16. ARTHRITIS, OSTEOPOROSIS, AND CHRONIC BACK CONDITIONS

Goal

Reduce the impact of several major musculoskeletal conditions by reducing the occurrence, impairment, functional limitations, and limitation in social participation (i.e., disability) due to arthritis and other rheumatic conditions; reducing the prevalence of osteoporosis and resulting fractures by increasing calcium intake and counseling women and men about interventions to reduce the risk of disease; and reducing activity limitation due to chronic back conditions.

Terminology

Musculoskeletal conditions: Conditions affecting the skeleton, joints, muscles, and connective tissues of the body.

Arthritis and other rheumatic conditions: Conditions affecting primarily the joints, tendons, bursa, ligaments, muscles, fascia, and other connective tissues of the body.

Osteoporosis and other metabolic bone disease: Osteoporosis is characterized by a reduction of bone mass and a deterioration of the micro-architecture of the bone leading to bone fragility. The formal definition of osteoporosis by the World Health Organization (WHO) is based on the measurement of bone mineral density (BMD). Those with BMD values below 2.5 standard deviations of the reference BMD for young adults are said to have osteoporosis. Those with BMD values between 1 to 2.5 standard deviations below the reference have low bone mass, osteopenia.

Chronic back conditions: include low back pain and other conditions affecting only the back.

Disability: the reduction of a person's capacity to function in society.

Overview

An increasing number of older Americans have focused attention on preserving their quality of life, as well as the length of life. This has drawn attention to the prevention and treatment of conditions that are major causes of disability, although they do not usually cause death. The group of conditions that are the greatest causes of disability are

musculoskeletal conditions. Among these, arthritis, osteoporosis, and chronic back conditions have the greatest public health impact.

Arthritis

Arthritis currently affects more than 15 percent of the U.S. population (over 40 million Americans) and more than 20 percent of the adult population, making it one of the most prevalent conditions in the United States. There are several additional reasons why arthritis impacts health. First, It is the leading cause of disability and trails only heart disease as a primary cause of work disability. Second, quality of life measures are consistently worse for persons with arthritis, whether that measure is healthy days in the past 30 days, days without severe pain, "ability days" (i.e., days without activity limitations), or difficulty in performing personal care activities. Third, arthritis has a large economic impact, accounting for some $65 billion in medical care costs and lost productivity in 1992. This figure is 1.1 percent of the Gross National Product. Fourth, arthritis has an important negative effect on a person's mental health, as do all chronic pain conditions. Fifth, although death is not a frequent outcome of arthritis, people with certain forms of arthritis do have higher mortality rates. (Healthy People 2010, Draft)

Arthritis and other rheumatic conditions affect one's quality of life in many ways and are key items of personal interest to those with these conditions. From a public health perspective, validated measures of health-related quality of life are essential for monitoring the impact of clinical and public health interventions.

Difficulty coping, depression, anxiety, and low self-efficacy are recognized as major problems among persons with arthritis. Addressing these issues is especially important among persons with pain, and arthritis is a leading cause of chronic pain. Monitoring these mental health outcomes can help assess the success of applied interventions in Kentucky.

Studies have shown that African Americans have much lower rates of total knee replacement than whites, even when adjusted for age, sex, and insurance coverage.[96] The reasons for this difference are not clear, but the effect is that many persons are not getting needed interventions to reduce pain and disability. This is one arthritis component of a more widespread problem of racial difference in medical care that cannot be easily explained by financial or access-to-care issues. It will require research into the causes of these differences and development of effective interventions.

Early diagnosis and treatment have proven to reduce pain, slow progression, and reduce disability of rheumatoid arthritis. Yet, studies suggest that the median time to diagnosis for rheumatoid arthritis is eight months after symptom onset, and over one-third of patients are undiagnosed one year after symptom onset. An American College of Rheumatology consensus conference identified other systemic rheumatic diseases, such as lupus nephritis, myositis, Kawasaki diseases, and giant cell arthritis, as benefiting from early diagnosis and appropriate treatment. An objective focusing on these systemic

rheumatic diseases is likely to have incidental benefits on persons with other types of inflammatory arthritis.

Existing effective evidence-based educational interventions, such as the Arthritis Self-help Course, have been shown to reduce arthritis pain and reduce physician visits for arthritis. However, these beneficial interventions are estimated to reach less than one percent of the population with arthritis. Disseminating the benefits of interventions currently available offers the opportunity of quickly improving the health of all persons with arthritis and reducing their impact nationally and in Kentucky.

