ages, the prevalence increases with age. In Illinois, the prevalence of doctor-diagnosed arthritis ranges from 5.7 percent among persons aged 18 to 24 to 55.6 percent among persons aged 65 and older. (Figure 4)

**Figure 4**



Source: 2005 IL BRFSS

**Figure 5**



Source: 2005 IL BRFSS

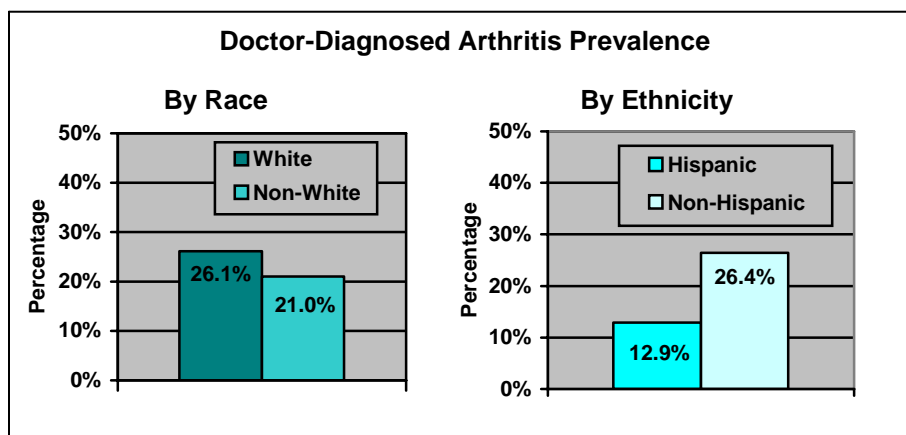
### By Gender

More females (29.3 percent) have doctor-diagnosed arthritis than males (20.1 percent) in Illinois. (Figure 5)

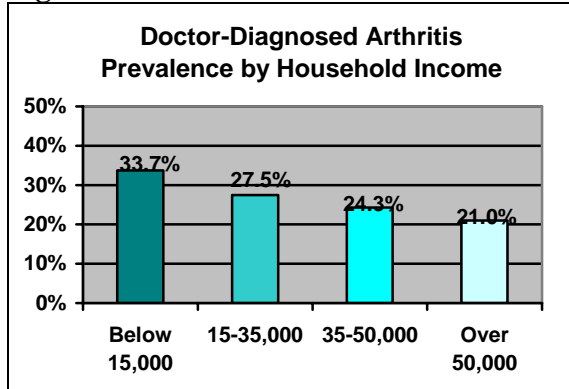
### By Race/Ethnicity

Arthritis affects all racial groups. The prevalence of doctor-diagnosed arthritis among whites in Illinois is 26.1 while the prevalence among non-whites is 21.0 percent. The prevalence of doctor-diagnosed arthritis among Hispanics was lower at 12.9 percent than among non-Hispanics at 26.4 percent. However, these data were not age adjusted. (Figure 6)

**Figure 6**



Source: 2005 IL BRFSS

**Figure 7**

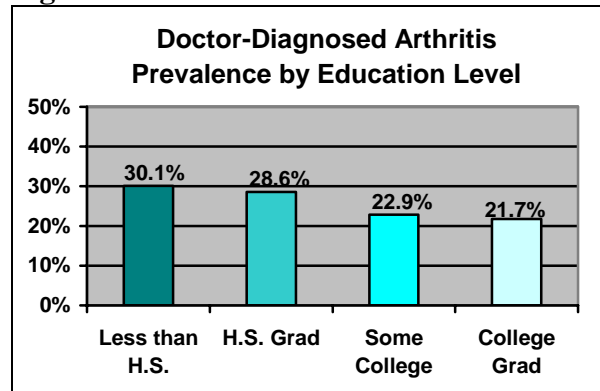
Source: 2005 IL BRFSS

**By Education**

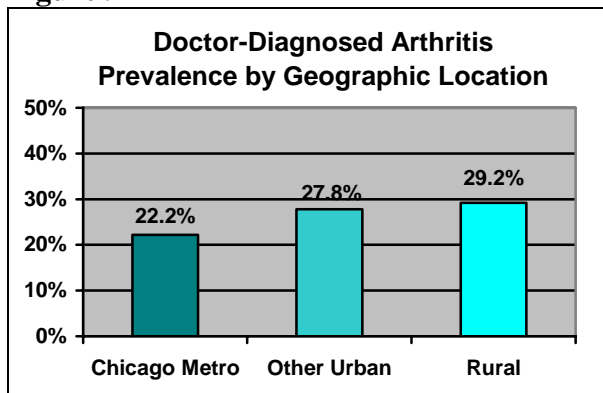
Doctor-diagnosed arthritis is highest among those with the least amount of education. In Illinois, the prevalence is 30.1 percent among those with less than a high school education and decreases to 21.7 percent among those with at least some college education (Figure 8).

**By Household Income**

The prevalence of doctor-diagnosed arthritis is higher among low-income groups. In Illinois, those with less than \$15,000 per year household income have the highest prevalence rate at 33.7 percent compared to only 21 percent in the above \$50,000 per year income level (Figure 7).

**Figure 8**

Source: 2005 IL BRFSS

**Figure 9**

Source: 2005 IL BRFSS

**By Geographic Location**

The prevalence of doctor-diagnosed arthritis is higher in rural areas than urban areas. Figure 9 shows that the prevalence is 22.2 percent among metropolitan Chicago metropolitan residents compared to 27.8 percent among urban residents and 29.2 percent among rural residents (Figure 9).

## THE ECONOMIC BURDEN OF ARTHRITIS

There is also a tremendous economic burden of arthritis. CDC has estimated the direct and indirect costs associated with arthritis both nationally and on a state level. Direct costs are medical care costs and indirect costs are lost earnings due to inability to work attributable to arthritis and other rheumatic conditions. The following chart shows national and Illinois direct and indirect costs.

**Direct and Indirect Cost of Arthritis**

	<b>Direct</b>	<b>Indirect</b>	<b>Total</b>
<b>National</b>	\$81 Billion	\$47 Billion	\$128 Billion
<b>State</b>	\$1.7 Billion	\$1 Billion	\$2.7 Billion

**Source:** National and State Medical Expenditures and Lost Earnings Attributable to Arthritis and Other Rheumatic Conditions — United States, 2003. MMWR 56(01); 4-7.

### Hospital Discharge Data

Most of the impact of arthritis occurs outside of the hospital. People with arthritis have problems with their quality of life (pain and inability to do pleasurable activities), as well as lost income and productivity (absenteeism and disability). Nevertheless, these data demonstrate considerable hospital costs as well. In 2005, arthritis lead to more than \$1.5 billion dollars in direct hospital costs for citizens in Illinois. Most of these costs were in patients with osteoarthritis who underwent total knee or hip replacement surgeries. This is noteworthy because weight loss and exercise can help prevent osteoarthritis and can improve the quality of life in people who have osteoarthritis. Thus, putting resources into measures that may help prevent future joint replacement surgeries could reduce future hospital costs. (See Appendix 1).

