Arthritis, Osteoporosis, and Chronic Back Conditions

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PROGRESS REVIEW

In the second session of the second series of assessments for *Healthy People 2010*, ADM John O. Agwunobi, Assistant Secretary for Health, chaired a focus area Progress Review on Arthritis, Osteoporosis, and Chronic Back Conditions. He was assisted by staff of the lead agencies for this *Healthy People 2010* focus area—the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH). Also participating in the review were representatives from other U.S. Department of Health and Human Services (HHS) offices and agencies. In his introduction to Progress Review participants, ADM Agwunobi noted that the illnesses and conditions that are the subject of this focus area are often considered in the public's view to be of lesser consequence than some other disorders because they are not leading causes of mortality. However, these illness and conditions have a major impact in terms of their morbidity and costs and are among the principal causes of disability. Moreover, a large increase is anticipated in the overall number of cases of arthritis and osteoporosis due to the aging baby-boomer generation approaching the peak years for incidence of these illnesses. ADM Agwunobi also drew attention to the year 2006 as being in the middle of the World Health Organization's international Bone and Joint Decade and in the middle of the U.S. Bone and Joint Decade proclaimed by President Bush. The key goals of the decade are to keep people moving, raise awareness of the growing impact of musculoskeletal disorders, and reduce the burden and cost of these disorders to individuals, careers, and society.

The complete text for the Arthritis, Osteoporosis, and Chronic Back Conditions focus area of *Healthy People 2010* is available online at **www.healthypeople.gov/document/html/volume1/02arthritis.htm**. More recent data used in the Progress Review for this focus area's objectives and their operational definitions can be found at **wonder.cdc.gov/data2010/**. For comparison, the report on the first-round progress review (held on September 18, 2002) is archived at **www.healthypeople.gov/data/2010prog/focus02/2002fa02.htm**. The meeting agenda, tabulated data for all focus area objectives, charts, and other materials used in the Progress Review can be found at a companion site maintained by the National Center for Health Statistics (NCHS)/CDC: **www.cdc.gov/nchs/about/otheract/hpdata2010/focusareas/fa02-aocbc2.htm**.

Data Trends

Richard Klein of the NCHS Division of Health Promotion Statistics summarized the impact of the three illnesses and conditions encompassed by the focus area. Arthritis and other rheumatic conditions are the leading cause of disability in the United States and, in 2004, affected about 22 percent of adults aged 18 years and older, totaling 43 million people. About 8 percent of adults (or 16 million people) experienced limitations on their activities because of these conditions. Most cases of arthritis occur in people younger than age 65, and more females

than males are affected. In general, the higher the body mass index (BMI) of an individual, the greater is the likelihood of the occurrence of arthritis. In 2003, the total U.S. cost for arthritis and other rheumatic conditions was $127 billion (unpublished data). Osteoporosis is responsible for more than 1.5 million fractures and $14 billion in medical care costs annually. Chronic back conditions affect 26 million Americans aged 20 to 64 years and cost the nation about $100 billion per year. Mr. Klein then reported, in greater detail, on progress achieved toward meeting the targets of selected objectives in the focus area.

In 2003, the mean level of self-reported joint pain among adults with arthritis (age-adjusted, aged 18 years and older) in the United States was 5.6 on a scale from 1 (lowest) to 10 (highest). The mean level among certain population groups was as follows: Asians, 5.1; non-Hispanic whites, 5.4; Hispanics, 6.5; and non-Hispanic blacks, 6.6. By level of educational attainment among people aged 25 years and older, the mean in 2003 for those with at least some college was 5.2, compared with 6.6 for those who had not graduated from high school. The 2010 target for all groups is 5.3 (Obj. 2-1).

Among adults aged 18 years and older with arthritis, 39 percent (age-adjusted) of both males and females had activity limitation due to that condition in 2004. The age-adjusted proportions among certain population groups were Asians, 30 percent; non-Hispanic whites, 37 percent; non-Hispanic blacks, 45 percent; and Hispanics, 47 percent. Among people with middle to high income, 33 percent of those with arthritis had activity limitation in 2004, compared with 56 percent of low-income people with arthritis. The target for all groups is 33 percent (Obj. 2-2).

In 2003, 37 percent (age-adjusted) of overweight and obese adults aged 18 years and older who had arthritis received counseling for weight reduction from their healthcare provider. A greater proportion (42 percent) of females in that category received such counseling than did males (32 percent). The target is 46 percent (Obj. 2-4a). In general, the higher the BMI of the individuals concerned, the more likely they are to receive counseling for weight reduction. Still, nearly 20 percent of adults aged 18 and older who had extreme obesity (a BMI of 40 or more) had not received such counseling.

In 2004, 56 percent (age-adjusted) of adults aged 18 years and older who had arthritis received counseling for physical activity or exercise from their healthcare provider. Among non-Hispanic blacks, 61 percent were counseled on that subject, compared with 55 percent of non-Hispanic whites. The proportion of females who were counseled was 60 percent, compared with 50 percent of males. The target is 67 percent (Obj. 2-4b).

