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Assessment of Title III-D of the Older Americans Act: Disease Prevention and Health Promotion Services

Final Report

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RTI INTERNATIONAL

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SECTION 1
OVERVIEW

1.1. Introduction

Health promotion and disease prevention for older adults are among the top priorities for the Administration on Aging. In fact, the second priority of the Administration on Aging's strategic plan is to help older people stay active and healthy. The AoA plays an important role in the larger federal effort to promote healthy lifestyles, particularly among the older population. Although illness and disability rates increase with age, a large body of research demonstrates that health promotion and disease prevention activities can help ensure healthy and independent lives for older Americans. For example, exercise and other health promoting behaviors have been shown to improve aerobic power, strength, balance, and flexibility, while decreasing acute medical problems such as fractures, myocardial infarctions, and cerebral vascular accidents in older persons. Screenings, such as mammograms and evaluations of stool specimens, have been shown to decrease morbidity and extend life in this group as well.[1] The AoA, along with its other federal partners, strives to use this evidence-based knowledge to improve the health and independence of the nation's seniors.

As part of these efforts, the Administration on Aging administers the Older Americans Act, Title III-D funds to support disease prevention and health promotion services. This portion of the Older Americans Act requires that disease prevention and health promotion services and information be provided at senior centers, meal sites, and other appropriate locations, giving priority to areas of the state which are medically underserved and in which there are large numbers of older individuals who have the greatest economic need for these services. Designated funding for these activities is intended to provide seed money for developing health promotion and disease prevention programs with other community partners and to serve as a catalyst in developing health promotion and disease prevention activities. In 2003, Congress appropriated a total of $21.9 million for Title III-D preventive health services as part of a Title III budget of $1.25 billion. In addition, the Administration on Aging supports other health promotion activities by hosting a national summit on health promotion; funding the National Resource Center on Nutrition and Physical Activity and the National Resource Center for Evidence Based Programs; and working with the Centers for Disease Control and Prevention, the National Institute on Aging, the Agency for Health Care Research and Quality and the Centers for Medicare and Medicaid Services to develop coordinated health promotion strategies.

The locus for implementation of all Administration on Aging programs is the Aging Network, which was created by the Older Americans Act in 1965. The Aging Network includes

56 State Units on Aging, 655 Area Agencies on Aging, 236 Tribal and Native organizations representing 300 American Indian and Alaska Native Tribal organizations, and two organizations serving Native Hawaiians, plus thousands of service providers, adult care centers, caregivers, and volunteers. There are also over 30,000 community service providers who deliver Older Americans Act services on behalf of local Area Agencies on Aging.

This final report summarizes a set of studies RTI International conducted for the Administration on Aging to provide information on the implementation of the Title III-D programs of the Older Americans Act. The goal of this study is to assess how the Aging Network uses Title III-D funds as a catalyst to develop health promotion and disease prevention programs for older Americans. This information will be important for assisting states and communities wishing to replicate these types of efforts and for assisting state and federal decision makers in planning the future of the Title III-D program.

1.2. Research Questions

In order to assess the implementation of Title III-D, the project has seven principal research questions:

- How do health promotion and disease prevention activities fit into the overall activities of the Aging Network?
- Has the Aging Network leveraged the small amount of Title III-D dollars to develop larger health promotion and disease prevention programs?
- Have the Area Agencies on Aging developed partnerships with other organizations to create more extensive health promotion programs for older people?
- Have Area Agencies on Aging developed and chosen model programs that are evidence based?
- How comprehensive are the health promotion and disease prevention activities of the Area Agencies on Aging?
- Have programs been implemented on a widespread basis, involving large numbers of older people?
- Is broad data about program participants and the effectiveness of the programs available and used by program managers and administrators?

1.3. Project Components

Three primary methods—a literature review, expert interviews and case studies--were used to gather data on the implementation of Title III-D. This report summarizes the findings of the study. The complete literature review and detailed individual case study reports are also available from the Administration on Aging.

1.3.1 Literature Review

RTI refined the study questions and identified potential case study sites through an extensive literature review on the state of the art in evidence-based health promotion and disease prevention efforts for the elderly.[1] The review aided in refining the conceptual framework for the study and to identify areas where these programs were effective with senior populations.

1.3.2. Expert Interviews

Experts in the field were interviewed to collect input on current efforts underway in the private sector, the extent to which groups are evaluating these health promotion and disease prevention efforts, and the types of health promotion activities that were considered most effective with the senior population. The experts also assisted in selecting a set of eight case study sites, recommending different features that were important for inclusion. In addition, these interviews helped coordinate this study with other related efforts in the field. The experts represented national associations, such as the National Association of State Units on Aging and the National Council on the Aging staff as well as national and local program managers and researchers. Regional and national Administration on Aging staff also provided valuable input.

1.3.3 Case Studies

RTI conducted case studies of eight selected Area Agencies on Aging to gain a better understanding of the Aging Network’s involvement in health promotion activities. The case studies build on the other sections of this study and represent the largest component of the evaluation.

SECTION 2
LITERATURE REVIEW

Health promotion attempts to improve health by influencing behavior and the surrounding social and physical environments that may facilitate or impede behavioral change. Research indicates that health promotion and disease prevention interventions for older adults often lead to positive health outcomes and, frequently, economic benefits in reduced healthcare costs. The following literature review on health promotion and disease prevention focuses on intervention studies conducted among community-dwelling older Americans during the past 5 years in the following subject areas:[1]

- disease management,
- falls prevention,
- medication management,
- nutritional counseling,
- physical activity,
- smoking cessation, and
- use of clinical preventive services.

The review focused on these seven areas because there was sufficient evidence to support the use of health promotion/disease prevention on these topics among samples of community-based older Americans.

Articles were identified and selected for the literature review through a thorough an examination of existing literature focusing on health promotion and disease prevention among older adults. First, a series of general MEDLINE searches was conducted, using terms such as health promotion and disease prevention, healthy aging, successful aging, and self-care and aging. Next, focused literature searches on each health promotion/disease prevention topic listed above using both MEDLINE and AARP's AGEINFO search engines were conducted. Then, these literature searches were supplemented with bibliographic reviews of textbooks, journal articles, and government reports. Copies of all relevant articles and textbooks that had been identified from our searches were obtained. Finally, all articles and texts were reviewed to refine our selection, retaining only those that were relevant to each topic and met the following three criteria:

- made use of rigorous quantitative evaluation methods (i.e., experimental or quasi-experimental designs and rigorous statistical methods);
- focused specifically on samples of older, community-dwelling Americans; and
- were conducted within the past 5 years.

As a result, the literature review summarized here contains the most recent, relevant, and scientifically-based research available to those interested either in implementing or better understanding these types of health promotion programs for older Americans residing in the community. The following section discusses each of the eight areas included in the literature review. ***Appendix A*** summarizes the literature in these areas in tabular format.