Persons with arthritis consistently have higher body mass indices (BMIs) than age/sex/race matched persons without arthritis. Being overweight in middle age is a powerful risk factor for the development and progression of knee osteoarthritis, one of the most common and disabling types of arthritis. According to the 1998 BRFSS, 34.8 percent of Kentuckians ages 18 and older are overweight. Reducing obesity is one of the few recognized modifiable risk factors for an important cause of arthritis disability. The combination of dietary practices and regular physical activity is ideal to help persons with arthritis maintain joint health and slow progression of disease.

Osteoporosis

Approximately 13 to 18 percent of women aged 50 and older have osteoporosis, and 37 to 50 percent have osteopenia. Also, 1 to 4 percent of men aged 50 and older have osteoporosis, and 28 to 47 percent have osteopenia. These percentages correspond to 4 to 6 million women and 1 to 2 million men with osteoporosis. (Healthy People 2010, Draft)

The major health consequence of osteoporosis is increased risk of fractures. Approximately 1.5 million fractures per year are attributed to osteoporosis. One in three women and one in eight men aged 50 and older will experience an osteoporotic-related fracture in their lifetime. In 1996, health care costs for these fractures were estimated at $13.8 billion per year.

The most serious effects of hip fractures are health care costs and consequences for the patient. In 1994, there were 281,000 hospital discharges for hip fractures among persons aged 45 and older. Of these, 74,000 or 26 percent were men. One out of six white women and one out of 17 white men will experience a hip fracture by the time they reach 90 years of age. While the hip fracture rate among women seems relatively constant, the rate among men seems to be increasing over time. An average of 24 percent of hip fracture patients aged 50 and over die in the year following fracture, with higher mortality rates among men than among women. Also, hip fractures are more likely than other serious medical conditions, including heart attack, stroke and cancer, to lead to functional impairment.

BMD has been identified as one of the primary predictive risk factors for osteoporotic fracture. An expert panel of the WHO recently proposed diagnostic criteria for osteoporosis in postmenopausal women based on bone density. Cut-off values for

osteoporosis are defined using BMD data from a young adult reference group. Specifically, osteoporosis is defined as a BMD value that is more than 2.5 standard deviations below the young adult reference mean. Baseline data on low femoral BMD is available from NHANES III, while baseline data on low total body BMD will be available from NHANES IV by 2001. Both data sets can provide relevant baseline information for monitoring progress towards this objective.

Osteoporosis is a largely preventable disease with known risk factors, many of which need to be addressed by health care providers beginning in childhood and continuing throughout life. As recommended in the 1995 *Guide to Clinical Preventive Services*, counseling should include both education as well as efforts to help the patient change behaviors. National estimates for the prevalence of osteoporosis prevention counseling by health care providers do not currently exist. However, the National Ambulatory Medical Care Survey does provide information on the prevalence of physician counseling on diet, physical activity, and smoking, each of which should be included in osteoporosis prevention counseling. Use of these data will provide a liberal estimate of the prevalence of counseling related to specific osteoporotic risk factors.

Chronic Back Conditions

Chronic back conditions are common and debilitating. The annual incidence of low back pain is 5 to 14 percent, and the prevalence ranges from 60 to 90 percent. Chronic back conditions are the most frequent causes of activity limitation in people younger than age 45, and account for 23 percent of the activity limitation among people aged 18 to 44. Low back pain disables 5.4 million Americans and costs at least $16 billion each year. (Healthy People 2010, Draft)

Chronic back conditions include inter-vertebral disk disorders, curvature of the back or spine, and other self-reported chronic back impairments such as permanent stiffness or deformity of the back or repeated trouble with the back. Activity limitation refers to any self-reported limitations in activity attributed to a chronic back condition.

People who are overweight and people who frequently bend over or lift heavy objects are more likely to report low back injuries. Occupations that require repetitive lifting, particularly in a forward bent and twisted position, place employees at especially high risk. Other risk factors for low back injury include exposure to vibration produced by vehicles or industrial machinery, prolonged vehicle driving, and certain sports activities. Also associated with an increased incidence of back pain are spinal osteochondrosis, spondylolisthesis, and spinal stenosis. Other predictors of back problems may be lumbar flexibility, trunk muscle strength, and hamstring elasticity. Osteoporosis increases the risk of vertebral compression, and this may account for the increase in reported low back pain symptoms in older women. Back pain is associated with increased age. People who have experienced back problems in the past are also at increased risk for future injury. Interventions to prevent low back injury typically involve education, physical conditioning, weight loss, and/or task or environmental redesign. With these interventions reductions in the incidence of back injuries of 49 to 68 percent have been

reported. For the overall population, the emphasis should be on physical activity and dietary measures to maintain ideal body weight.