### HEALTHY PEOPLE 2010 ARTHRITIS AND RELATED OBJECTIVES

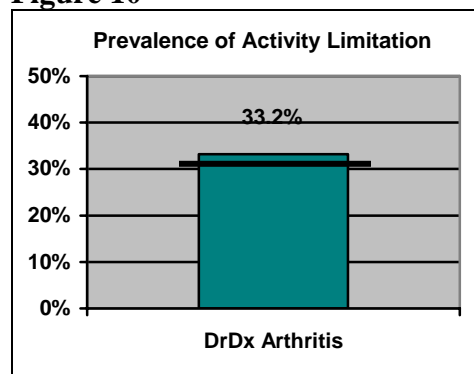
As outlined in the *National Arthritis Action Plan*, a goal of the Illinois Arthritis Initiative is to strive to achieve the arthritis-related objectives included in *Healthy People 2010*. These objectives allow us to measure successes in improving health and quality of life.

**Objective 2-2 Reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity due to arthritis or joint symptoms. (Healthy People 2010 target, represented by the thick black line, is 33 percent.)**

### Activity Limitation

Of all persons reporting doctor-diagnosed arthritis, 33.2 percent stated their usual activities were limited because of their arthritis or joint symptoms. The bold line represents the Healthy People 2010 goal of 33 percent (Figure 10).

**Figure 10**



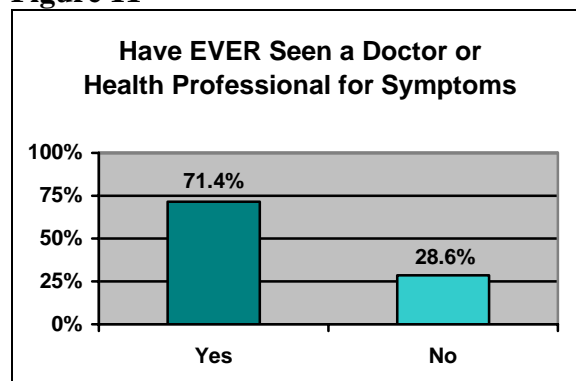
Source: 2005 IL BRFSS

**Objective 2-7 Increase the proportion of adults with chronic joint symptoms who have seen a health care provider for their symptoms**

### Ever Seen a Health Professional for Symptoms

Of those with chronic joint symptoms occurring during the past 30 days that began more than three months ago, 71.4 percent reported that they had seen a health professional for their symptoms.

**Figure 11**



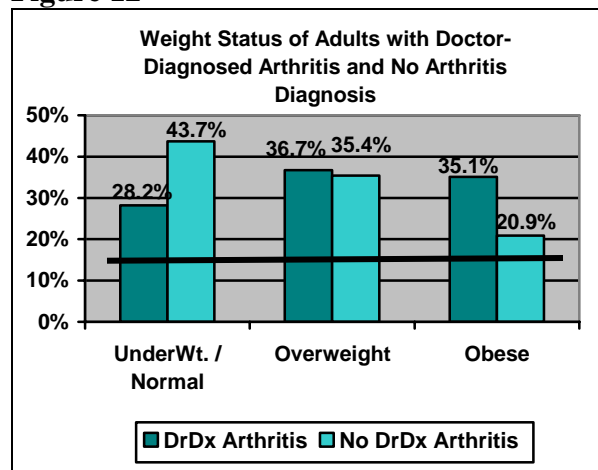
Source: 2005 IL BRFSS

**Objective 19-2 Reduce the proportion of adults who are obese.**  
(Healthy People 2010 target, represented by a thick black line, is 15 percent.)

### Obesity

Among all Illinois adults, 24.3 percent were obese (had a body mass index of 30 or greater). Among those with doctor-diagnosed arthritis, 35.1 percent were obese (Figure 12).

**Figure 12**



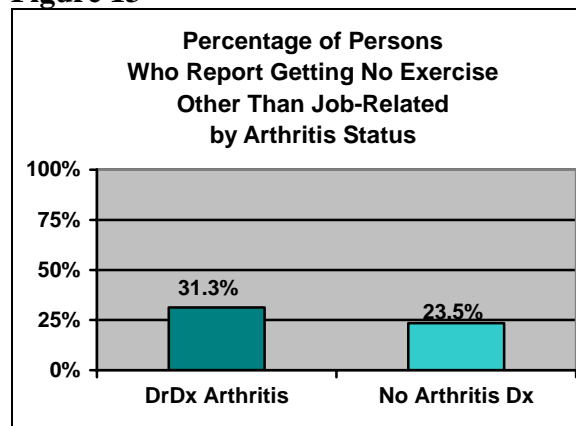
Source: 2005 IL BRFSS

**Objective 22-1 Reduce the proportion of adults who engage in no leisure-time physical activity.**

**Physical Activity**

Physical activity has been shown to help reduce arthritis pain and alleviate depression and anxiety among persons with arthritis. Nearly a third (31.3 percent) of people with doctor-diagnosed arthritis reported not getting any exercise other than their regular job compared to 23.5 percent of those with no arthritis diagnosis. (Figure 13).

**Figure 13**



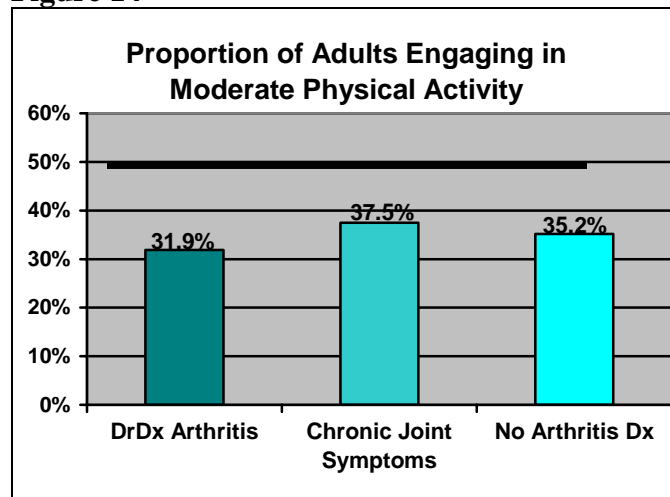
Source: 2005 IL BRFSS

**Objective 22-2 Increase the proportion of adults who engage in moderate physical activity for at least 30 minutes per day five or more days per week or vigorous physical activity for at least 20 minutes per day three or more days per week. (Healthy People 2010 target, represented by the thick black line, is 50 percent.)**

Approximately 35.2 percent of Illinois adults with no apparent arthritis meet or exceed the Healthy People 2010 standard for moderate physical activity compared to 37.5 percent of Illinois adults with chronic joint symptoms and 31.9 percent of those with doctor-diagnosed arthritis (Figure 14). The Healthy People 2010 goal is for at least half of all adults to engage regularly in moderate physical activity for at least 30 minutes per day.

Only 52.6 percent reported a doctor had ever suggested exercise for arthritis symptoms.