In 2003, 29 percent (age-adjusted) of adults aged 18 to 64 years with arthritis were limited in their ability to do paid work. The proportion was 30 percent for females, compared with 28 percent for males. Among racial and ethnic groups, 27 percent of non-Hispanic whites were limited in their ability to do paid work, compared with 37 percent of both non-Hispanic blacks and Hispanics. By level of educational attainment among people aged 25 to 64 years, 46 percent of people with arthritis who had not completed high school were limited in their ability to do paid work due to the illness, compared with 24 percent of those with at least some college. The target is 23 percent (Obj. 2-5b).

In 2004, 57 percent of adults (age-adjusted, aged 18 years and older) with chronic joint symptoms had seen a healthcare provider about their symptoms. The proportions of selected population groups in that category were as follows: American Indian or Alaska Native, 71 percent; Asian, 50 percent; Hispanic, 51 percent; non-Hispanic whites, 58 percent; non-Hispanic blacks, 57 percent; males, 55 percent; females, 60 percent; non-high school graduates, 48 percent; and those with at least some college, 61 percent. The

proportions did not vary greatly by family income level. The target is 61 percent (Obj. 2-7).

In 2003, 11 percent of adults with arthritis (age-adjusted, aged 18 years and older) had received education about arthritis as part of the management of their condition. There was considerable variation by education level among persons with arthritis aged 25 years and older. Among those with some college, 14 percent had received education about arthritis management, compared with 6 percent of those who had not completed high school. The target is 13 percent (Obj. 2-8).

The age-adjusted rate of hospitalization per 10,000 standard population for osteoporosis-associated vertebral fractures among people aged 65 years and older was 19.6 in 2004, compared with 17.5 in 1998 and 14.1 in 2001. For males, the rates per 10,000 were 13.9 in 1998, 13.2 in 2001, and 18.7 in 2004. For females, the rates per 10,000 were 19.6 in 1998, 14.6 in 2001, and 19.7 in 2004. The age-specific hospitalization rate for that condition in 2004 was 11.0 per 10,000 among persons aged 65 to 74 years, 20.5 among persons aged 75 to 84 years, and 51.3 among persons aged 85 years and older. The target is 14.0 per 10,000 (Obj. 2-10).

The age-adjusted rate of activity limitations per 1,000 standard population for chronic back conditions among persons aged 18 years and older was 28 per 1,000 in 2004, compared with 32 in 1997 and 26 in 2000. Females in that age group experienced a slightly higher rate (29 per 1,000) of activity limitations from that condition in 2004 than did males in that year (27 per 1,000). By level of educational attainment among people aged 25 years and older, 49 per 1,000 of those who had not completed high school experienced activity limitations in 2004, compared with 27 per 1,000 of those who had at least some college. The target rate is 25 per 1,000 (Obj. 2-11).

Key Challenges and Current Strategies

In presentations that bracketed the data overview, the principal themes were introduced by representatives of the two lead agencies. Janet Collins, Director of CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), provided a general overview of the status of the focus area. The three main subjects of the focus area were addressed in greater detail by CAPT Charles Helmick, CDC/NCCDPHP (arthritis); Paul Scherr, CDC/NCCDPHP (osteoporosis); and CAPT James Panagis, the NIH National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) (chronic back conditions). These agency representatives set the stage for discussions among Progress Review participants, identified a number of barriers to achieving the objectives, and discussed activities under way to meet these challenges, including the following:

Arthritis

- By 2030, arthritis is projected to affect 67 million people in the United States, or 25 percent of the population, and to cause activity limitations for 25 million.
- As part of a focus area that first got under way in 2000, arthritis began the decade with five of its objectives in developmental status. Now, all eight arthritis objectives have baselines, thus enabling progress to be measured for each.
- In accordance with the 1999 *National Arthritis Action Plan—A Public Health Strategy*, CDC has since then provided capacity-building grants to 36 state health departments to address arthritis as a public health issue by enabling the departments to develop an arthritis plan for the state; have a full-time arthritis

expert on staff; develop partnerships with Arthritis Foundation chapters; monitor arthritis data; and expand the variety of available evidence-based interventions for arthritis.

- Since 2000, approaches for collecting self-reported prevalence and burden data for generic arthritis have been examined, modified, validated, and implemented. The CDC Arthritis Program is now exploring avenues for obtaining similar data generated by healthcare systems for some of the more common or severe specific types of arthritis, such as osteoarthritis, rheumatoid arthritis, systemic lupus erythematosus, gout, and fibromyalgia.
- NIAMS is working with the Health Resources and Services Administration (HRSA) to distribute NIAMS information packages about arthritis to hundreds of HRSA's community health centers around the country and to explore a similar distribution to Indian Health Service clinics.
- NIAMS partnered with the National Institute on Aging, other NIH components, and four pharmaceutical companies to establish the Osteoarthritis Initiative, a public-private partnership aimed at developing clinical research resources that support the discovery and evaluation of biomarkers and surrogate endpoints for osteoarthritis onset and progression in clinical trials.