2.1 Disease Management

Chronic disease is the principal cause of disability and the primary reason for seeking health care, accounting for 70 percent of all health care expenditures.[2] There have been major advances in the medical and surgical care of chronic disease, but until recently little was done to help patients with self-management of chronic diseases over the long term.[3] Patients must cope with pain and disability and follow treatment regularly. In addition, they have to modify behaviors to minimize unwanted outcomes, adjust their social and work lives to accommodate their functional limitations and symptoms, and deal with the emotional consequences of disease.[4]

Because of the large impact of chronic disease on health status and health care expenditures, there has been a growing interest in self-management programs. These programs emphasize the patient's central role in managing his/her illness. Disease self-management programs are designed to help patients with medical management, maintaining healthy lifestyles, and managing negative emotions such as fear and depression. In addition, these programs provide patients with the necessary knowledge, skills, and confidence (self-efficacy) to deal with disease-related problems. Finally, self-management programs prepare patients to collaborate with their health care professionals and the health care system.

A number of studies have been conducted to determine both the efficacy and effectiveness of disease management programs on older persons suffering from chronic pain, diabetes, arthritis, and other chronic health conditions. Recent studies have increasingly followed their patients over longer periods of time. Although not all self-management studies have been able to follow their patients and/or document positive effects over the long-term, a number of important interventions have recently followed subjects for several years post-intervention (see Lorig et al.'s work[3,5] and that of the Diabetes Prevention Program Research Group[6]). These

large, rigorously-designed disease management studies have reported significant, favorable long-term outcomes on a number of important health measures that resulted from active participation in disease management programs. ***Exhibit A-1*** summarizes some of the most recent and rigorously implemented tertiary prevention programs to manage chronic diseases among older Americans.

2.2 Falls Prevention

Falls are the leading cause of injury-related visits to the emergency room in the United States and the primary cause of accidental deaths in persons over the age of 65.[7] Once an older person falls, a downward spiral often begins.[8,9] The mortality rate for falls increases dramatically with age for both genders, and all ethnic and racial groups, with falls accounting for 70 percent of accidental deaths in persons aged 75 and over.[7] More than 90 percent of hip fractures occur as a result of falls, with most of these fractures occurring in persons over 70 years of age. One-third of community-dwelling older persons and 60 percent of nursing home residents fall each year.[7]

To reduce the likelihood and consequences of falls, a variety of preventive interventions have been developed. Reducing environmental hazards in the home and increasing patient flexibility and balance have been the primary focus of these efforts. Results from these studies indicate that intervention group subjects improved their flexibility, balance, and falls efficacy relative to control group subjects at intervention follow-up. ***Exhibit A-2*** summarizes some of the most recent interventions on falls prevention for older, community-dwelling Americans that were conducted either in facility-based group or in-home settings.

2.3 Medication Management

More than 10,000 prescription drugs are currently available to Americans, and over a billion prescriptions are dispensed per year.[10] There are also countless over-the counter medications consumed, including 600 that would have required the use of a prescription just a few years ago.[10] Because vulnerability to chronic disease increases over time, medication usage becomes more typical with age. Older persons rely on drugs to alleviate pain and discomfort and to give them a sense of security and control in sometimes difficult health situations.[10]

Drugs, however, can make matters worse as well as better. The potential for serious adverse drug reactions is great. In fact, according to the National Council on Patient Information and Education, an estimated 125,000 Americans die each year from prescription drug misuse.[11] On an outpatient basis, approximately 5 percent of Medicare patients are made ill by their

medications during the course of a year, leading to as many as 1.9 million drug related injuries.[12] More than half of these adverse drug events are preventable, ranging from monitoring mistakes made by physicians, to failure of patients to adhere to medication instructions.[10] To avoid adverse drug reactions, patients need to comply with their medication regimen, report unexpected side effects, and use caution with over-the-counter (OTC) medications. Conversely, physicians need to take a complete drug history; carefully examine the dosage; communicate the rationale for the drug treatment, the expected response, and common side effects; and monitor patient reactions.

Overprescribing is common as well. Polypharmacy, the use of more medications than are clinically indicated, is common among older adults since most of the chronic conditions associated with aging are potentially responsive to medications.[10] This leads to the increased risk of multiple drug use among older adults, which is also complicated by the fact that many older patients visit multiple health care providers. Although the risk of potential drug interactions and duplication of prescriptions has been reduced to some extent in recent years due to the use of computers by almost all pharmacies in this country, many pharmacies still do not have complete records on all the medications used by their clients.[10]

Exhibit A-3 summarizes the literature on recent interventions that have been conducted to help older adults and their physicians to better manage patients' use of prescription and/or nonprescription medications. Although physicians have resisted some of the medication management programs to oversee their prescribing behavior, when adopted, the programs generally have been successful in reducing the risk of polypharmacy among older patients.

2.4 Nutrition Counseling

It is well known that many children eat poorly, replacing milk with soft drinks and trading in sandwiches for candy at school.[13] What is not so well known, however, is that many older people eat poorly as well. A combination of long-term bad health habits, sometimes poverty, dental problems, and lack of knowledge about the nutritional requirements of aging all play a part.[13]

Over the past few years, a number of health promotion interventions have been implemented to improve the nutritional health status of older individuals. Most of these studies have focused on controlling high blood pressure, cholesterol, and type 2 diabetes, and on preventing osteoporosis by increasing calcium intake. Although the majority of nutritional interventions cited below led to health status improvements, not all of the positive effects of

these nutritional counseling programs were maintained over extended periods of time. ***Exhibit A-4*** summarizes some of the best studies that have been conducted over the past few years to test the efficacy and/or effectiveness of nutritional counseling among community-dwelling older adults.

2.5 Physical Activity

Physical and psychological benefits of increased physical activity have been widely documented in healthy and chronically ill older adults.[14-16] Despite this information, older adults remain largely sedentary.[17,18] Only 12 percent of adults aged 75 and older engage in moderate physical activities lasting 30 minutes 5 or more days of the week, and 65 percent report having no leisure physical activity.[16] In response, Healthy People 2010 objectives focused on increasing physical activity for vulnerable populations, such as older persons.[16]

During the past 5 years, the number of studies designed to increase general physical activity or aerobic exercise by aging adults has increased dramatically. An increasing number of recent studies measured their impact on subsequent physical activity and behavioral health outcomes for older adults. The results of these rigorous studies indicated that those participating in the exercise intervention had improved functional and/or health status outcomes relative to control group participants. In some cases, however, the positive effects of the physical activity intervention were not sustained over a long period of time. ***Exhibit A-5*** summarizes some of the most recent, rigorously evaluated interventions on physical activity for older, community-dwelling Americans that were conducted in either facility-based group or in-home settings.