**Figure 14**

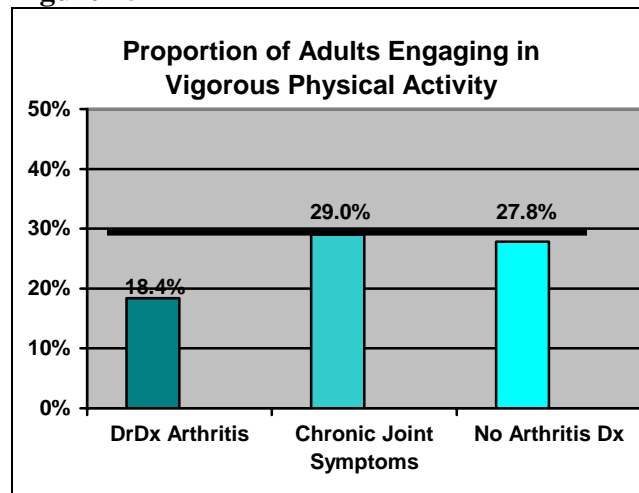


Source: 2005 IL BRFSS

**Objective 22-3 Increase the proportion of adults who engage in vigorous physical activity that promotes the development and maintenance of cardio respiratory fitness three or more times per week for 20 minutes or more per occasion. (The Healthy People 2010 target, represented by the thick black line, is 30 percent.)**

Among Illinois adults without no apparent arthritis, 27.8 percent reported engaging in vigorous activity at least three times a week for at least 20 minutes each time compared to 18.4 percent of adults with doctor-diagnosed arthritis and 29 percent of persons with chronic joint symptoms without diagnosis.

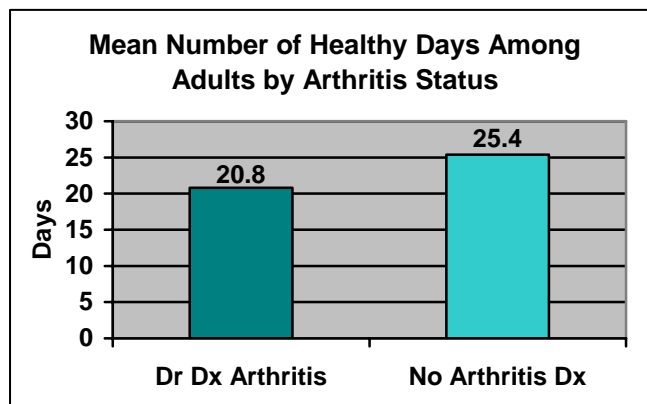
**Figure 15**



Source: 2005 IL BRFSS

### QUALITY OF LIFE

Persons with arthritis report having a lower quality of life as measured by self-reported number of healthy days during the past month. Persons with doctor-diagnosed arthritis had an average of 20.8 healthy days compared to 25.4 healthy days reported by persons without doctor-diagnosed arthritis.



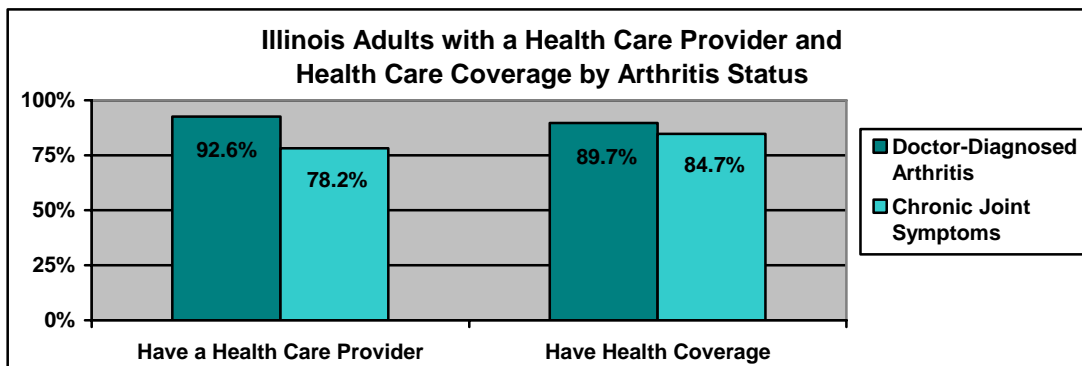
Source: 2005 IL BRFSS



## ARTHRITIS AND ACCESS TO HEALTH CARE

Of those Illinois adults with doctor-diagnosed arthritis, about 92.6 percent (2.2 million people) have a person they think of as their usual health care provider. Of all persons with chronic joint symptoms without arthritis diagnosis, only about 78.2 percent (1.4 million people) have a person they think of as their usual health care provider (Figure 16).

**Figure 16**



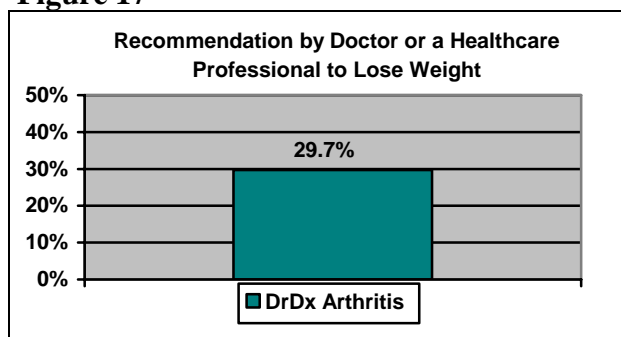
An estimated 2.1 million Illinois adults with doctor-diagnosed arthritis (89.7 percent) have health care coverage, including health insurance, pre-paid plans such as HMOs, or government plans such as Medicaid or Medicare, while 1.5 million Illinois adults with chronic joint symptoms (84.7 percent) have health care coverage. Not surprisingly, the rate of health care coverage is highest among persons with higher income and education levels (Figure 14).

## ARTHRITIS MANAGEMENT

### Weight Loss

Excess body weight increases the pressure and stress on weight bearing joints. There is an association between obesity and some types of arthritis, including osteoarthritis and gout. Thus, losing excess weight will help reduce joint symptoms and possible damage. Exercise has been shown to help reduce arthritis pain and alleviate depression and anxiety among persons with arthritis. However, health care providers often do not advise their patients in these preventive measures. About one-third of Illinois adults with doctor-diagnosed arthritis reported a doctor or a health care professional suggested for them to lose weight.

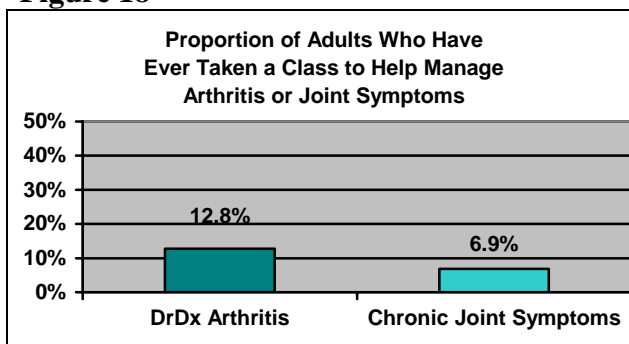
**Figure 17**



## Self-Management

Self-management is an important aspect of successfully dealing with arthritis pain and disability. Self-management classes help patients learn about their disease and learn to take part in their own care. The Arthritis Foundation Self-Help Program helps persons with arthritis learn about their joint protection, the importance of nutrition and physical activity, how to take medications properly, and how to better communicate with their health care providers through group discussion and easy-to-understand class materials. However, only 12.8 percent of adults with doctor diagnosed arthritis and 6.9 percent with chronic joint symptoms have ever taken an educational course to learn how to manage their joint symptoms (Figure 18).

