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Special Focus: Healthy Aging

Preventing the Diseases of Aging

The new millennium brings the nation many challenges, but none is more troubling than that of caring for an increasingly large population of Americans older than 65 years. Not only has the birthrate decreased since 1964, when the baby boom ended; at the same time, life expectancy has increased dramatically, from 47 years in 1900 to 76 years in 1990. Adults older than 85 years are the fastest-growing part of the population; by 2030, they are expected to number 8.5 million. "If disease patterns stay the same, the health care system will have to spend an additional $400 to $500 billion to cover the costs of an older population," said James S. Marks, MD, MPH, Director, NCCDPHP. However, lifestyle changes and increased emphasis on prevention could reverse the trends of increasing chronic disease, disability, and death.

In 2030, when the last baby boomer turns 65, more Americans will be seniors than ever before. Will their medical needs overwhelm the health care system or will new prevention efforts result in healthier aging for future generations?

Chronic Diseases: Common but Preventable

The leading causes of illness and death among people aged 65 years and older are heart disease, cancer, and stroke, chronic diseases that not only result in premature death, but in many cases reduce the quality of life. Approximately 80% of all seniors have at least one chronic condition, and 50% have at least two. Chronic diseases are among the most prevalent, costly, and preventable of all health problems.

Although the risk of disease and disability clearly increases with advancing age, chronic diseases are not an inevitable consequence of aging. In many cases, their origins are grounded in health-damaging behaviors—including physical inactivity, poor nutrition, and tobacco use—that many people practice every day. Seniors can extend their healthy years and improve their quality of life through simple lifestyle changes. "Older adults who want to remain healthy and active need to be more physically active, eat a healthy diet, and stop smoking," according to Dr. Marks.

However, the principles of disease prevention and health promotion have not been aggressively applied to the problems of older adults. "We focus more on managing illness in older adults than on reducing their behavioral and socioenvironmental risks for these illnesses and resulting disability," noted

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention

Commentary Commentary Commentary

Public Health and Chronic Disease in an Aging Society

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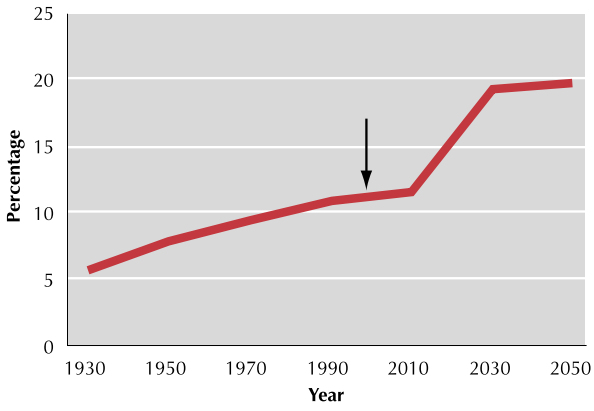
This issue of *Chronic Disease Notes & Reports* is devoted not to the demographics of aging in America, but to the role of public health in an aging society. The demographics of the aging boomer generation, 74 million strong, are, however, an inescapable and arresting phenomenon. After the year 2030, this large cohort will be 65 or older. What we—and they—do now in anticipation of this transition will have far-reaching effects on our future quality of life. Already those older than 65 years account for about a third of national health care spending, a consequence of our successes in addressing infectious disease and pushing the effects of chronic disease to the end of life. Furthermore, the numbers of the "oldest old"—those 85 and older—are also increasing, along with rates of disability and the need for long-term care for this group.

Percentage of U.S. Population Older than 65 years



The implications of this shift, which some have termed the graying of America, are all the more alarming in the light of recent data on obesity and physical inactivity among all age-groups. Although the increase in life expectancy may indicate that Americans enjoy more years of health and activity than in the past, we also know that activity declines with age and that we are heavier and more sedentary than ever before. Increasing longevity is partly due to declining deaths from heart disease and stroke. But this success is countered by the growing number of elderly with functional limitations, who are at greater risk of death from falls, more prone to dementia, and likely to report activity limitations. The "extra" years of life are neither healthy nor active for many older Americans.

Yet the grim picture of a future peopled by hordes of disabled men and women isolated in private homes or long-term care centers is far from inevitable. With well-planned investments in preventive efforts now (directed not only at those older than 65 years, but also at those aged 50–64 years), we can avoid much of the expense and morbidity associated with functional dependence. We must increase our efforts to promote immunization, physical activity, and good nutrition. We can remove barriers to physical activity by creating sidewalks, walking paths, and swimming pools (both walking and swimming are popular with seniors). And we must address the concern of seniors that their changing neighborhoods are unsafe so they will feel free to venture out of their homes and maintain the social networks that are so important to physical and emotional well-being.

Another need is to fill the data gaps related to aging. How much functional change is due to aging, how much to inactivity, how much to behavioral patterns shared by an age cohort? Until we begin to study older adults and include them in surveys and clinical trials, answers will not come easily.

Most importantly, we must improve seniors' quality of life by addressing preventable health risks. Because chronic conditions such as diabetes and arthritis contribute to deteriorating function and often inactivity, they can increase stress and depression, leading to a downward spiral in health status. Smoking cessation, physical activity, blood pressure control, and arthritis and diabetes self-care programs have been proven effective prevention efforts for seniors. Yet the services offered to older adults are sparse. For the sake of our parents, our children, and ourselves, we must do better.