2.6 Smoking Cessation

Smoking remains the single most preventable cause of morbidity and mortality in the United States, even among older people.[19] In 1990, more than 75 percent of the estimated 5 million years of potential life lost due to smoking-related causes occurred among those aged 65 or older.[19] Research has shown that those who continue to smoke after age 65 have a higher overall risk of morbidity and mortality than those who do not.[20] Older smokers have higher use of health maintenance services, and smoking tobacco/use compromises the efficacy of many necessary medications prescribed for older adults.[20] Therefore, reducing smoking by older people has been recommended as an important part of any agenda to promote healthy aging, as well as a means to help control health care costs.[10,21]

Although the prevalence of smoking among the U.S. older population decreased somewhat in recent years, the actual number of smokers is expected to increase with the aging of

the baby boom generation. In 1994, there were 33 million people aged 65 and older; by 2020, there will be 53 million.[19] Over 80 percent of individuals aged 65 and older have at least one chronic disease condition requiring medical attention.[22] Many of these conditions are caused or exacerbated by smoking.[19]

While few smoking cessation interventions have been developed specifically for older adults, a number of secondary data analyses have been conducted to determine smoking patterns among seniors and the role of smoking and other modifiable lifestyle risk factors in maintaining and restoring lower body mobility in older Americans.[19,23] In addition, the recently implemented Medicare Stop Smoking Program (MSSP), funded by the Centers for Medicare & Medicaid Services (CMS) to determine the most effective overall benefit option for smoking cessation among noninstitutionalized older Medicare beneficiaries, will provide important new data on ways to encourage older adults to stop smoking.[10] Data will be collected at enrollment into the program, and at 6- and 12-month follow-up in each of the seven states selected for demonstration participation. Outcomes to be examined include smoking cessation point prevalence, number of quit attempts, reach acceptance, utilization, and satisfaction. Cost-benefit and cost-effectiveness analyses are also planned. Results from this demonstration program will help policy makers identify the most effective and cost-effective ways to intervene to promote smoking cessation among Medicare smokers who are actively interested in quitting.[19]

While the number of interventions designed to reduce smoking among older adults has been relatively small, these experimental studies, combined with results from analyses of large secondary data sets, have provided evidence to suggest that older adults who want to stop smoking can learn to stop. Successful interventions designed for older adults have developed telephone quitlines and smoking cessation campaigns initiated in outpatient medical offices. Other factors that have been associated with the likelihood of success in quitting have included the patient's readiness for change, the number of prior quit attempts, age, the number of medical office visits, and physician counseling to encourage smoking cessation. ***Exhibit A-6*** summarizes the most recent studies available that have either analyzed large secondary data sets or provided results of interventions to help older Americans to stop smoking.

2.7 Use of Clinical Preventive Services

In 1984, the U.S. Preventive Services Task Force[24] developed a series of recommendations on preventive services for medical providers based on a comprehensive review of clinical effectiveness.[10] The conclusions were published in the Guide to Clinical Preventive Services, which catalogued 60 preventable diseases and conditions (many of which applied to

older adults) and provided guidelines to help health care professionals select primary, secondary, and tertiary prevention interventions that were most appropriate for their patients.

In 1996, a second guide was published,[25] with the number of topics covered increased to 70. Beginning in 2001, in lieu of a one-volume third edition, the U.S. Preventive Services Task Force began issuing new and updated guidelines on an ongoing basis. Topics included a wide variety of screening and counseling recommendations, such as breast cancer screening, colorectal cancer screening, immunizations, and counseling to promote physical exercise.

Recommendations in the guide were based on a rating system that gave the most weight to research based on randomized controlled trials, followed by well-designed trials without randomization. The least weight was given to the opinions of respected authorities or expert committees, descriptive studies, and case reports. “A” and “B” recommendations were based on good evidence to support the recommendation that a condition be specifically considered in periodic health examinations. “C” recommendations indicated insufficient evidence for making a recommendation for or against inclusion; and “D” and “E” recommendations were based on good evidence for exclusion.

“A” and “B” recommendations for individuals aged 60 and older included influenza and pneumococcal immunizations, as well as screenings for breast cancer, colorectal cancer, and hypertension. The literature review concentrates on the “A” and “B” recommended clinical preventive services, focusing first on interventions designed to increase immunizations and second on interventions designed to increase clinical screenings for community-dwelling older adults.

2.7.1 Immunizations

For many years, the estimated number of annual U.S. deaths attributed to influenza and pneumonia combined ranged from 20,000 to 40,000.[10] In 2003, however, using improved statistical models, the Centers for Disease Control and Prevention’s (CDC) estimated that 36,000 persons die annually from flu-related complications alone.[10] This revised estimate was due, in part, to the aging of the U.S. population, and that pneumonia is three times more prevalent among those aged 65 and older than among younger persons[10] and that more than 90 percent of the deaths from flu and pneumonia occurred in people aged 65 and older.[10] The widespread use of influenza and pneumococcal vaccines could prevent up to 60 percent of these deaths among older persons.[26] Serious illnesses could also be reduced, as documented in a recent study that reviewed data from 286,000 persons over age 65 and found that an older person’s chance of

being hospitalized for heart disease or a stroke is sharply reduced during the flu season that followed a vaccination.[27]

The U.S. Preventive Services Task Force[25] has recommended that the pneumococcal vaccine be administered to persons aged 65 and older at least once during a lifetime, with possible revaccination for older persons with severe comorbidity after 5 years. Although there has been a substantial increase in the number of pneumococcal vaccinations, almost half of all older adults still remain unvaccinated.[10] The U.S. Preventive Services Task Force also recommended that the influenza vaccine be administered annually to all persons aged 65 and older. Although the receipt of influenza vaccines has increased dramatically since Medicare began paying for influenza shots for the nation's older and disabled populations, the proportion of older persons receiving this vaccine is still considerably below the Healthy People 2010 goal of vaccinating 90 percent of all older adults.[10,28]

Exhibit A-7 provides a review of rigorous, recent health promotion interventions designed to increase the use of pneumococcal and influenza vaccines among community-based older Americans.

2.7.2 Health Screenings

Health screening is designed both to reduce premature morbidity and mortality and to preserve function and quality of life. Secondary prevention is considered to be most effective among older patients when (a) there is a high likelihood that if allowed to progress, the disease will undermine quality of life and shorten longevity; (b) intervention during the asymptomatic phase will reduce morbidity and mortality more effectively than management of disease after symptoms appear; and (c) effective treatments are available.[29] If these conditions are not satisfied, screening has little value.[29,30]

Age 85 has been proposed as a general cutoff range beyond which conventional screening tests are less likely to be of continued benefit.[30] However, screening for cervical cytology (the "Pap" test) and screening for cholesterol for persons 65 and older currently lack scientific evidence to support them. As a result, the Task Force has not been recommend them, except when there are individual reasons why continued screening is warranted.[25,29]

Exhibit A-8 presents some of the most recent literature on screening interventions that have been conducted to help promote the health of community-based older persons. The focus of this discussion is on those screening tests that have been consistently recommended, widely

available, and efficacious for persons aged 60 and older: breast cancer screening, colorectal cancer screening, and blood pressure screening.[10,25,30]

SECTION 3
EXPERT INTERVIEWS

Experts in the field were interviewed to collect input on current efforts underway in the private sector, the extent to which these health promotion and disease prevention efforts are being evaluated, and the types of health promotion activities that were considered most effective with the senior population. These interviews were useful for selecting the eight case study sites and in coordinating our efforts with other related efforts in the field. The experts represented national associations, such as the National Association of State Units on Aging (NASUA) and the National Council on the Aging (NCOA) staff as well as national and local program managers and researchers. Valuable input was also provided by regional and national AoA staff. A list of TAG participants is shown in ***Exhibit 1***.