**Figure 18**



## ARTHRITIS AND DISABILITY

Arthritis is one of the leading causes of disability (see Appendix 4 for definition of disability) in the nation (McNeil, J. M., & Binette, J., 2001), Prevalence of disabilities and associated health conditions among adults: United States, 1999, *MMWR*, 50, 120-4). Arthritis includes more than 120 rheumatic diseases and conditions affecting the joints, the surrounding tissues and other connective tissues. Common symptoms of arthritis include pain, stiffness and swelling, not just in joints but also in other supporting structures of the body, such as muscles, tendons, ligaments and bones. Because of these symptoms, many adults with arthritis experience difficulty with conducting daily activities and need help from others. In fact, 40 percent of Illinois adults with arthritis reported limitations in daily activities. (Illinois Department of Public Health, 2005, *Illinois Arthritis Data Report: The burden of Arthritis in Illinois in 2002*)

**Figure 19**

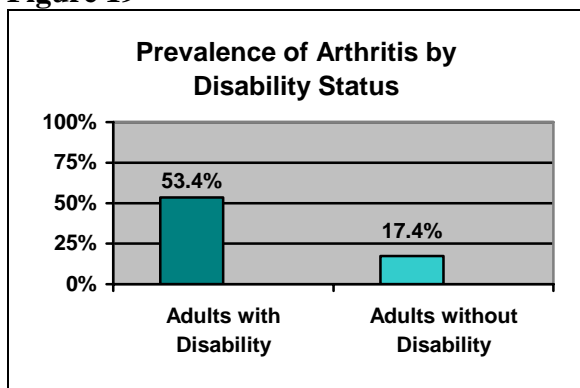


Figure 19 shows the prevalence gap of arthritis across the two groups with and without disability. More than half (53.4 percent) of adults with disability reported having doctor-diagnosed arthritis. The rate was 17.4 percent for those without disability.

## **ADDRESSING THE BURDEN OF ARTHRITIS IN ILLINOIS**

Similar to the Arthritis Data Report based on 2002 data, this report documents the enormous arthritis burden in terms of pain, activity limitation, disability, and health care costs in Illinois. Compared to 2002, the 2005 data indicate an increase (from 2.2 to 2.3 million) in the number of Illinois adults with arthritis, which is the beginning of the expected upward trends due to the aging of the population and the ongoing obesity epidemic. Other troubling statistics are the 25 percent and 13 percent increases in total knee and total hip replacement surgeries over the same time period. What clearly must be done to prevent arthritis activity limitation, disability, and health care costs is to increase the number of those with arthritis who engage in evidence-based and cost-effective strategies to reduce pain and prevent activity limitation and disability. Great strides have been made in the medical treatment of rheumatoid arthritis and there are intensive efforts to find effective medical treatment for osteoarthritis. However, it has been conclusively shown that physical activity is an effective strategy for reducing pain and activity limitation in these two major forms of arthritis, yet only a third of adults with arthritis in Illinois report recommended levels of regular physical activity and nearly a third engage in no leisure-time physical activity at all.

The two state chapters of the Arthritis Foundation and the Illinois Department of Public Health have partnered with local health departments and other state and community organizations to 1) bring to the public's attention the growing public health burden associated with arthritis, 2) make the public aware that medication and physical activity can treat arthritis pain and prevent future activity limitations, 3) provide venues for physical activity and education about arthritis, and 4) provide ongoing professional education to make sure doctors, nurses, and other health professionals keep up with new developments in arthritis care.

The Healthy People 2010 Arthritis Objectives include reducing the activity limitation rate due to joint symptoms among U.S. adults with doctor-diagnosed arthritis from 36.5 percent (in 2002) to 30 percent (in 2010). Clinical and public health tools can help to accomplish this objective, but a coordinated effort from both the clinical medicine and public health sectors is necessary. For additional information on these efforts contact the Illinois Department of Public Health's Arthritis Program at 217-782-3300 (TTY 800-547-0466) or local Arthritis Foundation Chapter.

## Appendix 1

### Illinois Department of Public Health Illinois Arthritis Initiative

#### Arthritis Inpatient Hospitalization Data Summary

##### Illinois Arthritis\* Hospitalizations, 2005

- In 2005, there were 45,488 inpatient discharges with a principal diagnosis of arthritis; 60 percent included a primary procedure of hip or knee replacement/revision.
- Total charges were more than \$1.5 billion, while average charge per discharge was \$33,034.
- Total hospital days reached 188,482, while average length of stay (LOS) per discharge was 4.1 days.
- Mean patient age was 64 years; 56 percent of discharges were for patients age 65 and older, and 77 percent were for those age 55 and older.
- 61 percent of discharges were to female patients; 39 percent were to males.
- 66 percent of hospitalizations were due to osteoarthritis and allied disorders.

##### Arthritis Hospitalizations by Age & Sex, 2005

Age	Number of Discharges							
	Females	% Females	% change from 2003	Males	% Males	% change from 2003	Total	% change from 2003
0-34	1,131	51.5%	4.0%	1,064	48.5%	8.1%	2,195	6.0%
35-64	10,261	56.9%	19.7%	7,785	43.1%	19.2%	18,046	19.5%
65+	16,404	65.0%	11.7%	8,843	35.0%	17.4%	25,247	13.6%
<b>Total</b>	<b>27,796</b>	<b>61.1%</b>	<b>14.2%</b>	<b>17,692</b>	<b>38.9%</b>	<b>17.6%</b>	<b>45,488</b>	<b>15.5%</b>