Progress Toward Year 2000 Objectives

No objectives relating to arthritis, osteoporosis, or chronic back conditions were included in *Healthy Kentuckians 2000*. The national health objectives for the year 2000 included a few objectives for osteoporosis, one objective for chronic back conditions, and no objectives for arthritis. National progress for the Healthy People 2000 objectives for osteoporosis and chronic back conditions is summarized as follows:

- The national objective of increasing to 90 percent the proportion of peri-menopausal women who have been counseled about estrogen replacement therapy for the prevention of osteoporosis had baseline data determined in 1994. Rates were 76 percent among women aged 40 to 49 and 83 percent among women aged 50 to 59. No subsequent data were available to chart progress toward the year 2000.
- Annual hip fracture (objective 9.7) rates increased among persons aged 65 and older from 714 per 100,000 persons in 1988 to 818 fractures per 100,000 in 1995, although the rate declined slightly among white females aged 85 and older.
- Rates of activity limitation due to chronic back conditions (objective 17.5) increased from the 1986-88 baseline of 21.9 per 1,000 to 28.1 per 1,000 in 1994.

This lack of available data for arthritis, osteoporosis, and chronic back conditions is disturbing. There is a clear need for urgent, cohesive actions to reverse these alarming public health trends.

2010 Objectives

Action Steps for ALL Objectives: Specific, targeted interventions need to be carefully developed under the tutelage of a broad-based Kentucky Arthritis/Osteoporosis/Chronic Back Pain Prevention and Control Coalition. A formal *Kentucky Plan for the Control of Arthritis, Osteoporosis and Chronic Back Pain* should be published and disseminated to provide specific direction and suggested activities. Activities should be based on the National Arthritis Action Plan and reflect *Healthy Kentucky 2010*, and other guides, such as those developed by the National Osteoporosis Foundation. Activities should be data based and, when feasible, integrated with other chronic conditions sharing the same basic risk factors.

Arthritis

16.1. (Developmental) **Increase mean days without severe pain for Kentucky adults with diagnosed arthritis to more than 20 of the past 30 days.**

Target Setting Method: Based on *Healthy People 2010*

Potential Data Source: Behavior Risk Factor Surveillance System (modification of arthritis module) and surveys of managed care organizations

Implementation Strategy:

- Annual incorporation and analysis of Arthritis Module and Quality of Life Supplement into Kentucky BRFSS – consider modifications to obtain this data.
- Develop a coalition to determine additional data sources and means to address the problem.

16.2. (Developmental) **Reduce to no more than 18.4 percent the proportion of Kentucky adults with diagnosed arthritis who have difficulty in performing two or more personal care activities, thereby preserving independence.**

Baseline: No Kentucky specific data

Target Setting Method: 18.5 percent improvement over baseline data, yet to be obtained

Potential Data Source: Same as 16.1.

Implementation Strategy: Same as 16.1.

16.3. (Developmental) **Reduce the proportion of <u>all</u> Kentuckians with diagnosed arthritis who have difficulty in performing two or more personal care activities, thereby preserving independence.**

Potential Data Sources: National Health Interview Survey (NHIS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Kentucky Medicaid Managed Care Partnerships

Implementation Strategy: Same as 16.1.

16.4. (Developmental**) Increase the proportion of Kentuckians with diagnosed arthritis aged 18 and older who seek help in coping with personal and emotional problems.**

Potential Data Sources: NHIS, CDC, NCHS, BRFSS, NCCDPHP could be modified; Kentucky Medicaid Managed Care Partnerships.

Implementation Strategy: Same as 16.1.

16.5. (Developmental) **Increase the proportion of the working age population in Kentucky with diagnosed arthritis who desire to work (i.e., both those who are employed and those who are unemployed but looking for work, the labor force participation rate) to 48 percent.**

Baseline: None available for Kentucky.

Target Setting Method: 33 percent improvement over baseline data, yet to be determined

Potential Data Sources: Additional module on BRFSS, CDC

Implementation Strategy: Same as 16.1.

Joint Replacement

16.6. (Developmental**) Eliminate racial difference in the rate of total knee replacement for severe pain and disability.**

Potential Data Sources: Medicare, health care provider data; Kentucky Medicaid Managed Care Partnerships

Implementation Strategy: Same as 16.1.