In assisting with the selection of the set of eight case study sites, these experts commented on different features that were important for inclusion, including several national evidence-based HPDP efforts for older Americans. As a result, case study programs were selected to include models based on:

- The National Blueprint on Aging: Increasing Physical Activity Among Adults Age 50 and Older. This effort is funded by a coalition of agencies, including the Robert Wood Johnson Foundation and AARP, which have identified barriers to physical activity participation in older adults and provided mini-grants to communities that help midlife and older persons engage in physical activity.

- The Senior Wellness Program. This behavioral health and wellness program was initially based in Seattle, Washington, but has been used in other locales. Washington is collecting evaluation information from all its sites.

- The National Council on the Aging's Center for Healthy Aging Best Practices Program.

- The Robert Wood Johnson Foundation's Active for Life Wellness Program for sedentary older persons.

- The Archstone Foundation's Award for Excellence in Program Innovation.

- The Centers for Disease Control and Prevention's (CDC) Prevention Research Centers.

- The CDC's Healthy Aging Network (HAN) program.

Exhibit 1
Technical Advisory Group Members

The following individuals served as TAG members for the Evaluation of the Disease Prevention and Health Promotion Services Program of the Older American Act:

- Nancy Whitelaw, Ph.D., National Council on the Aging
- Marcia Ory, Ph.D., Texas A & M University and Project Director, Active for Life Program
- Jim LoGerfo, M.D., University of Washington, Director of the CDC-funded Prevention Research Center, and also Co-Director of the Healthy Aging Network (HAN) Program
- Mary Altpeter, University of North Carolina, Co-Director of HAN
- Pam Piering, Director of King County Aging and Disability Services in Seattle, Washington
- Stephanie Stein, Director of Milwaukee County Department on Aging
- Allan Goldman, Assistant Director, Georgia Division of Aging Services
- Robin Mockenhaupht, Robert Wood Johnson Foundation
- Larry Branch, Ph.D., University of South Florida

These models represented national programs which were based on evidence-based efforts. Many have evaluation components as part of their design although data collection may be limited.

The expert panel also helped identify health promotion activities that have been found to have an impact on older populations. This discussion built on the findings from the literature review and helped narrow the focus to the types of programs where seniors are most likely to benefit.

SECTION 4
CASE STUDIES: OVERVIEW

This chapter provides an overview of the eight sites that were selected for case studies, why they were selected, their principal health promotion and disease prevention programs, and their main partners. These sites were selected, in part, because of their relatively heavy use of evidence-based programs. They varied in the types of interventions discussed in the literature review and Expert Panel interviews, and in terms of geographic location, ethnicity of the populations served, and types of community partnerships **(*Exhibit 2*** for statewide demographic information).

Exhibit 2. Statewide Demographic Characteristics (in percent)

	2003								2000
	60+%	85+% (within 60+)	Growth of 60+ population since 1990	Caucasian	African American	American Indian/Alaska Native	Asian	Hispanic/ Latino	% 60+ below poverty level
State									
Arizona	17.0	8.5	50.0	83.6	1.7	2.5	1.2	10.5	8.6
California	14.3	9.6	19.8	66.1	5.4	0.5	11.3	15.7	8.5
Delaware	17.6	8.7	29.7	84.5	11.9	0.3	1.4	1.4	7.7
Florida	21.9	10.0	22	79.3	7.2	0.2	1.0	11.9	9.3
Georgia	13.3	8.4	28.9	77.0	19.4	0.2	1.4	1.6	12.9
Maine	19.2	10.1	15.3	98.6	0.2	0.2	0.3	0.3	10.2
Ohio	17.6	9.8	5.8	89.5	8.4	0.1	0.7	0.8	8.3
Washington	15.3	10.3	22.8	89.4	1.8	0.9	4.7	2.2	7.7
National Average	17.0	9.6	10.0	81.4	8.5	0.5	2.9	6.1	10.3

NOTE: Red denotes higher rates than the national average.

SOURCE: Census 2003 Population Estimates: July 1, 2003, http://www.census.gov/popest/datasets.html

4.1 Sites Selected

To understand how any Older Americans Act service is provided to older adults, it is important to gather information at the Area Agency on Aging level. RTI visited eight sites:

- Area Agency on Aging, Region One, Maricopa County, Phoenix, Arizona;
- Los Angeles County Area Agency on Aging, Los Angeles, California;

- Division of Services for Aging and Adults with Physical Disabilities, Delaware Department of Health and Social Services, Wilmington, Delaware
- Senior Resource Alliance (AAA of Central Florida), Orlando, Florida;
- Division of Aging Services, Atlanta Regional Commission, Atlanta, Georgia
- Southern Maine Agency on Aging, Portland, Maine;
- Council on Aging of Southwestern Ohio, Cincinnati, Ohio; and
- Aging and Disability Services, Seattle, Washington.

The complete case studies are available on the Administration on Aging website, http://www.aoa.gov.

4.2 Area Agency on Aging, Region One (Phoenix, Arizona)

Region One is responsible for planning, developing, coordinating, funding, administering, and delivering services for four populations in Maricopa County: older adults (age 60 and above), family caregivers of older adults, adults age 18 to 59 with disabilities and long-term care needs, and people diagnosed with HIV/AIDS, regardless of age.[31] Region One has a long-term commitment to providing health promotion and disease prevention programs, and is an active advocate for elder health through networking, innovative and culturally-sensitive program-building, and significant leveraging of Title III-D funds. Senior center contractors provide nutrition education, chronic disease management and prevention, stress management, a variety of health screenings, and physical activities, although in varying degrees. ElderVention provides significant behavioral health prevention/education, screening, and transition workshops, and is available at all senior centers. ElderVention is gaining national recognition as a model behavioral health prevention program for older adults. Medication management education has not been consistently offered, but is being added into Healthy Roundup program.

This Area Agency on Aging (AAA) was selected as a site because of its:

- Strong partnerships at the local level, including faith-based groups and ethnic organizations;
- Wide range of services, including services for older refugees and victims of late-life domestic violence, and a behavioral prevention program;
- Involvement with the state unit on aging, particularly in nutrition education and food provider training; and

- Involvement in state innovations in health promotion in support of the state's Healthy Aging 2010 and Aging 2020 initiatives.

The major health promotion and disease prevention activities at senior centers supported by Region One are the Healthy Roundup Program, the Senior Wellness Program, the Passport to Living Program, and the ElderVention Program **(*Exhibit 3*).**

Exhibit 3. Main Health Promotion and Disease Prevention Programs of the Area Agency on Aging, Region One, Maricopa County

Program	Description
Healthy Roundup Program	Provides health promotion presentations and cholesterol screenings at 29 senior centers in Maricopa County.
Senior Wellness Program	Provides educational classes in health promotion and disease prevention, physical activity classes, individual wellness counseling with nurses, health fairs, and a variety of health screenings for seniors at the six senior centers operated by the Tempe Community Action Agency.
Passport to Living Program	Brings a wide variety of health promotion presentations, health screenings, and physical activities to the two senior centers operated by Mesa Senior Services in Maricopa County.
ElderVention Program	Provides depression prevention education to groups and individuals, and transition workshops at multiple venues for older adults who may be at risk for depression or suicide.