Preventing the Diseases of Aging

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Catherine H. Hennessy, DrPH, Epidemiologist in the Health Care and Aging Studies Branch, Division of Adult and Community Health, NCCDPHP. Because American health care tends to emphasize acute care, many preventive measures for older adults have been neglected. "In the early 1980s, when we began to study the epidemiology of aging, people didn't believe in primary and secondary prevention for the elderly," commented George A. Kaplan, PhD, Chair of Epidemiology at the University of Michigan's School of Public Health. "However, recent research shows that preventive efforts are highly effective even among the oldest old. Physical activity in particular can improve functioning and reduce disease and disability among older adults."

Use of Preventive Services

Although older adults are more likely now than in the past to use preventive health services such as immunizations, there is much room for improvement. In 1997, for example, influenza and pneumonia were the fifth leading cause of death among adults aged 65 years and older in the United States. To reduce the illness and death associated with influenza and pneumococcal infections, national health objectives for the year 2000 include boosting immunization levels for influenza and pneumonia to at least 60% for people at high risk for complications from these diseases, including those aged 65 years and older. Other underused preventive measures, such as mammograms and colorectal cancer screening, could save many lives.

A Healthy Old Age

Major changes in social attitudes and environment will be required if older Americans are to have a healthy and active old age. According to Dr. Kaplan, "Over the last 10 years, there's been an explosion of interest in social factors that affect health, and these factors are now recognized as being as important as medical care and drugs in maintaining and improving the health of the elderly."

Unfortunately, too many Americans expect illness, disability, and dementia to accompany advancing age. Elderly people who base their view of old age on the experience of their parents may expect poor health and never try to improve their health once it begins to deteriorate. Can public health change this belief? "Some people say the three Ds—dementia, disability, and death—are inevitable," said Dr. Kaplan. "But I believe that they can be delayed substantially." Postponing illness and disability caused by chronic diseases ("compression of morbidity") has become a key public health goal.

The physical environment is another factor that affects older people's health and well-being. According to Dr. Kaplan,

The Healthy Aging Project

The Healthy Aging Project was developed jointly by the Health Care Financing Administration (HCFA) and the Agency for Health Care Policy and Research, in consultation with the National Institute on Aging; the National Heart, Lung, and Blood Institute; the Administration on Aging; and the Centers for Disease Control and Prevention. The purpose of the project is to identify what works to promote health and prevent functional decline among older populations.

The Healthy Aging Project is HCFA's first initiative to examine ways to reduce behavioral risk factors among the elderly, which contribute to 70% of the physical decline that occurs with aging. The Healthy Aging Project will look for strategies to reduce behavioral risk factors, such as smoking and physical inactivity, and test promising interventions with Medicare beneficiaries in managed care and fee-for-service settings. Another part of the project will identify ways to promote the use of Medicare-covered clinical preventive and screening services, such as influenza immunizations, colorectal cancer screening, and mammograms. Health care providers could use this information to promote clinical preventive services.

more attention needs to be given to older Americans' housing and neighborhoods. "The issue is to demonstrate that environmental interventions that provide decent living and social conditions can have a positive effect," he said. Such interventions include redesigning neighborhoods to include sidewalks and walking habitats and adding new housing within cities to create mixed-use areas that offer parks, shopping, and services in walking distance for residents of all ages. Homes can also be modified to prevent falls.

Is it harder to reach the elderly with the message that it's never too late to be healthy? Not according to CDC epidemiologist David Buchner, MD, MPH, Chief of the Physical Activity and Health Branch, Division of Nutrition and Physical Activity, NCCDPHP. He believes that the baby boomers will be less tolerant of poor health-related quality of life than their predecessors. "Our generation doesn't do pain and suffering," he said. "We will demand more from the health care system, from health care providers, from medicines, and hopefully, from ourselves."

Arthritis Now a Public Health Priority

There's good news for people with arthritis. For one thing, CDC is expanding its work on these diseases, thanks to a 1999 appropriation of $10 million from Congress expressly for that purpose: a new national plan is in place, new research is under way, and new state programs to help people with arthritis are being set up.

"But the best news is really old news that most people aren't aware of," said Teresa J. Brady, PhD, Senior Fellow, Arthritis Program, Division of Adult and Community Health, NCCDPHP. "Contrary to many people's belief, something can be done about arthritis. Even if we had no more medical advances and developed no new drugs, we can still set up public health programs that will improve quality of life for people with arthritis and reduce the costs associated with these diseases."

"Until recently, private physicians treated each case of arthritis individually, and the public health community was essentially uninvolved," said Robert F. Meenan, MD, MPH, Dean of Boston University's School of Public Health and Secretary of the Arthritis Foundation. "Now, however, we recognize that an epidemic of arthritis is impending, and public health programs are essential."

"The U.S. population is aging," Dr. Meenan continued. "Even if the percentage of people with arthritis stays the same, the number of people with the disease will increase. This means that the number of people with disability will increase, as will the associated health care costs."

"In the United States, arthritis is the leading cause of disability and the second leading cause of work-related disability."

What Is Arthritis?

Arthritis is not a single disease. Arthritis is an umbrella term for a group of more than 100 conditions that involve the joints and surrounding tissues, including osteoarthritis, rheumatoid arthritis, fibromyalgia, lupus, gout, and bursitis. All of these conditions can cause disability and limit people's ability to engage in the daily activities of life.