##### Arthritis Hospitalizations by Diagnosis Type, 2005

Principal Diagnosis	Discharges	% of Total	% change from 2003	Total Days	% of Total	% change from 2003	Total Charges	% of Total	% change from 2003	Ave LOS	Average Charge
Osteoarthritis and allied disorders	30,182	66.4%	21.1%	119,795	63.6%	13.2%	\$1,120,655,200	74.6%	42.6%	4.0	\$37,130
Spondylosis/spondylitis and allied disorders	3,831	8.4%	11.9%	15,949	8.5%	5.8%	\$128,635,566	8.6%	43.5%	4.2	\$33,578
Soft tissue disorders	3,696	8.1%	2.0%	16,326	8.7%	-7.7%	\$76,942,480	5.1%	10.8%	4.4	\$20,818
Other unspecified rheumatic conditions	2,218	4.9%	1.8%	13,323	7.1%	-2.9%	\$66,852,216	4.4%	18.9%	6.0	\$30,141
Joint pain, effusion and other unspecified joint disorders	2,195	4.8%	7.8%	7,692	4.1%	11.9%	\$36,939,659	2.5%	24.0%	3.5	\$16,829
Diffuse connective tissue disease	992	2.2%	-0.9%	6,207	3.3%	-10.4%	\$31,392,855	2.1%	8.3%	6.3	\$31,646
Gout & other crystal arthropathies	933	2.1%	24.9%	3,814	2.0%	22.1%	\$12,913,989	0.9%	46.0%	4.1	\$13,841
Rheumatoid arthritis	844	1.9%	3.1%	3,554	1.9%	1.6%	\$19,786,521	1.3%	17.3%	4.2	\$23,444
Myalgia/myositis unspecified	364	0.8%	-8.8%	1,191	0.6%	-8.3%	\$4,939,711	0.3%	10.0%	3.3	\$13,571
Carpal tunnel syndrome	233	0.5%	1.3%	631	0.3%	-7.5%	\$3,584,222	0.2%	10.0%	2.7	\$15,383
<b>Total</b>	<b>45,488</b>	<b>100%</b>	<b>15.5%</b>	<b>188,482</b>	<b>100%</b>	<b>7.9%</b>	<b>\$1,502,642,419</b>	<b>100%</b>	<b>37.4%</b>	<b>4.1</b>	<b>\$33,034</b>

## Arthritis Inpatient Hospitalization Data Summary (cont.)

### Illinois Lower Joint Replacement Hospitalizations, 2005

- In 2005, there were 29,525 inpatient discharges for knee or hip replacement/revision procedures with a primary or secondary diagnosis of arthritis.
- Total knee replacements increased by more than 25 percent and hip replacements by more than 13 percent from 2003 to 2005.
- 67 percent of hospitalizations were for knee replacement/revision procedures; 33 percent were for hip replacement/revision procedures.
- Total charges were nearly \$1.2 billion, while average charge per discharge was \$39,462.
- Total hospital days reached 116,081, while average length of stay (LOS) per discharge was 3.9 days.
- Mean patient age was 67 years; 61 percent of discharges were for patients age 65 and older; 86 percent were for those age 55 and older.
- 63 percent of discharges were to female patients; 37 percent were to males.

### Knee and Hip Replacement/Revision Hospitalizations for Arthritis by Age & Sex, 2005

Number of Discharges								
Age Group	Females	% Females	% change from 2003	Males	% Males	% change from 2003	Total	% change from 2003
0-34	71	60.7%	-10.1%	46	39.3%	4.5%	117	-4.9%
35-64	6,858	60.0%	26.3%	4,578	40.0%	25.6%	11,436	26%
65+	11,705	65.1%	12.5%	6,267	34.9%	20.8%	17,972	15.2%
<b>Total</b>	<b>18,634</b>	<b>63.1%</b>	<b>17.1%</b>	<b>10,891</b>	<b>36.9%</b>	<b>22.6%</b>	<b>29,525</b>	<b>19.1%</b>

### Knee and Hip Replacement/Revision Hospitalizations for Arthritis by Procedure Type, 2005

Primary Procedure	Discharges	% of Total	% change from 2003	Total Days	% of Total	% change from 2003	Total Charges	% of Total	% change from 2003	Ave LOS	Average Charge
Total knee replacement	19,280	65.3%	25.7%	73,986	63.7%	17.7%	\$741,411,008	63.6%	49.4%	3.8	\$38,455
Revision of knee replacement	463	1.6%	-12%	2,057	1.8%	-17.6%	\$21,248,006	1.8%	6.2%	4.4	\$45,892
Total hip replacement	8,706	29.5%	13.4%	33,871	29.2%	6.1%	\$358,458,040	30.8%	29.3%	3.9	\$41,174
Partial hip replacement	764	2.6%	-7.1%	4,566	3.9%	-7.6%	\$27,831,513	2.4%	9.2%	6.0	\$36,429
Revision of hip replacement	312	1.1%	-28.3%	1,601	1.4%	-33.0%	\$16,169,331	1.4%	-13.4%	5.1	\$51,825
<b>Total</b>	<b>29,525</b>	<b>100%</b>	<b>19.1%</b>	<b>116,081</b>	<b>100%</b>	<b>11%</b>	<b>\$1,165,117,899</b>	<b>100%</b>	<b>39.1%</b>	<b>3.9</b>	<b>\$39,462</b>

\*Notes: 1) Discharge records for arthritis were selected using the definition of arthritis developed by the National Arthritis Data Workgroup.

2) Discharge records for hip and knee replacement/revision procedures were selected using the following ICD-9 codes:

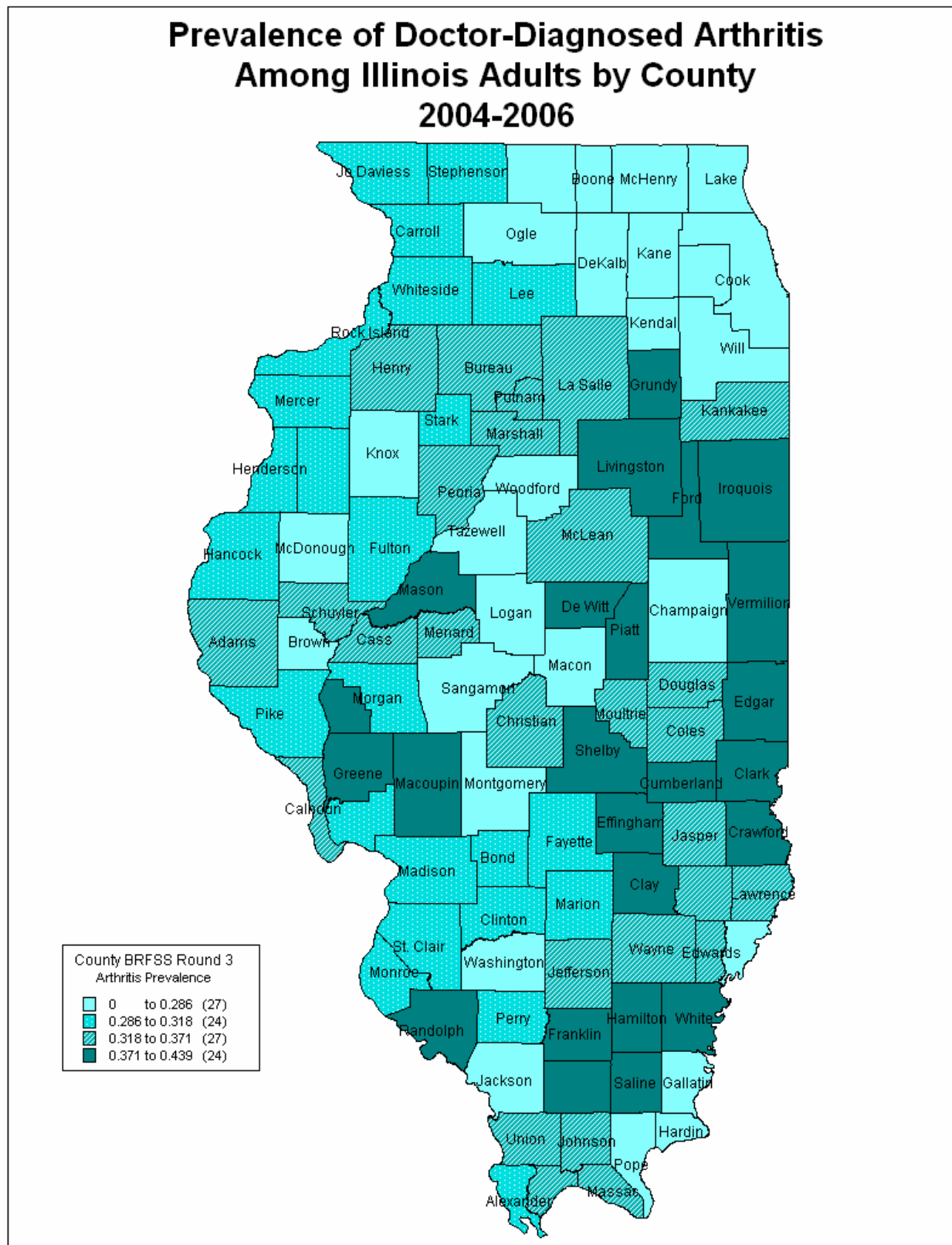
- 81.51 - Total hip replacement
- 81.52 - Partial hip replacement
- 81.53 - Revision of hip replacement, not otherwise specified
- 81.54 - Total knee replacement
- 81.55 - Partial knee replacement