The major stakeholders working with Region One and the Arizona state agencies involved in elder health promotion are:

- **Health Net of Arizona**, a subsidiary of Health Net, Inc., is a full spectrum health plan and insurance company. The parent corporation operates full-service health plans in 27 states. Health Net provides the Healthy Roundup Program for elders in 29 senior centers in Maricopa County with grant support from the AAA Region One.

- **Tempe Health Coalition** is composed of the Tempe Community Action Agency, Arizona State University, St. Luke's Hospital, and Region One. Through a contract with Region One, the partners provide the Senior Wellness Program in the six Tempe and south Scottsdale senior centers operated by the Tempe Community Action Agency. University faculty and graduate students are directly involved in program delivery and in the collection and analysis of participant outcome measures.

- **Mesa Senior Services** is a private foundation which operates three senior centers in the City of Mesa, and through the Region One contracts to operate the Passport to Living program in its two senior centers within Maricopa County.

- **ValueOptions**, a for-profit organization providing behavioral health prevention and treatment services, is the Regional Behavioral Health Authority funded by the Division of Behavioral Health Services in the Arizona Department of Health Services. Region One provides depression prevention services in the ElderVention program under a contract with ValueOptions using Medicaid funds.

4.3 The Los Angeles County Area Agency on Aging (Los Angeles, California)

The Los Angeles County Area Agency on Aging is committed to increasing health promotion and disease prevention initiatives among its older population.[32] Its health promotion and disease prevention activities are focused in the areas of nutrition and physical activity, in support of the AAA core nutrition program; otherwise, the scope of its activities is limited. The Los Angeles County AAA chose these programs on a pragmatic basis, making use of available community partnerships and other resources to fill program gap in its nutrition program. The AAA has monitored its innovative health promotion programs carefully, with the ENHANCE and Be Well monitoring reports providing evidence of their value. While the AAA has not leveraged much of its Title III-D funding to date, it is working to expand these health promotion and disease prevention programs through grant support and its community partnerships with its senior centers and vendors. The AAA is committed to continuing its evidence-based health promotion and disease prevention activities, and has partnered with organizations capable of collecting useful data. At present, however, the innovative programs, ENHANCE and Be Well, serve a limited number of clients. The senior centers provide exercise programs, classes by local health providers, and immunization and screening services.

The Los Angeles County AAA was selected as a site because of its work in nutrition- and exercise- related health promotion programming, specifically:

- The commitment to evidence-based health promotion and disease prevention programs; and,

- The emphasis on data collection and evaluation of health promotion and disease prevention activities

The Los Angeles AAA provides a range of health promotion and disease prevention services that focus on nutritional counseling and exercise (***Exhibit 4*****).**

Exhibit 4. Main Health Promotion and Disease Prevention Programs of the Los Angeles Area Agency on Aging

Program	Description
The Effective Nutritional Health Assessments and Networks of Care for the Elderly (ENHANCE)	Provides individualized nutritional counseling and education, along with a review of participant medication.
Be Well	Provides semi-weekly light exercise followed by an hour of classroom instruction in nutrition topics, is operated by the Food and Nutrition Management Services, Inc.

The AAA works with state agencies and community organizations in developing and evaluating its health promotion activities. These partners include:

- **California Department of Aging**, the State Unit on Aging, provides Older Americans Act funds and some very limited state funding. The California Department of Aging grants AAAs extensive latitude in local programming, and generally refrains from mandating programs.

- **Senior centers** are the main locus of the health promotion/disease prevention activities, actively implement many of the initiatives of the Los Angeles County AAA, and provide facilities for them. In addition, the centers develop their own contacts with local health departments and other health care providers to publicize their services, and to arrange for hypertension screening, influenza immunizations, and other services.

- **Food and Nutrition Management Services, Inc.,** has worked with the Los Angeles County AAA since 1995 to coordinate its congregate and home-delivered meals program, and has been central to the implementation of the AAA's health promotion initiatives. Their data system has provided the AAA nutrition program with data tracking capabilities, saving the AAA the expense of developing its own system. Food and Nutrition Management Services collected data to assess the impact of the ENHANCE and Be Well programs.

- **Partners in Care Foundation** is a non-profit philanthropic and service organization with a major interest in areas related to life span, chronic illness, access to health care and ethnic disparities. This foundation is a partner in the Be Well project.

4.4 Division of Services for Aging and Adults with Physical Disabilities, Delaware Department of Health and Social Services (Wilmington, Delaware)

The Division of Services for Aging and Adults with Physical Disabilities (DSAAPD) in the Delaware Department of Health and Social Services is both the State Unit on Aging and the single Area Agency on Aging for the state of Delaware.[33] DSAAPD is committed to providing a

wide range of health promotion and disease prevention resources and services to its older and disabled population. It's strategy focuses on building and mobilizing state and community partners to inform its target populations and promote quality resources and programming, ranging from health and wellness programs, screenings, nutrition and fitness education, and activities that encourage healthy behavior. DSAAPD works closely with its many partners to plan, train, inform, and advocate for issues affecting the health and wellness of those it serves. In addition, the AAA/State Unit on Aging leverages existing resources while seeking new grants and outside funding opportunities to further the effectiveness of the services and programs it delivers. Evidence-based programs play a prominent role in the programs with which DSAAPD is involved. While DSAAPD promotes and coordinates a wide range of services and programs, financial constraints limit the reach of these programs, with few reaching large numbers of people. Moreover, since the state does not directly fund many programs, it does not have much data to assess current programs and to guide future initiatives.

The Division of Services for Aging and Adults with Physical Disabilities (DSAAPD) was selected as a site because of its:

- Strong partnerships at the state and local level;
- Commitment to evidence-based medicine, including the use of the Healthy Delaware 2010 and Healthy People 2010 goals and other national programs;
- Role as both State Unit and Area Agency on Aging for Delaware, balancing state policy, planning and advocacy with direct services; and
- Development of an innovative health promotion and disease prevention program focusing on behavioral and mental health issues.

This Division is involved with a wide range of services that focus on health and well programs, physical activity, nutrition and mental health and substance abuse (***Exhibit 5***.).

Exhibit 5. Main Health Promotion and Disease Prevention Programs of the Delaware Division of Aging and Adults with Physical Disabilities

Program	Description
Health and Wellness Programs	Promotes health through primary prevention practices and management of chronic diseases associated with aging through. These programs include Time of Your Life, Small Steps, Big Rewards diabetes control program, Champions of Change cancer prevention programs, and HIV prevention, adult immunization, and other minority-focused initiatives.
Physical Activity Programs	Improves health, fitness, and quality of life through increased physical activity. Programs and activities include the Delaware Senior Olympics sports programs and Walk Delaware, the Lt. Governor's Challenge, and Governor's Walk at Senior Beach Day.
Healthy Nutrition Programs	Promote healthy eating habits to decrease risk of chronic disease through the Elder Nutrition Program, which includes the 5-A-Day for Better Health campaign.
Mental Health and Substance Abuse	Improves the mental health status of older adults and those with physical disabilities through the More Life to Live program, toolkit, and training for seniors and service providers.