In the United States, about 1 of every 6 people (43 million) have arthritis, and the disease limits the daily activities of about 7 million people. By 2020, if rates continue at the same pace, 60 million people will have the disease, and 11 million will have activity limitations.

"In the United States, arthritis is the leading cause of disability and the second leading cause of work-related disability," said Joseph E. Sniezek, MD, MPH, Chief, Arthritis Program, Division of Adult and Community Health, NCCDPHP. "As a consequence, reducing arthritis and the disability associated with arthritis is a major public health goal."

"This goal also makes good economic

sense," Dr. Sniezek commented. "A study by Yelin and Callahan* showed that the cost of arthritis in 1992 was $65 billion, almost $15 billion being spent for medical expenses and the rest for indirect costs due to lost wages. Obviously, whatever we can do to reduce those enormous figures is worthwhile."

Myths About Arthritis

"There are three major myths about arthritis we want to dispel," said Dr. Brady. "Arthritis is not necessarily an old people's disease; 60% of the people with arthritis in the United States are younger than 65 years, and about 285,000 of those are children."

"Another myth is that arthritis is a normal part of aging," Dr. Brady continued. "Obviously, that can't be true if children have the disease and half of all people older than 65 years never get it. Of course, the most important myth to dispel is that nothing can be done about arthritis. In fact, there's much that can be done: we can lessen the pain, decrease disability, and reduce the number of doctor visits for arthritis."

Improving Quality of Life for People With Arthritis

So far there is no cure for most arthritis, but the effects of the disease can be reduced considerably. "The key is early diagnosis and appropriate management including good self-management," said Dr. Sniezek. "That's a message the general public needs to hear."

To teach people how to self-manage their disease, Kate R. Lorig, RN, DrPH, Associate Professor at Stanford University's School of Medicine, and her colleagues designed the Arthritis Self-Management Program, which is disseminated by the Arthritis Foundation as the Arthritis Self-Help Course.† Its purpose is to help people gain the skills and confidence they need to manage their symptoms and improve their quality of life. Good self-management includes exercising regularly, maintaining proper weight, and learning enough about the disease so that patient and doctor can make joint decisions about treatment.

"Over the years, we've updated and revised the program," said Dr. Lorig. "We've also evaluated it—as have others—and found that, on average, participants reduce their pain by about 20% over the reductions brought about by conventional treatments. They also reduce the number of visits to the doctor for arthritis by about 40%."

"We believe that less than 1% of the folks with arthritis have taken self-management courses," said Dr. Sniezek. "With the help of the state health departments, health care providers, and private organizations such as the Arthritis

Health Care Costs Increase for Older Adults

The rate of health care inflation has consistently exceeded the general inflation rate in recent years. "Health care costs are rising primarily for two reasons: One is the costs of drugs, and the other is the aging of the population. We can find ways to be more efficient, such as by reducing the unnecessary use of acute care measures, the underuse of preventive services, and the costs of medical errors. But ultimately, legislative changes and more funding will be needed," said Jeffrey Kang, MD, MPH, Director of the Office of Clinical Standards and Quality, Health Care Financing Administration (HCFA).

Advances in medical technology have contributed to increased life expectancy but also have raised health care costs. In 1995, people aged 65 years and older accounted for 13% of the population but 35% of total personal health care dollars spent ($310 billion). Part of this burden results from the need for seven common, costly medical procedures: angioplasty, coronary artery bypass graft, cardiac catheterization, carotid endarterectomy, hip replacement, knee replacement, and laminectomy.

*The economic cost and social impact of musculoskeletal conditions. National Arthritis Work Groups. *Arthritis Rheum* 1995;38(10):1351–62.

†State health departments can get information about setting up the Arthritis Self-Help Course from their local chapter of the Arthritis Foundation.

Foundation, we aim to increase that percentage significantly. These courses are an inexpensive way of reducing a big public health problem, so we need to make attending these courses easy for the people who need them."

How to Be a Healthy Older Adult

Many causes of chronic illness and early death can be prevented with lifestyle changes:

- Stop smoking and limit alcohol intake.
- Be moderately physically active for half an hour on 5 days or more of the week.
- Maintain a healthy weight.
- Eat a diet low in fat to control cholesterol levels.

Although there is no cure for most arthritis, the odds of getting the disease can be reduced. "Prevention is now feasible," said Dr. Meenan. "People can increase their chances of never getting arthritis by controlling their weight and avoiding injuries."

"We're also excited about the new medications available," said William J. Mulvihill, Chair of the Arthritis Foundation. "Just during the past year, advances in pharmaceuticals have produced better treatments with fewer side effects. We are optimistic that, as new treatments are developed, we can eventually stop the progress of the disease."

Exercise and Arthritis

High on the list of things that people with arthritis can do to reduce the pain and symptoms of arthritis is exercise. According to Marian A. Minor, PhD, PT, Associate Professor of Physical Therapy at the University of Missouri, studies done during the past 10 years consistently show that exercise at the conditioning level is beneficial not only at reducing pain but even at reducing swelling in the affected joints of people with rheumatoid arthritis.

"By *exercise at the conditioning level,"* said Dr. Minor, "I mean exercise that is vigorous enough to strengthen muscles and improve the cardiovascular system. And some forms of exercise are better than others. Walking, water aerobics, and riding a stationary bicycle are particularly good for people with arthritis because they don't put too much stress on the joints."