3) Discharge numbers represent Illinois residents admitted to non-federal Illinois hospitals only (e.g. Illinois residents admitted to an Indiana hospital are not counted).

Source: Illinois Department of Public Health, Office of Policy, Planning and Statistics

Prepared by: Illinois Department of Public Health, Division of Chronic Disease Prevention & Control, Data Unit; 7/25/07

## Appendix 2 Arthritis Prevalence by County

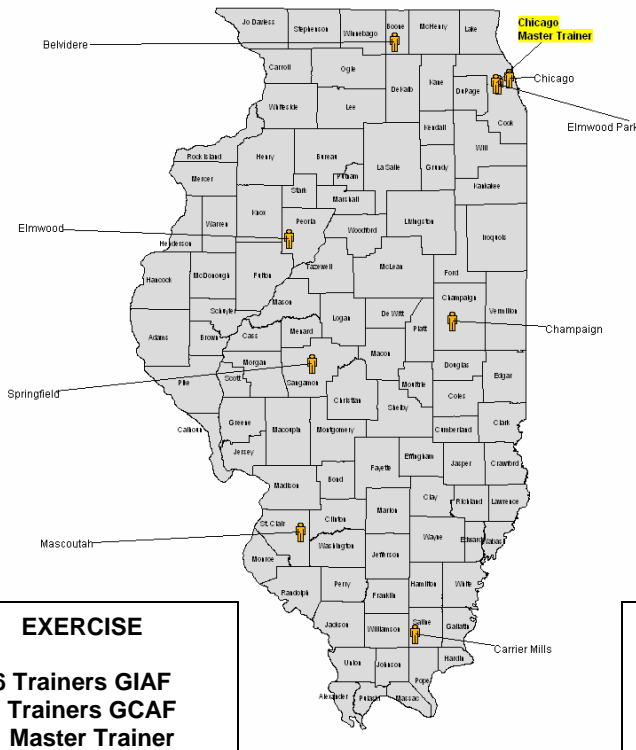


## Appendix 2 Arthritis Foundation Program Trainers in Illinois in 2005

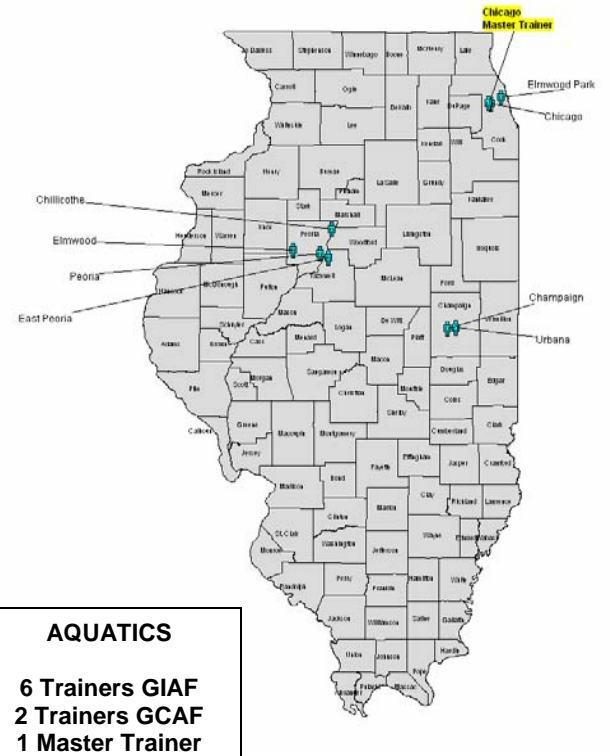
**Arthritis Foundation Self-Help Program Trainers 2005**