DSAAPD leverages its resources by working with a broad spectrum of partners in health promotion/disease prevention planning and activities. DSAAPD consults with state agencies, community organizations, and academic research centers in developing and evaluating its health promotion activities. Key partners include:

- **Division of Public Health**, which works closely with DSAAPD to develop and promote prevention programs, applies for grants, and provides funding for health promotion activities (i.e., mini-grants to Delaware Senior Olympics). They also collaborated with DSAAPD and statewide partners to develop *Healthy Delaware 2010* and other major strategic health plans for diabetes, cancer, physical activity, and healthy nutrition.

- **University of Delaware**, which helped to develop and implement the Get Healthy for Life program. The University evaluates selected programs and conducts pilot studies funded by a small university grant and support from DSAAPD.

- **Senior Centers**, which implement DSAAPD-funded programs. Several centers developed programs to promote healthy lifestyles with the assistance of DSAAPD.

- **Delaware Senior Olympics**, which promotes year-round sports and fitness activities such as Senior Olympics, Walk Delaware, and the Lt. Governor's Challenge. Participates in senior health fairs and provides presentations, training, and technical assistance to organizations promoting physical activities for seniors and those with disabilities.

4.5 Senior Resource Alliance (Orlando, Florida)

The Senior Resource Alliance is committed to providing health promotion and disease prevention services to its older population.[34] These services are integrated into the overall activities of the Senior Resource Alliance. The AAA has been particularly effective in developing community partnerships, and has had some success in using these partnerships to leverage its Title III-D funding through grant support for health promotion and disease prevention programs. Often, it has assumed the role of a contractor working with support from its partners, and has made some use of pilot programs to demonstrate their effectiveness. Senior Resource Alliance is committed to developing health promotion and disease prevention activities, and has initiated services in evidence-based areas, particularly physical activity, disease management, and medication management. It will need to do additional work, and will need additional funding, to comprehensively implement these activities across the service area, since some of these programs still exist in relatively few sites or serve only a small population. While it is collecting a limited amount of data, Senior Resource Alliance has not yet been able to implement a systematic approach to monitoring its health promotion and disease prevention programs.

The Senior Resource Alliance was selected as a site because of its:

- Community Wellness Program, which draws on resources from the state of Florida, statewide organizations, and local partners, to provide classes, screenings, and an exercise program;
- Effectiveness in leveraging funding including its relationship with the Winter Park Health Foundation as a partner and grant recipient;
- Mobile medical and dental screening clinic program operated in cooperation with a local hospital and other community partners;
- Hospital-based Comprehensive Geriatric Assessment Program, providing advanced diagnostic services for older clients with complex medical needs; and,
- Evidence-based pilot medication management initiative providing geriatric pharmacology consultation services to clients using high numbers of medications

The Senior Resource Alliance's health promotion and disease prevention activities include programs of classes and screening at senior centers, a senior exercise program, a mobile medical clinic and dental screening service, a Comprehensive Geriatric Assessment Program, and a pilot Geriatric Pharmacology Consultation program **(*Exhibit 6*).**

Exhibit 6. Main Health Promotion and Disease Prevention Programs of Senior Resource Alliance

Program	Description
Program of classes, outreach activities, and screenings	Addresses specific health-related issues, offered both at senior centers and in the community. Included in this program are instructional courses in arthritis, medication self-management, and nutrition.
Senior Exercise Program	Includes exercise classes in the senior centers and the LifeSteps mall-walking program, a community-based walking program offered in shopping malls.
Mobile Medical Clinic and Dental Screening and Referral Program for Seniors	Brings medical and dental screening and referral services to low-income and underserved clients.
Comprehensive Geriatric Assessment Program	Provides advanced assessment and referral services to help older clients with complex medical needs maintain the maximum level of functioning.
Pilot Geriatric Pharmacology Consultation	Provides medication services to clients using high numbers of medications.

The Senior Resource Alliance leverages its resources by working with many partners in health promotion/disease prevention planning and activities. Key partners include:

- **The Florida Department of Elder Affairs**, which provides Older Americans Act and state funding for Senior Resource Alliance operations, and mandates a Community Outreach and Wellness program of presentations, lectures, health screenings, and health fairs.

- **Winter Park Health Foundation**, which conducts research related to the needs of its community and issues grants to develop community resources.

- **Florida Hospital**, a non-profit institution and part of the Avantis Health Care System, is a partner with Senior Resource Alliance in operating a mobile medical/dental clinic and a comprehensive geriatric health care program with joint resources.

- **Central Florida YMCA**, which operates two senior centers in Orange County and manages exercise classes for Senior Resource Alliance in the senior centers, in congregate sites, and in conjunction with the LifeSteps mall walking program.

- **Health Care Center for the Homeless**, which is a key partner in the Senior Resource Alliance dental program, serving clients in its clinic and through its relationships with volunteer professionals.

- **Orange County Health Department**, which provides chronic disease management services under state grant funding and provides presentations on health promotion/disease prevention subjects such as falls prevention, and food safety for Senior Resource Alliance senior centers in Orange County.

- **Orange County Commission on Aging,** which develops priorities for services to improve quality of life for older adults in the county, publicizes services and educational opportunities for older adults, and advocates for programs to help older adults.

- **Brevard County Parks and Recreation Department**, which coordinates the health and wellness educational events and senior exercise programs for Senior Resource Alliance in Brevard County.

The Senior Resource Alliance also is a member of the Central Florida Partnership on Health Disparities, a community inter-agency organization including Senior Resource Alliance and Winter Park Health Foundation, Orange County Health Department, and Florida Hospital in a cooperative arrangement seeking to coordinate approaches to health disparities in the region and cooperate in grant submissions.

4.6 Division of Aging Services, Atlanta Regional Commission (Atlanta, Georgia)

The Atlanta Regional Commission believes that health promotion and disease prevention programs are critical to its future and that of older people.[35] Working with a large number of governments, private and corporate partners, including the State Unit on Aging, it substantially leveraged its Title III-D funds. The Area Agency on Aging implemented a very comprehensive range of programs in nutrition education, physical education, health screening programs, and medication management. Through numerous task forces that it organized and sponsors, the Area Agency on Aging works to build and improve the health promotion and disease prevention infrastructure. However, while serving a substantial number of persons with these programs, they represent a small proportion of older people in the Atlanta region. Finally, the Atlanta Regional Commission is committed to monitoring the involvement and outcomes of its health promotion and disease prevention program participants.