Before starting any exercise program, however, people with arthritis—just like everyone else—should seek advice on what exercises to do, how long to do the exercises, and what to expect as a result of doing the exercises.

"One thing to expect is some discomfort, such as stiff and achy muscles or tiredness in the evening," continued Dr. Minor. "But these have nothing to do with arthritis. They're just the normal sensations anyone—even without arthritis—feels after exercising for the first time. I can't emphasize enough that many new sensations that come with starting to exercise are not connected with arthritis and are not harmful. They'll go away with continued, moderate exercise, as will at least some pain from the arthritis itself."

Working in Partnership

"Arthritis is such a large public health and economic problem that no one group or organization can solve it alone," said Mr. Mulvihill. "Health agencies, academic institutions, medical societies, and nonprofit organizations must work together in partnership if we are to reduce disability due to arthritis. And a critical component of any successful partnership is the state health departments."

Because CDC also recognizes the critical role of state health departments in reducing the disability due to arthritis, the agency gives funds and technical assistance to arthritis programs in 38 states. Most are using the funds to establish new programs. Eight states, however, already have some type of arthritis program and are using the funds to strengthen existing program activities

(e.g., expanding partnerships, increasing training for their staff, or improving their surveillance activities). These eight states are also setting up pilot projects with two main goals: to increase public awareness that something can be done to alleviate the effects of arthritis and to increase the number of people whose disease is diagnosed early and who self-manage their disease well.

In California, for example, the state health department is working with some local chapters of the Arthritis Foundation. "In southern California, we are providing a Spanish version of the Arthritis Self-Help Course to farm workers and transient workers," said Patricia G. Felten, Chief, Center for Gerontology, California Department of Health Services. "In San Diego, the Arthritis Foundation was already working with the St. Vincent de Paul Society and the Catholic Church to provide a free clinic for people with arthritis and had plans to work with the local health department. But the program had no education component, so we're going to fund one. And we're going to develop educational materials for Latinos and Asians, who make up a good number of the patients who'll attend that clinic. We're also developing educational materials for the health care providers who work at the clinic."

"In Santa Rosa, California, we're doing something different," explained Ms. Felten. "There, we're trying to make the city arthritis-friendly. We're working with pharmacies, malls, and local businesses to make them aware of the needs of people with arthritis."

National Arthritis Action Plan

The Arthritis Foundation, the Association of State and Territorial Health Officials (ASTHO), and CDC coordinated the work of more than 90 organizations to write the *National Arthritis Action Plan: A Public Health Strategy*,* which focuses on three areas:

1. Communication and education programs to provide the public and health professionals with accurate and timely information about arthritis.
2. Surveillance, epidemiology, and prevention research to strengthen the base of scientific information about the disease.
3. Programs and policies to encourage behaviors that prevent arthritis or that reduce the effects of the disease for people who already have arthritis.

The Arthritis Foundation, ASTHO, CDC, and other organizations and agencies are already working on many aspects of the plan, published in 1999. And they are enthusiastic about the prospects for success.

Physical activity can reduce the pain of arthritis.

*For a copy of the plan or for further information on CDC's program, contact Joseph E. Sniezek, MD, MPH; Arthritis Program, Mail Stop K–45; CDC; 4770 Buford Hwy.; Atlanta, GA 30341-3717; telephone 770/488-5464; E-mail jes6@cdc.gov.

Diabetes Among Older Adults: A Heavy Burden and a Great Public Health Opportunity

The public health burden of diabetes both in human suffering and economic costs is already enormous; however, for persons aged 65 years or older in the United States, the impact will intensify as the American population ages. In 1995, 12.8% of the U.S. population was aged 65 years or older; this segment is expected to comprise 20% by 2030, increasing the total number of older adults to about 70 million. If diabetes prevalence continues

to increase as the U.S. population ages, the toll in illness, loss of life and quality of life, and medical expenditures may overwhelm our public health system.

Of major public health concern are the debilitating complications that reduce the quality of life. Complications such as blindness, nerve damage, and kidney disease can develop almost twice as fast among elderly patients as in those who are younger, and diabetes complications are more severe in advanced age. Diabetes-related cardiovascular disease (myocardial infarction, stroke, and heart failure) is the deadliest complication of diabetes and the most expensive. Other diabetes-associated health problems afflicting the elderly are visual problems (retinopathy, glaucoma, and cataracts), lower extremity arterial disease, cognitive dysfunction, and depression. The good news is that many of the devastating consequences of diabetes can be prevented or delayed by managing the disease. "Prevention and control measures can and do extend life and enhance quality of life," said Frank Vinicor, MD, MPH, Director, Division of Diabetes Translation, NCCDPHP.

"Prevention and control measures can and do extend life and enhance quality of life."
—Frank Vinicor, MD, MPH, Director of CDC's Division of Diabetes Translation

Research shows that diabetes can be successfully managed, often with improvements to diet, increased physical activity, and medication. Also, routine checkups, such as eye and foot examinations, are crucial to detect and monitor the onset of potentially deadly and disabling complications. Immunizations for influenza and pneumonia prevent these potentially fatal illnesses among older adults with diabetes, who are at higher risk for these diseases. Diabetes education can provide social support and help patients develop self-management skills, learn to watch for complication symptoms, and understand the need for follow-up care. Because diabetes requires daily treatment measures, consistent disease management (by controlling blood glucose levels) is essential to prevent complications. Older adults with diabetes have unique challenges because complications and comorbidities may hinder treatment and limit access to care. "It's a big burden in terms of self-management besides being a serious health problem at a time in life when people are facing a lot of changes," commented CDC Epidemiologist Catherine H. Hennessy, DrPH.