**Arthritis Foundation Exercise Program Trainers 2005**

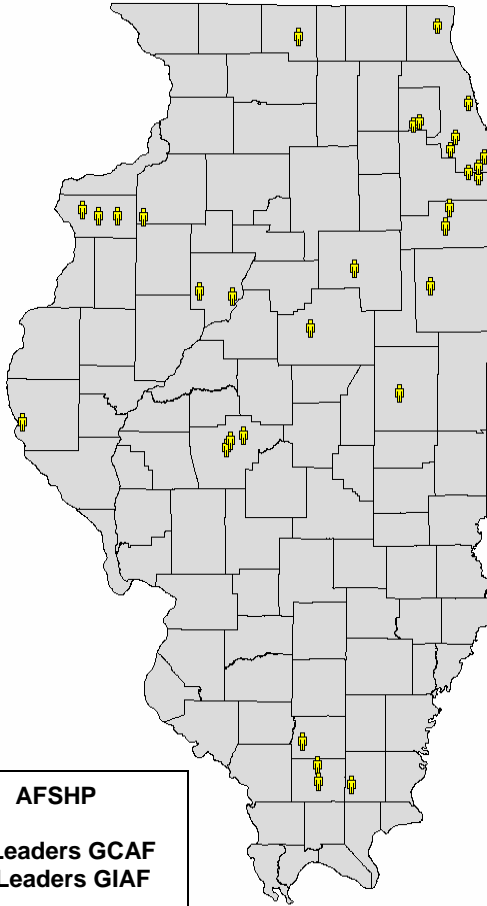


**Arthritis Foundation Aquatics Program Trainers 2005**



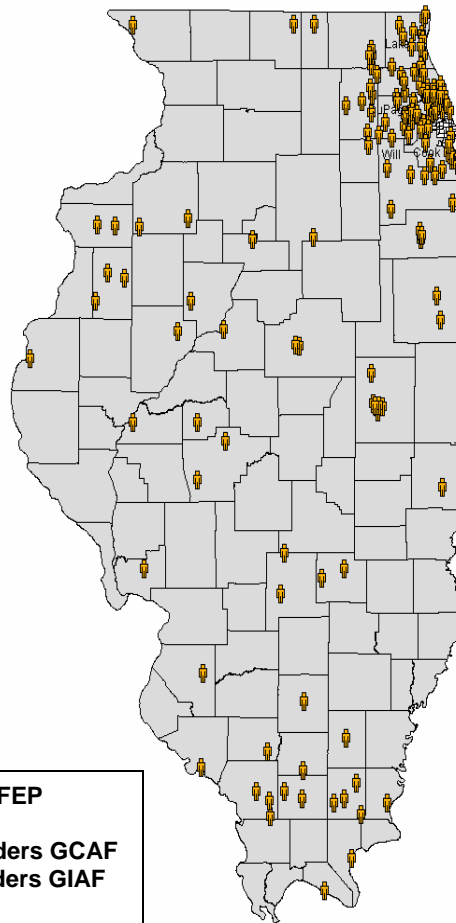
# Arthritis Foundation Leaders in Illinois in 2005

### Arthritis Foundation Self-Help Program Leaders 2005



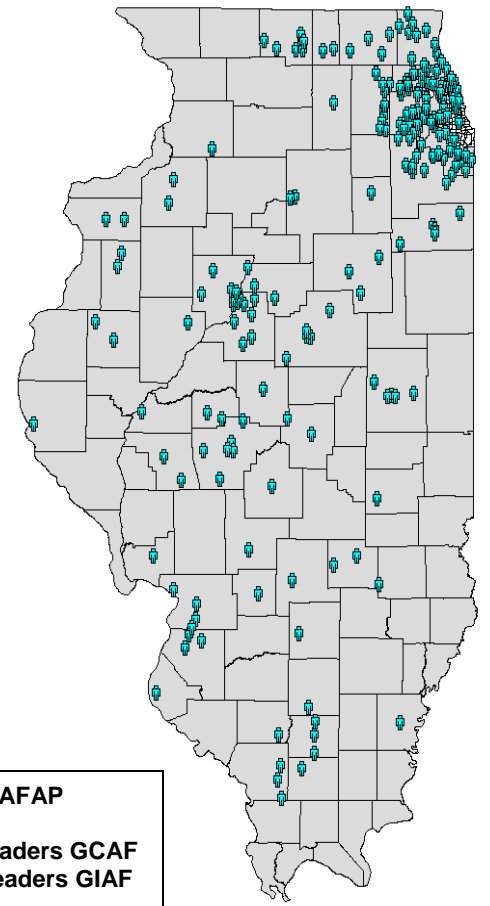
**AFSHP**  
23 Leaders GCAF  
14 Leaders GIAF

### Arthritis Foundation Exercise Program Leaders 2005



**AFEP**  
126 Leaders GCAF  
82 Leaders GIAF

### Arthritis Foundation Aquatics Program Leaders 2005

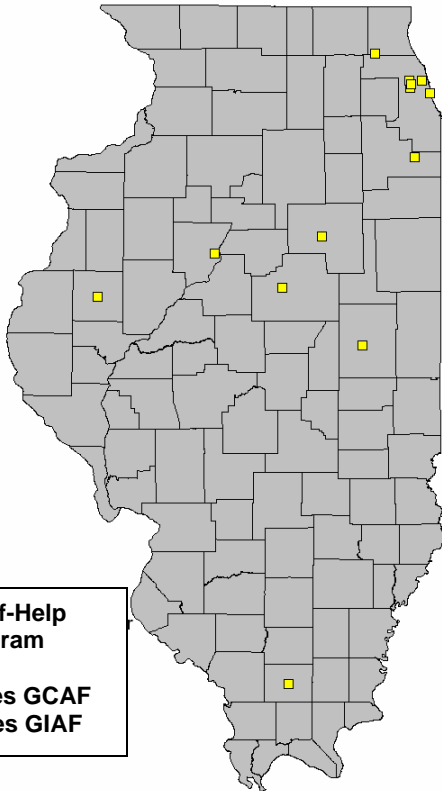


**AFAP**  
167 Leaders GCAF  
148 Leaders GIAF



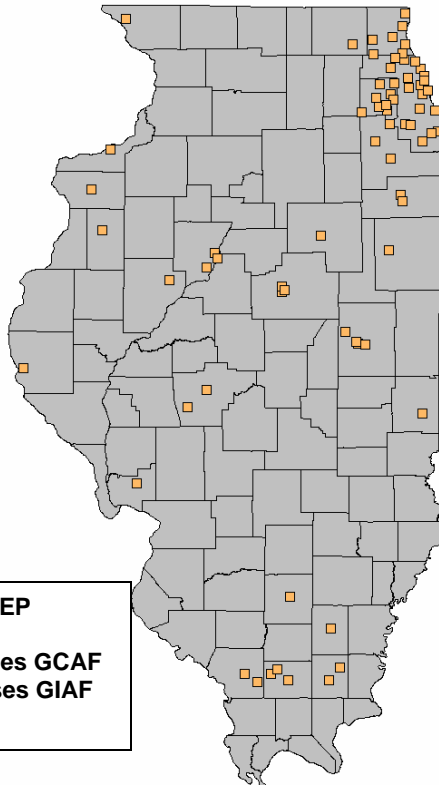
# Arthritis Foundation Classes in Illinois in 2005