The Atlanta Regional Commission was selected as a site for this study because of its:

- Strong partnerships at the local level;

- Wide range of services;

- Strong involvement with the Division of Aging of the Georgia Department of Human Services; and,

- Deep commitment to collecting data on health promotion and disease prevention programs.

The Atlanta Regional Commissions health promotion and disease prevention programs and activities include nutrition education and screening programs, physical education programs, medication management and disease management programs, infrastructure and systems development and conference programs (***Exhibit 7***).

Exhibit 7. Main Health Promotion and Disease Prevention Programs of the Atlanta Regional Commission

Program	**Description**
Nutrition Education and Screening Programs	Promotes proper nutrition to decrease the risk of chronic disease through healthy eating habits. These programs include Diabetes and You, Take Charge of Your Health, Taking Health to Heart, the Congregate Meals program, and the Nutrition Screening program.
Physical Education Programs	Promote healthy lifestyles through physical activity and education. These programs include the Mayors' Walk, Steps to Healthy Aging, the Georgia Golden Olympics, and the Physical Fitness Strength program.
Medication Management and Disease Management Programs	Help seniors manage their medications and chronic disease. Programs include the Vial of Life and the Disease Management Education programs.
Infrastructure and Systems Development	Includes a variety of task forces and data systems designed to improve health promotion and disease prevention services. These task forces include the Pro Health for Seniors Task Force, the Georgia Mental Health for Seniors Task Force, the Multicultural Health Initiative, and the Atlanta Foot Care Coalition.
Conference Programs	Organizes conferences to promote health, increase knowledge about health, and exchange promising practices. These programs include the Food, Fun and Fitness conference, and the Annual Nutrition and Health Wellness conference.

The Atlanta Regional Commission leverages its resources by working with many partners in health promotion/disease prevention planning and activities. Key partners include:

- **Georgia Division of Aging Services** is the State Unit on Aging and provides extensive guidance and assistance to Area Agencies on Aging on health promotion and disease prevention. The state funds a wellness coordinator in each of the Area Agencies on Aging.

- **Georgia Division of Public Health** is the state health department. It is actively involved in health promotion and disease prevention activities, including diabetes prevention.

- **Senior Centers and County Departments of Senior Services** directly administer many of the health promotion and disease prevention services. Georgia has a very strong county system of services.

- **CVS Pharmacy** was an active partner in the Vial of Life program, providing funds and a pharmacy expertise.

- **Georgia Coalition for Physical Activity** is a coalition of organizations concerned with promotion physical activity as a key to wellness.

- **Georgia Golden Olympics** is the Georgia chapter of the Senior Olympics, and works to increase physical activity among older people.

- **Pfizer** contributed funds to the Taking Health to Heart program in Fulton County, which was designed to help older adults manage their cholesterol and decrease their risk of heart disease.

- **AARP** contributed funds for the Mayor's walk and other programs.

- **Fuqua Center for Late Life Depression** is a leader of the Aging and Mental Health Task Force, which seeks to improve coordination between the mental health and aging service systems.

4.7 Southern Maine Agency on Aging (Portland, Maine)

Using limited resources, Southern Maine Agency on Aging has been able to create and support the dissemination of successful health promotion and disease prevention programs through its partnerships with other organizations, especially with the Partnership for Healthy Aging and the University of Southern Maine.[36] The focus is on fitness programs serving individuals with some degree of physical or functional limitations, with disease management programs growing more slowly. Through creative program design and realistic concerns about sustainability, these organizations are succeeding in developing and disseminating low-cost

programs that have the potential to achieve substantial impacts on the health and wellbeing of Maine seniors.

The Southern Maine Agency on Aging was selected as a site for this study because of their combined strength in several areas. These include:

- Creative approaches to extending resources in a rural state, including an evidence-based, volunteer-led program of HPDP activities;
- Commitment to evidence-based programs and evaluation;
- Commitment to sustainability and affordability; and
- Strong partnerships and community linkages, including collaboration with the MaineHealth system Partnership for Healthy Aging and the University of Southern Maine.

Health promotion and disease prevention programs conducted in Maine by Southern Maine Agency on Aging or its community partners include A Matter of Balance, the Health Enhancement Program, the Lifetime Fitness Program, Living a Healthy Life, a Matter of Health Walking Program, and Maine Nutrition Network activities (***Exhibit 8***).

Exhibit 8. Main Health Promotion and Disease Prevention Activities of Maine

Program	**Description**
A Matter of Balance	An evidence-based program designed to decrease fear of falling and increase strength and balance through group discussions, education and exercises. It was modified from a professionally-led model to a lay-leader model.
The Health Enhancement Program	An evidence-based chronic disease management program.
Lifetime Fitness Program	Evidence-based exercise program, offered by the University of Southern Maine.
Living a Healthy Life	An evidence-based behavior modification program in which individuals choose their own focus and goals to improve their health, for example smoking cessation, weight or increased physical activity.
A Matter of Health Walking Program	A pedometer program to measure participants' activity levels and calendars to record their activity levels.
Maine Nutrition Network activities	Provides nutrition education to groups through presentations and newsletter articles. They also created a nutrition discussion curriculum presented to A Matter of Balance participants.

Southern Maine Agency on Aging most often collaborates with the following organizations:

- **The Partnership for Healthy Aging** is a program of MaineHealth and serves as a community aging service provider. MaineHealth established the Partnership for Healthy Aging with founding membership by MaineHealth, Southern Maine Agency on Aging, Home Health-Visiting Nurses of Southern Maine, and the University of Southern Maine. Partnership for Healthy Aging is responsible for the development and implementation of several of the afore mentioned programs and coordinates with the wide range of partners and stakeholders involved.

- **MaineHealth System** is a nonprofit integrated delivery system including several hospital systems, home health agencies and physician practices in central and southern Maine. As the sponsoring organization for Partnership for Healthy Aging, it provides the financial support that sustains that organization and conducts the programmatic, financial and legal oversight of Partnership for Healthy Aging.

- **Maine Bureau of Elder and Adult Services** includes the State Unit on Aging, serves as a partner in planning and advocacy. The Bureau actively supports the health promotion and disease prevention activities with funding, advocacy for funding at the state level, and by supporting the application for an Administration on Aging Evidence-Based grant.

- **University of Southern Maine** is part of the statewide University of Maine system. Various programs at the university collaborate with Southern Maine Area Agency on Aging, Partnership for Healthy Aging, and MaineHealth. The School of Social Work is working on the evaluation of the translation of A Matter of Balance to a lay leader model. The College of Nursing and Sports Medicine houses the exercise and fitness programs designed for seniors and trains staff at other sites across the state to develop Lifetime Fitness programs.