More research is needed on prevention and control measures for chronic diseases, chronic disease incidence and progression, and quality of care among older adults. The Health Care Financing Administration (HCFA), which administers the Medicare program, is modernizing its approach to promote healthy aging through health promotion and risk factor reduction. HCFA wants to increase the use of available preventive and screening benefits, identify effective interventions to reduce risk behaviors, and start programs based on successful interventions. Medicare covers influenza and pneumococcal vaccines, yet in 1995 only 58% of beneficiaries received influenza vaccine. HCFA already provides beneficiaries with diabetes supplies such as glucose monitors, test strips, and lancets; however, Congress recently expanded Medicare coverage to include diabetes self-management. This benefit will reimburse providers for the costs of diabetes self-management education. HCFA is evaluating quality of diabetes care, especially to increase elderly patients' use of eye examinations, annual hemoglobin A_{1c} tests, and lipid level monitoring.

HCFA has found that a multidisciplinary approach is best for older adults with diabetes—working with physicians, patients, and within the health care system to keep providers and patients informed of the latest developments in diabetes care. "We've learned that the more methods applied, the better the success in reaching our patients," stated Connie Forster, Managed Care Specialist, HCFA. "We've got to involve all the players—patients and families, practi-

tioners, pharmacists, and educators." In addition, HCFA is measuring the improvement of care by collecting and publishing Health Plan Employer Data and Information Set (HEDIS) results on how well health maintenance organizations are meeting national performance measures. "The emphasis is on informing beneficiaries as to how well HMOs are providing health services," commented Ms. Forster. "A major concern is that persons with diabetes are not receiving optimum care. We want to improve that record."

Baseline data are needed to assess the current level of care among seniors, and research is needed to determine the natural history of diabetes among the elderly. The increase in diabetes prevalence among older adults seems to be driven by more diagnoses and higher survival rates. Although general diabetes screening is not recommended for older adults because patient benefits would not be realized for several years, research is needed to determine the true incidence of new diabetes cases among older adults, the risk of not being diagnosed, and what prevention and control measures are effective for elderly patients (e.g., do prescription drugs for diabetes work the same among older patients?).

In addition, we need to understand how societal changes have affected family and community support of older adults. "My biggest concern regarding diabetes among the elderly is that the community is not organized to care for people with a chronic disease," stated Medical Epidemiologist Gloria L. A. Beckles, MBBS, MSc, Division of Diabetes Translation, NCCDPHP. A person's environment may be a barrier to care and good quality of life. "We need to find out what's going on in the community and what structural gaps exist," Dr. Beckles emphasized. "A person does not have diabetes in isolation, but within the context of a family and community. Instead of focusing solely on biomedical concerns, social and environmental issues need to be studied to reduce the burden of diabetes."

The new public health approach to healthy aging is to delay the effects of chronic disease that lead to disability. A top priority is to persuade people at young ages to adopt health-promoting practices to avoid diabetes and its complications. Postponing the onset of diabetes would save billions of dollars by reducing by half the number of people who are diagnosed with age-associated diabetes. The main goal is to "add life to years" for persons with diabetes by preventing complications and improving diabetes control efforts such as diabetes education. "We think we can do a better job of managing diabetes among older adults," stated Dr. Vinicor, "and in doing so, improve their quality of life."

Older Adults Bear Brunt of Diabetes Burden

- In 2030, 1 of every 5 persons in the United States will be aged 65 years or older, and currently about 1 of every 5 older adults (18.7%) have diabetes. The prevalence rates for elderly Mexican Americans (29.4%), African Americans (27.3%), and American Indians (27%) are significantly higher.
- In 1997, for persons aged 65 years or older, total direct medical expenditures attributable to diabetes in the United States exceeded $32 billion. The high price of diabetes includes frequent physician and emergency room visits and admissions to hospitals and nursing homes.
- Kidney disease and nerve damage caused by diabetes can result in end-stage renal disease and lower-extremity amputation (LEA). Diabetes-related LEAs are most common among elderly patients: 64% of amputations among persons with diabetes occur among those aged 65 years or older.
- Diabetes is the sixth leading cause of death for persons aged 65 years or older and a major contributor to heart disease, the leading cause of death for this age-group.
- Although the death rate is higher among elderly persons with diabetes than among elderly persons without diabetes, death rates have stabilized among people with diabetes during the past 20 years.

Physical Activity Helps Seniors Age Successfully

Being physically active can prevent many of the most debilitating conditions of old age. Can tomorrow's seniors become—and remain—physically active?

As the baby boomers age, millions of older adults will be suffering from chronic diseases unless preventive measures are taken. Physical activity is one of the most important steps older adults can take to maintain physical and mental health and quality of life. Scientists have proved that being active can help reduce the risk of obesity, high blood pressure, diabetes, osteoporosis, stroke, depression, colon cancer, and premature death. Yet today, more than 60% of older adults are inactive. Seniors face the same obstacles to being more physically active as the rest of us but also have special concerns. What are the obstacles and how can public health address them?

Changing the View of Aging

"Our society and media are full of powerful contradictions, and the image of older people is no exception," write John W. Rowe and Robert L. Kahn in *Successful Aging*. The elderly are sometimes portrayed as debilitated beings in need of supplemental health and life insurance or herbal remedies, and sometimes as vital and active. The truth is that most older adults are neither.