Osteoporosis

- About 10 million people in the United States have osteoporosis in a female-to-male ratio of roughly 4 to 1. Among those who have this condition, about one in every two women and one in every four men aged 50 and older will have an osteoporosis-related fracture. On average, women lose 6 percent of bone mass in the first year following menopause.
- Vertebral fractures, a frequent consequence of osteoporosis, are the most common kind of fracture in the United States and occur at a rate of about 700,000 per year (compared with about 250,000 per year for hip fractures). Vertebral fractures can be painless and go unnoticed, but they may be the cause of back pain and lead to loss of mobility and pulmonary difficulties.
- Estrogen replacement therapy was formerly promoted as a way of preventing osteoporosis in women, but it has been shown by the NIH Women's Health Initiative study to place women at increased risk of coronary heart disease, breast cancer, stroke, and pulmonary embolism. The increased risk of these conditions outweighed the benefit of reducing hip fractures.
- Another study on women's health found that administration of calcium and vitamin D supplements to osteoporosis patients had a positive effect by increasing bone density but was not associated with a reduction in the incidence of hip fractures.
- The *Surgeon General's Report on Osteoporosis and Bone Health*, released in October 2004, includes recommendations for maintaining bone health directed at the individual and at healthcare professionals.
- In September 2002, the U.S. Preventive Services Task Force recommended that women aged 65 and older should be routinely screened for osteoporosis.
- The NIAMS-supported Framingham Osteoporosis Study (FOS) involves first- and second-generation participants in the Framingham Heart Study, one of the longest running cohort studies in the world. Using comprehensive data about osteoporosis risk factors from the two cohorts and stored DNA, the FOS has yielded findings to suggest that patterns of food consumption have influences on bone mineral density. Ultimately, the study may offer potential dietary approaches to preventing osteoporosis.

Chronic Back Conditions

- Lower back pain (LBP) is one of the most widely experienced health problems in the United States, the estimated cost of which ranges from $30 to $70 billion yearly. Chronic LBP (i.e., lasting longer than 12 weeks) is experienced by less than 5 percent of all persons affected but accounts for 75 percent of the total cost.
- Although the percentage of people having spinal surgery for LBP has increased sharply over time, there is little information on whether back surgery is better than nonoperative treatments.
- In a 5-year study beginning in June 2003 and due to cost more than $13.5 million, NIAMS has provided the major share of funds for researchers at 12 medical centers to compare surgical and non-surgical treatment approaches in 1,450 randomly assigned patients who have one of three commonly diagnosed lower back disorders: herniated lumbar disc, spinal stenosis, or degenerative spondylolisthesis. The study will follow patients for at least 24 months after treatment by one modality or the other to determine the medical and cost effectiveness of the two treatments. The project is expected to have a major impact on clinical practice.

Approaches for Consideration

Participants in the review made the following suggestions for public health professionals and policymakers to consider as steps to enable further progress toward achievement of the objectives for Arthritis, Osteoporosis, and Chronic Back Conditions:

- To help develop and better target interventions, expand efforts to identify additional modifiable and non-modifiable risk factors for the occurrence and progression of the more than 100 types of arthritis and other rheumatic conditions.
- In addressing health disparities, explore ways to reduce perceptual differences among minority groups that can serve as disincentives for seeking treatment of proven value in certain types of joint disorders (e.g., knee or hip pain).
- Make greater efforts to inform and convince the public of the effectiveness of beginning or maintaining physical activity to reduce arthritis pain, a message that must often overcome a long history of advice to the contrary (i.e., to rest rather than be active).
- Promote higher levels of physical exercise among young people, who can benefit later in life from the increase in bone density (which peaks at around age 20) and the decrease in risk for osteoporosis.
- Encourage states and other relevant jurisdictions to reinstitute routine screening for spinal misalignments in the schools.
- Increase research on reducing back pain disability in socioeconomically vulnerable patients, including the assessment of self-management strategies.
- In public education and other efforts relating to arthritis, osteoporosis, and chronic back conditions, partner with or emulate groups associated with other illnesses, such as diabetes, that share target populations and that have been highly successful in disseminating their messages.
- Encourage more long-term studies to better understand the factors associated with onset, progression, and disability regarding these conditions and how they interact with employment and the workplace.

- Develop a model for coordinating and synergizing the efforts and interests of all concerned HHS agencies along a common pathway for addressing the outstanding issues presented by the focus area.
- Consider using Medicare's "Welcome to Medicare" initial examination to address screening and education issues relevant to arthritis, osteoporosis, and chronic back conditions.

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[Signed October 17, 2006]

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