Arthritis Foundation Self-Help Program Classes  
2005



**AF Self-Help Program**  
8 Classes GCAF  
5 Classes GIAF

Arthritis Foundation Exercise Program Classes  
2005



**AFEP**  
48 Classes GCAF  
36 Classes GIAF

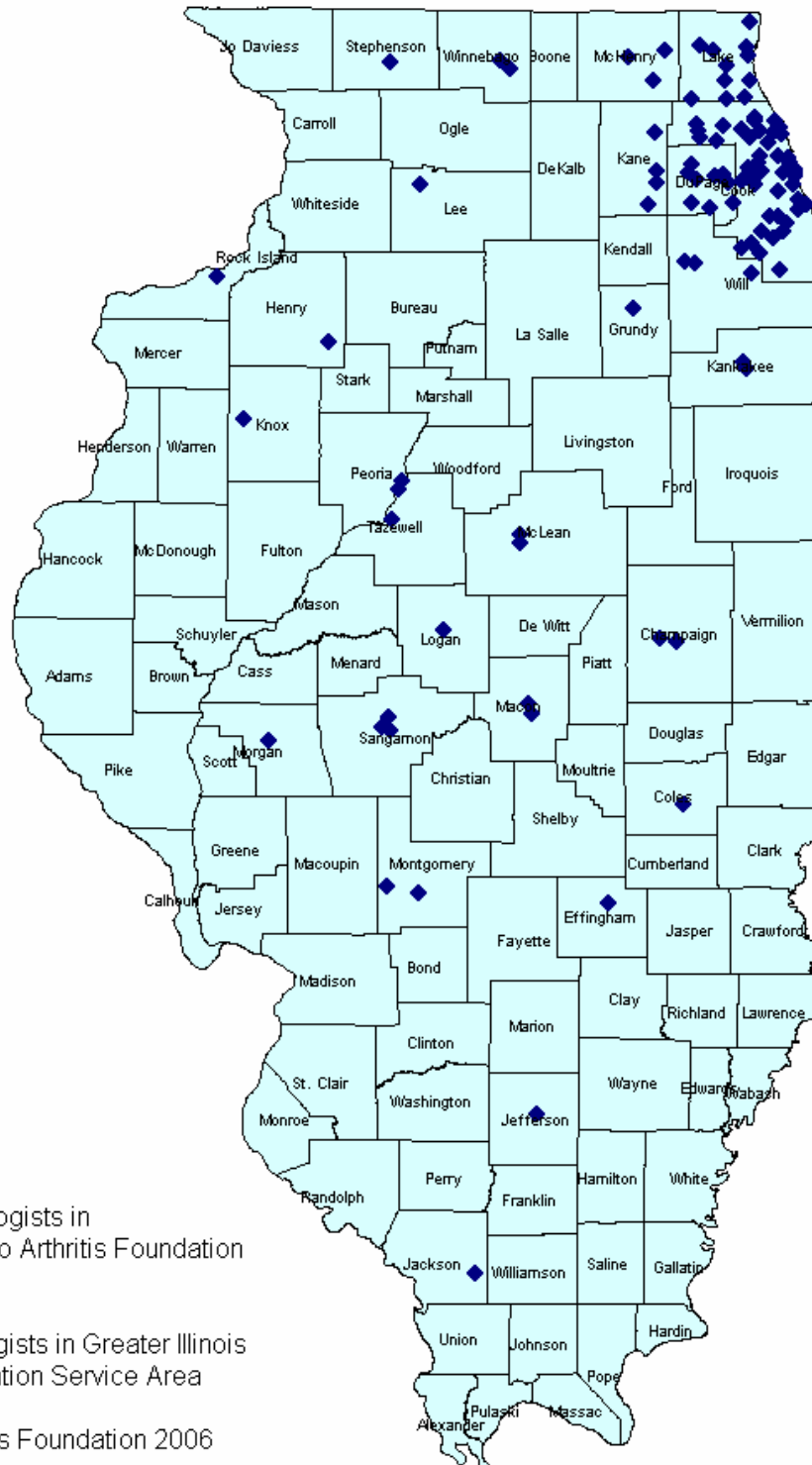
Arthritis Foundation Aquatics Program Classes  
2005



**AFAQ**  
67 Classes GCAF  
263 Classes GIAF

### Appendix 3 Access to Rheumatologists in Illinois

## Rheumatologists in Illinois by ZIP Code



## Appendix 4 Glossary and Technical Notes

### Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is a federally funded data collection system operated by all states. The BRFSS uses random digit dialing surveys of non-institutionalized residents aged 18 and older. It is carried out in 50 states, the District of Columbia, and certain U.S. territories (Guam, Puerto Rico, and the U.S. Virgin Islands).

Information collected from the BRFSS represents the first known systematic collection of statewide data on both arthritis and quality of life related to arthritis. Prior to collecting arthritis data through BRFSS, arthritis prevalence could only be estimated by applying national rates to age, race and gender distributions of the Illinois population. Illinois arthritis-related BRFSS data is available on a statewide and county level and cited accordingly in this report.

The BRFSS is a state-based program that gathers information on risk factors among Illinois adults 18 years of age and older through monthly telephone surveys. Established in 1984 as a collaboration between the U.S. Centers for Disease Control and Prevention (CDC) and state health departments, the BRFSS has grown to be the primary source of information on behaviors and conditions related to the leading causes of death for adults in the general population.

### Disability

For this analysis, disability was defined as self-reported or proxy-reported difficulty with or reporting one or more of eight measures: 1) difficulty with one or more specified functional activities\*; 2) difficulty with one or more activities of daily living (ADLs)\*; 3) difficulty with one or more instrumental activities of daily living (IADLs)\*; 4) reporting one or more selected impairments\*; 5) use of assistive aids (e.g., wheelchair, crutches, cane, or walker) for >6 months; 6) limitation in the ability to work around the house; 7) limitation in the ability to work at a job or business (data for persons aged 16-67 years); and 8) receiving federal benefits on the basis of an inability to work. A subset of persons with disability also reported the main cause of their disability from a list of 30 associated health conditions. This subset, defined before the survey was conducted, comprised persons reporting difficulty with ADLs, IADLs, selected functional activities (excluding seeing, hearing and having their speech understood by others), or limitation in the ability to work around the house or at a job or business. (McNeil, J. M., & Binette, J., 2001, Prevalence of disabilities and associated health conditions among adults: United States, 1999, *MMWR*, 50, 120-4).

### Hospital Discharge Data

The Hospital Discharge Data is based on data from the Illinois Center for Health Statistics, Illinois Department of Public Health and is created by the Data Unit of the Division of Chronic Disease Prevention and Control, Illinois Department of Public Health. The data deals with hospitalization and other related medical costs related to arthritis. The Diagnostic categories for this data report is based on the recommendation of the National Arthritis Data Workgroup which used the ICD9-CM diagnostic codes to define arthritis and other rheumatic condition.

### Prevalence

Prevalence is defined as the total number of cases in the population, divided by the number of individuals in the population. Here the cases refer to persons with arthritis or any other related health condition.

**Statistical Significance**

Statistical significance implies there is evidence based on statistical methods that the observed results are unlikely to have occurred by chance. The p-value is the significance of a result and a smaller p-value means more significant results. The statistically significant p-value for this report is  $p < 0.05$ .

**MMWR**

Morbidity and Mortality Weekly Report (MMWR) is a weekly epidemiological digest for the United States published by the U.S. Centers for Disease Control and Prevention.

**Healthy People 2010**

Healthy People 2010 is a national health initiative started in January 2000 by the U.S. Department of Health and Human Services. It is primarily comprised of a nationwide health promotion and disease prevention plan that includes 467 specific objectives, 28 goals and two overarching goals to be achieved by 2010.

**Limitations**

Every data source has limitations relating to characteristics of the target population, methods used to collect the data, definitions and the analytical approach. The limitations of the BRFSS data found in this report can be as follows:

- The samples are kept small to minimize survey costs for the respective state – the small sample size negatively affects the validity of the results.
- The survey excludes people without residential phones and those who are institutionalized. These subjects will not be represented in the estimates from the survey.
- BRFSS data are self-reported and reflect the perceptions of respondents. Respondents have difficulty recalling the events, understanding or interpreting questions or responding truthfully to questions (i.e. underreporting their weight). The quality of self-reported data also may be affected by cultural and language barriers and limited health knowledge.
- BRFSS data can be affected by bias from differential response rate, varying follow-up periods and variations in interviewer protocols or skills (e.g., extent of probing answers).
- Other issues that affect the results include inability of interviewers to contact some households despite repeated attempts and refusal of some contacts to participate in the survey.