"The good news is that the public perception of the elderly as frail and infirm is quite exaggerated," said David Buchner, MD, MPH, Chief of NCCDPHP's Physical Activity and Health Branch, Division of Nutrition and Physical Activity. "The health of the average 65-year-old is very good. Women of this age have an average of 19 years of life ahead and men, an average of 15 years. As the life expectancy of the boomers has increased, they are less likely to die of infectious diseases and are more likely to suffer from chronic diseases such as diabetes and arthritis. Luckily, physical activity has great benefits that limit or reverse the effects of these conditions. As a result, a new picture is emerging—that of the healthy older adult."

The Challenge to Get Moving

The challenge is getting older adults to be active. The average American lives a long time, but is sedentary and physically unfit. Physicians and exercise experts have heard all the excuses from seniors: It doesn't feel good. It makes my arthritic joints hurt. It takes too much time. It's boring. However, seniors need exercise like everyone else, possibly more than younger adults. In fact, the loss of strength and stamina attributed to aging is in part caused by reduced physical activity.

Walking groups and exercise programs especially designed for older adults can help seniors become—and remain—active. These programs can be promoted through churches and community centers. Senior swim clubs and water aerobic classes are excellent activities for people with arthritis, but you don't see advertisements for these on television or in magazines. "Good role models are effective and important, but they're not in the media—they're in real life," according to

Marian Minor, PhD, PT, Associate Professor of Physical Therapy at the University of Missouri, where she works with seniors in the University of Missouri's physical therapy program.

Environmental Obstacles

A CDC study released in October 1999 shows that the rate of Americans considered obese (more than 30% over their ideal weight) soared from about 1 of every 8 in 1991 to nearly 1 of every 5 in 1998. The reasons are poor diet and lack of physical activity. So the prospects for healthy aging do not seem bright.

William H. Dietz, MD, PhD, Director, Division of Nutrition and Physical Activity, NCCDPHP, blames the design of modern suburbs. "Many suburbs are not designed to be walkable communities—there is a lack of sidewalks and bike trails being built to encourage physical activity; people are more dependent on using their cars to get around."

Some retirement communities and long-term care facilities do a better job of creating environments that foster healthy behaviors. Ann Gallagher, President of the American Dietetic Association, spent 30 years as a consultant on long-term care. "The elderly coming into long-term care today have new demands," she noted. "They want the hallways marked for walking mileage, salads on the menu, and heart-healthy choices in food plans. We definitely have a new breed of health-care consumers."

Seniors benefit from group activities. "Older adults need to be in touch with others who can give feedback on what to expect. Approximately 60% of adults who exercise do so with a companion or in a group. Having a supportive family and friends helps the senior adult stay active," said Dr. Minor.

The Need for Strength

Strength training is recommended for all adults, but it is a vital link to health for older adults. The reason is that strength training prevents sarcopenia, the muscle deterioration that comes with aging, and also helps maintain bone mass. "Stronger people have better health outcomes," Dr. Buchner noted.

However, some elderly people avoid exercise and become sedentary out of fear of falling and fracturing a bone. Joking that "it's well-documented that you have to be moving to fall and break a hip," Dr. Buchner added that emerging data indicate physical activity will prevent falls by improving strength and balance.

Benefits of Physical Activity for Senior Adults

Physical activity has the following special benefits for older adults:

- Helps maintain the ability to live independently and reduces the risk of falling and fracturing bones.
- Can help reduce blood pressure in some people with hypertension.
- Helps people with chronic, disabling conditions improve stamina and muscle strength.
- Reduces symptoms of anxiety and depression and fosters improved mood and feelings of well-being.
- Helps maintain healthy bones, muscles, and joints.
- Helps control joint swelling and pain associated with arthritis.

Keeping Young at Heart

Cardiorespiratory endurance (aerobic) activity is also important. It keeps the heart strong, lowers blood pressure, and relieves anxiety and depression. Older adults can obtain significant health benefits with moderate physical activity, such as walking or gardening provides.

"We need to make physical activity part of the daily routine for older adults," said Dr. Buchner. "Traditionally, health and fitness facilities have marketed mainly to body-conscious younger adults, who focus on the cosmetic effects. If health clubs developed more programs for older adults, they could reach older adults who really enjoy exercise classes."

The Growing Problem of Alzheimer's Disease

An estimated 4 million Americans have Alzheimer's disease, a progressive, degenerative disease that results in memory loss, personality changes, and a decline in thinking ability. The death rate among people with Alzheimer's is twice as great as the rate among those of the same age without Alzheimer's. Although only about 1% of the population have Alzheimer's at age 65, the prevalence doubles every 5 years thereafter. Approximately 10% of people older than 65 years and 47% of those older than 85 years have this disease. Many cases of Alzheimer's go undiagnosed because the lack of effective treatment lessens the motivation for diagnosis. Alzheimer's disease is often present among older people whose death certificates and medical records contain no mention of it.

The risk for Alzheimer's is similar for men and women. Alzheimer's rates are lower among higher socioeconomic groups, but the reasons for this disparity are not known. Some researchers have speculated that occupation and education may be factors; the prevalence of Alzheimer's is also higher among people with lower levels of education. Columbia University studies have found that blacks and Hispanics have a higher risk for Alzheimer's disease than whites.