16.7. (Developmental) **Decrease to 15 percent the proportion of Kentucky adults who report they have arthritis but have never seen a doctor for it.**

Baseline: None for Kentucky.

Target Setting Method: 5 percent improvement over Kentucky data from year 2000 BRFSS Arthritis Module

Potential Data Sources: Kentucky BRFSS**,** NHIS, CDC, and NCHS

Implementation Strategy: Same as 16.1.

16.8. (Developmental**) Increase the early diagnosis and appropriate treatment of individuals with systemic rheumatic diseases.**

Potential Data Sources: Surveys done between now and the year 2010, Kentucky Medicaid Managed Care Partnerships and other health maintenance organizations (HMO's).

Implementation Strategy:

- Same as 16.1

- Coalition to consider existing and/or needed data sources for collection of information on children with arthritis, with follow-up targeted interventions

16.9. (Developmental**) Increase the proportion of adults in Kentucky with arthritis who have had effective, evidence-based arthritis education (including information about community and self-help resources) as an integral part of the management of their condition.**

Potential Data Sources: NHIS, CDC, NCHS, BRFSS, NCCDPHP, could be modified; Kentucky Medicaid Managed Care Partnerships, other HMO's.

Implementation Strategy: Same as 16.1

16.10. (Developmental**) Increase the proportion of Kentucky hospitals, managed care organizations, and large group practices that provide effective, evidence-based arthritis education (including information about community and self-help resources).**

Potential Data Sources: Kentucky Medicaid Managed Care Partnerships and other HMO's, private providers, Kentucky Hospital Association, Kentucky Medical Association

Implementation Strategy:

- Same as 16.1
- Coalition to consider existing and/or potential data sources to guide targeted interventions for children with arthritis

16.11. (Developmental**) Increase the proportion of overweight Kentucky adults with arthritis who have adopted some dietary practices combined with regular physical activity to attain an appropriate body weight.**

Note: The NHIS, with input from the National Arthritis Data Workgroup, changed its approach to arthritis in 1996. Instead of asking for self-reports of arthritis diagnosis, which is difficult for many respondents who do not know their type of arthritis, the NHIS now asks for self-reports of symptoms. The personal interview-based NHIS and the telephone-based BRFSS optional arthritis module ask identical questions about pain, aching, stiffness, or swelling in or around a joint that was present on most days for at least one month in the past 12 months, which is the new self-report definition of arthritis and other rheumatic conditions. Studies will soon be undertaken to validate this new definition.

Potential Data Sources: NHIS, CDC, NCHS; modification of Kentucky BRFSS Arthritis Module, NCCDPHP

Implementation Strategy:

- Same as 16.1
- Integrate with Physical Activity and Fitness and Nutrition Objectives

Osteoporosis

16.12. (Developmental) **Reduce the prevalence of osteoporosis in Kentucky, as defined by low bone mineral density (BMD), to no more than 8 percent among persons aged 50 and over.**

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

Potential Data Sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS, National Osteoporosis Foundation, Kentucky Hospital Association, Relevant research programs in the universities.

Implementation Strategy: Same as 16.1, including input from National Osteoporosis Foundation

16.13. (Developmental**) Increase to 35 percent the proportion of persons in Kentucky over the age of 13 who receive counseling from their health care provider, or school based nutrition programs, or university extension programs about osteoporosis prevention.**

Target Setting Method: 70 percent increase over baseline data, yet to be determined

Potential Data Sources: National Ambulatory Care Survey, University of Kentucky Health Interview Survey, Medicaid Managed Care Partnerships and other HMO's, private providers.

Implementation Strategy: Same as 16.12.

16.14. (Developmental**) Increase the proportion of women aged 50 and older in Kentucky, as well as other persons at high risk in this state for osteoporosis, who are counseled about prevention of osteoporosis as well as about appropriate regimens for the treatment of osteoporosis.**

Potential Data Sources: BRFSS

Implementation Strategy: Same as 16.12.

<u>Chronic Back Conditions</u>

16.15. (Developmental) **Reduce the prevalence activity limitations due to chronic back conditions to no more than 27 per 1,000 persons in Kentucky.**

Baseline: None specific to Kentucky.

Target Setting Method: 4 percent improvement over baseline data, yet to be determined

Potential Data Sources: NHIS, CDC, and NCHS, University of Kentucky Health Interview Survey, Kentucky health care providers.

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