Viewpoints

"As more people survive into their 70s and 80s, degenerative brain function . . . may be the single most important area of societal need for biomedical research. . . . Many experts believe that major research advances can be made that would allow us to postpone the decline caused by this disease."

—Robert Binstock,
Public Health and Aging

The Growing Burden of Alzheimer's Disease

Because the risk of Alzheimer's increases with age, the aging of the U.S. population has strong implications for the growing prevalence of this disease. The percentage of the U.S. population older than 65 years is expected to increase from 13% to 18% by 2025, and the number of Americans aged 85 years and older is projected to increase from 4 million today to 8.5 million by 2030.

Alzheimer's disease already imposes a great economic and social burden. The estimated annual economic toll of health care expenses due to Alzheimer's and lost wages of Alzheimer's patients and caregivers in the United States is $80–$100 billion. Alzheimer's also creates emotional, physical, and financial stress for both patients and their caregivers, who are frequently their children. The trauma of watching a parent lose functional ability and personality is often compounded by the difficult long-term care decisions that must be made. According to Paul Scherr, PhD, DSc, Epidemiologist, Health Care and Aging Branch, Division of Adult and Community Health, NCCDPHP, the typical married couple, each with two parents, has about a 70% chance of having at least one parent develop Alzheimer's disease.

Alzheimer's Research—Still in the Early Stages

No preventive measures have been found for Alzheimer's disease. Several Alzheimer's-related genes have been identified, and genetic cases are associated with earlier onset; however, genetic factors account for less than 20% of all cases. The primary reason for the lack of knowledge about the causes of Alzheimer's is that Alzheimer's research is fairly new. Although Alzheimer's was first recognized about 1904, it has been studied for only about 20 years. Dr. Scherr noted, "We're still in the early stages of understanding this disease, so there is a great potential for breakthroughs."

The National Institute on Aging (NIA) is the lead federal agency for Alzheimer's research. In 1981, NIA funded four sites to study the elderly with the express

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Communications

March Is Colorectal Cancer Awareness Month

Colorectal cancer is the second leading cancer killer in the United States. According to the American Cancer Society, 56,300 Americans will die of colorectal cancer in 2000. CDC is working with other federal and national organizations to increase awareness and to educate people about colorectal cancer prevention measures such as having regular screenings and adopting healthy lifestyles. CDC sponsors "Screen for Life—The National Colorectal Cancer Action Campaign," which encourages persons aged 50 years or older to discuss colorectal screening with their physicians. For more information about colorectal cancer, visit www.cdc.gov/cancer and www.cdc.gov/cancer/screenforlife or contact Kymber Williams at 770/488-4751 or knwo@cdc.gov.

Patient Care Diary for People With Diabetes

The Florida Department of Health Diabetes Control Program has developed a diabetes care diary designed for patient use in managing diabetes. The diary outlines recommended diabetes care and treatment measures, such as annual eye and foot examinations, influenza immunizations, and quarterly hemoglobin A_{1c} tests. Also included is a patient flow sheet to be placed in a patient's medical record as a tool for health care providers. The diary is conveniently sized—it folds into the size of a credit card. Patients are encouraged to use the diary as a self-management tool along with blood glucose logs. A follow-up survey will be conducted to determine the effectiveness of the diaries. For more information, contact Bonnie Gaughan-Bailey or Barbara Fowler in the Florida Diabetes Control Program at 850/245-4330.

Conferences

Coming Together for the New Millennium

The 2000 National Oral Health Conference will take place May 1–3, 2000, at the Hyatt Regency Hotel in Oak Brook, Illinois. This conference will be the first annual meeting of the Association of State and Territorial Dental Directors (ASTDD) and the American Association of Public Health Dentistry (AAPHD). The conference is sponsored by the Centers for Disease Control and Prevention, Health Resources and Services Administration, ASTDD, and AAPHD. Topics include maternal and child health issues, the upcoming *Surgeon General's Report on Oral Health*, and the new *Healthy People 2010* oral health objectives. For more information, contact Bridgette Smith at 770/488-6056 or visit the following Web sites: www.astdd.org and www.aaphd.org.

Pregnancy Risk Assessment Monitoring System (PRAMS) 2000

The PRAMS 2000 National Conference will be held June 7–9, 2000, at the Empire State Plaza in Albany, New York. Representatives from PRAMS participating states and CDC staff will discuss PRAMS operations, findings, and future directions. This biennial meeting is an opportunity for networking among PRAMS state participants and is open to others interested in PRAMS. For more information, contact Nedra Whitehead at nsw1@cdc.gov or Mary Lyn Gaffield at meg4@cdc.gov or 770/488-5227.

The Face of a Child—Surgeon General's Conference on Children and Oral Health

The Surgeon General's Conference on Children and Oral Health will take place June 12–13, 2000, at the Hyatt Regency Hotel in Washington, D.C. Oral health as an indicator of social and health problems among children and other issues related to children's oral health will be addressed in plenary sessions, panels, and discussion groups. For registration information, contact Estella Lazenby at 301/588-6000, E-mail: elazenby@kevric.com. For additional information, visit http://www.nidcr.nih.gov/sgr/children/children.htm.

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CDC Diabetes Translation Conference 2000

CDC's Division of Diabetes Translation (DDT) will be hosting its national conference on April 17–20, 2000, at the Sheraton Hotel in New Orleans, Louisiana. Conference objectives include increasing knowledge of successful, cost-effective approaches to reducing the health and economic burden of diabetes. The conference will bring together a wide constituency of local, state, federal, territorial, and private-sector diabetes partners to explore science, policy, and education as they relate to reducing the burden of diabetes. For more information, contact Norma Loner at 770/488-5376 or nbl1@cdc.gov.

18th National Conference on Health Education and Health Promotion

The Society of Public Health Education (SOPHE), the Association of State and Territorial Directors of Health Promotion and Public Health Education (ASTDHPPE), and CDC are hosting Health Promotion Excellence in the New Century: Ascending to New Heights from May 16–19, 2000, at the Adam's Mark Hotel in Denver, Colorado. This year's conference will emphasize the knowledge and skills necessary for health education professionals to influence public health practice in the new century. For more information, visit www.astdhppe.org or contact John Korn at 770/488-5427 or jmk3@cdc.gov.

15th National Conference on Chronic Disease Prevention and Control

The National Center for Chronic Disease Prevention and Health Promotion will host its 15th national conference November 29–December 1, 2000, at the Washington Hilton and Towers in Washington, D.C. Learn the latest about emerging chronic disease issues, data applications, and intervention research; network with health and other professionals; forge new working relationships; and discover what others are doing in communications, training policy, and partnership development. For more information, contact Dale Wilson at 770/488-5885 or dnw3@cdc.gov.

Sixth Annual Maternal and Child Health Epidemiology Conference

The 2000 Maternal and Child Health Epidemiology Conference will be held December 12–13, 2000, in Atlanta, Georgia. The deadline to submit abstracts is May 1, 2000. The theme of this year's conference is "Reducing Disparities in Maternal and Child Health Outcomes." For more information, visit http://www.uic.edu/sph/dataskills/mchep99/ or contact Jessie Richardson at 770/488-5187 or jur4@cdc.gov.

Information Sources

National Program of Cancer Registries—Cancer Surveillance System (NPCR-CSS)

Now on-line, a new policy resource document, NPCR-CSS Rationale and Approach, presents CDC's plan for using cancer data from states funded by NPCR. The NPCR-CSS is designed to provide cancer incidence data that meet CDC's responsibilities for public health surveillance. For more information, visit http://www.cdc.gov/cancer/npcr/new.htm.

New CDC Guidelines Newsletter Available

Readers are invited to review the first issue of *Update: Tips for Implementing CDC School Health Guidelines* at http://www.eta.aed.org/. The Academy for Educational Development offers the newsletter under its contract with CDC. The purpose of the newsletter is to provide assistance and support to state and local efforts to carry out CDC guidelines on promoting lifelong physical activity and healthy eating and on preventing tobacco use and addiction. Each issue will focus on one of three specific guideline topics. The premiere issue focuses on the "new" physical education, a new philosophy centered on getting young people interested and involved in physical activity for a lifetime. For more information, contact Susan Stine of the Academy for Educational Development at 202/884-8839.

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NCCDPHP News

CDC Public Health Advisor Honored for Reproductive Health Work

Susanna Binzen, MPH, Division of Reproductive Health, received the Outstanding Young Professional Award from the Population, Family Planning, and Reproductive Health Section of the American Public Health Association (APHA) at the APHA conference on November 9, 1999, in Chicago, Illinois.

CDC Director of Teen Pregnancy Prevention Recognized

Carol Cassell, PhD, MPA, Division of Reproductive Health, was one of the honorees at the 20th Celebration for the National Organization on Adolescent Pregnancies, Parenting, and Prevention on November 19, 1999, in Washington, D.C. The "Spirit of Service Award" was presented in honor of her national contributions in the area of adolescent reproductive health and adolescent pregnancy prevention.

CDC Division of Adolescent and School Health Receives Award

Eta Sigma Gamma, National Professional Health Education Honorary, presented its 1999 Honor Award to CDC's Division of Adolescent and School Health (DASH) for its dedication to the field of health education. DASH Director Lloyd Kolbe, PhD, accepted the award during the American School Health Association's annual national conference on October 25, 1999, in Kansas City, Missouri.

Arthritis Foundation Honors NCCDPHP

CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) received a Partnership Award from the Arthritis Foundation at its annual meeting in November 1999. NCCDPHP works closely with the Arthritis Foundation and other partners to implement the *National Arthritis Action Plan: A Public Health Strategy.*

CDC's Diabetes Director Vinicor Recognized

The American Diabetes Association, Heartland Region, Indiana/NW Ohio Area honored Frank Vinicor, MD, MPH, Director of CDC's Division of Diabetes Translation with the Josiah Kirby Lilly, Sr., Distinguished Service Award in November 1999. The award is presented annually to persons who significantly influence our understanding of diabetes, our ability to provide health care to people with diabetes, and our mission to improve the quality of life for individuals and their families.

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Alzheimer's Disease

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purpose of collecting health-related data to inform policy decisions on this growing population. A study in one of these sites has focused on Alzheimer's disease with the goal of finding risk factors for the disease that might be targets for interventions.

CDC is collaborating with NIA-funded studies to investigate the epidemiology of Alzheimer's. Through these studies, researchers are trying to determine the prevalence and incidence of the disease in different populations; possible risk factors, including age, race, sex, diet, socioeconomic factors, and medical conditions such as high blood pressure; and the effect of these factors on disease progression. According to Dr. Scherr, the need for surveillance and further epidemiological studies is clear.

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