4.8 The Council on Aging of Southwestern Ohio (Cincinnati, Ohio)

The Council on Aging of Southwest Ohio is committed to providing a wide range of health promotion and disease prevention services to its older population.[37] These health promotion and disease prevention activities are integrated into the overall activities of the Council as a core activity. The Council developed and chose the programs it supports on a pragmatic basis, making use of available community partnerships and other resources. The Council effectively leverages its limited Title III-D funding to expand these health promotion and disease prevention programs through grant support and community partnerships. These partnerships include both direct relationships which the Council has developed with other organizations, as in the Falls Prevention Task Force, and through the senior centers with local health departments to provide health promotion programs and services for older people. The

Council works with its partners to seek grant support, and also launches pilot programs to demonstrate their effectiveness and gain community support. The Council is committed to developing a comprehensive set of health promotion and disease prevention activities, and has initiated services in the evidence-based areas of exercise, medication management, and falls prevention. Additional work is needed to comprehensively implement these activities across the service area, since these new programs operate in relatively few sites. Although the evaluation of the COALA Medication Management program is beginning to provide information that Council program managers and administrators can use to judge the effectiveness of that health promotion service, data are not yet available on the participants or the benefits of many Council programs, and a systematic approach to data collection for Council health promotion and disease prevention programs remains to be developed.

The Council on Aging was selected as one of the sites for this study because of its:

- Recognition of health promotion and disease prevention activities as a key to helping frail elders maintain their independence;
- Strong collaborative working relationship in health promotion and disease prevention programming with many community partners;
- Implementation of the Robert Wood Johnson Foundation's Active for Life Program, which helps sedentary persons aged 50 and older develop more active lifestyles;
- Innovative medication management program;
- Work to evaluate its health promotion and disease prevention efforts for older persons; and,
- Support from the Ohio Department of Aging in making health promotion and disease prevention a priority area.

The Council on Aging's health promotion and disease prevention activities include the Senior Center Re-Engineering Initiative, the Active Living Every Day program, the Council on Aging Learning Advantages Medication Management program, the Hamilton County Falls Prevention Task Force, and health promotion and disease prevention programming at senior centers (***Exhibit 9*****).**

Exhibit 9. Main Health Promotion and Disease Prevention Programs of the Council on Aging of Southwestern Ohio

Program	Description
Senior Center Re-Engineering Initiative	Planning effort designed to increase the availability of health promotion and disease prevention activities in senior centers.
Active Living Every Day Program	Robert Wood Johnson Foundation-funded initiative intended to change the lifestyles of sedentary seniors.
Council on Aging Learning Advantages Medication Management Program	Provides health education on prescription drugs to disabled older people in their homes.
Hamilton County Falls Prevention Task Force	Seeks to reduce falls that result in serious injury and death.
Ongoing health promotion/disease prevention programming at senior centers	Includes a variety of health screening and exercise activities.

The Council on Aging leverages its resources by working with many partners in health promotion/disease prevention planning and activities. These partners include:

- The **Ohio Department on Aging**, the State Unit on Aging, which provides guidance and funding. The state encouraged Area Agencies on Aging to adopt health promotion as a top priority during 2004. The Department on Aging also assisted in the development of the Re-Engineering initiative and the proposal for the Active Living Every Day project.

- The **senior centers** are the main locus of the health promotion/disease prevention activities and actively implement many of the initiatives of the Council on Aging. In addition, the centers develop their own contacts with local health departments and other health care providers to arrange for hypertension screening, influenza immunizations, and other services, and to publicize their services.

- The **Hamilton County Health District**, which provides blood pressure screening and influenza immunizations at some senior centers. In addition, the Health District is a close collaborator on the Active Living Every Day project, hiring and contracting with class facilitators, screening potential participants, and inputting data from class evaluations.

- The **Health Alliance**, a major nonprofit healthcare provider in the area which provides hospital, clinic and long-term care, is a partner on the Active Living Every Day program.

- The **Scripps Gerontology Center of Miami University** in Oxford, Ohio, provides extensive evaluation services for the Council on Aging and many of its programs.

4.9 Aging and Disability Services (Seattle, Washington)

Aging and Disability Services is committed to and has implemented innovative evidence-based programs in the areas of nutrition, physical activity, and disease management, and is dedicated to further refining existing, as well as developing new health promotion and disease prevention programs.[38] Because of the collaboration with the Healthy Aging Partnership, the University of Washington's University of Washington's Health Promotion Research Center, and Senior Services, Inc., Aging and Disability Services is expected to enable additional individuals in the greater Seattle area to benefit from programs such as Lifetime Fitness Program, the Health Enhancement Program and the Living a Healthy Life Workshop. However, it remains to be determined whether newer programs, such as PEARLS and Sound Steps, will have a similar benefit on the senior population of Seattle/King County.

Aging and Disability Services was selected as a site because of its:

- Leveraging of health promotion and disease prevention resources to provide a wide range of services to the diverse older population of Seattle/King County;
- Programs that emphasize the development, promotion and measurement of healthy aging services;
- A commitment to evidence-based approaches and to evaluating the impact of programs; and,
- Its strong partnership with the University of Washington's Health Promotion Research Center and Senior Services, Inc., and history of staff working well together on health promotion/disease prevention initiatives for older persons.

The Aging and Disability Services health promotion/disease prevention activities include the Senior Wellness Project, the Program to Encourage Active Rewarding Lives for Seniors (PEARLS), the Senior Market Basket Program, the Sound Steps Program, and ongoing health promotion and disease prevention programming at senior centers (***Exhibit 10***).

Exhibit 10. Main Health Promotion and Disease Prevention Programs of Aging and Disability Services

Program	Description
Senior Wellness Project	Three-component, evidence-based health promotion and disease prevention program for older persons with chronic conditions. The components include physical fitness classes, a chronic disease management course and a behavior modification program.
Program to Encourage Active Rewarding Lives for Seniors (PEARLS)	Intervention designed to help those with mild to moderate depression develop problem-solving skills to improve the quality and productivity of their lives.
Senior Market Basket Program	Provides low-income, community-dwelling seniors with an increased supply of fruits and vegetables, both to improve the quality of their nutritional intake and to expose them to a wider variety of produce. The market program also provides low-income seniors with a $40 voucher for produce to be redeemed at local farmer's market during the growing season.
Sound Steps Program	Promotes walking in a number of community venues throughout the greater Seattle area.
Health promotion/disease prevention programming at senior centers	Variety of physical activity programs in conjunction with the delivery of congregate meals.

The primary partners that work with Aging and Disability Services include the following:

- **Senior Services, Inc**., a large nonprofit agency that provides community-based services to older people through a network of senior centers, and programs (wellness, nutrition, transportation, adult day health, information and assistance, home sharing, senior rights, home repair, caregiver, outreach).

- **The University of Washington's University of Washington's Health Promotion Research Cente**r, which is one of 33 research centers funded by the U.S. Centers for Disease Control and Prevention (CDC), and is a member of CDC's Healthy Aging Research Network (HAN). Recently completed Aging and Disability Services/University of Washington's Health Promotion Research Center evaluations include PEARLS, the Senior Wellness Project, Senior Market Basket Program, and Sound Steps.

- **The Healthy Aging Partnership,** which is comprised of representatives from 32 not-for-profit government and community-based agencies. The Healthy Aging Partnership initiatives include free, confidential information and assistance through an 800 toll-free telephone number. It also publicizes health messages in newspapers and sponsors Sound Steps, a walking program for older persons.

SECTION 5
CASE STUDIES: CROSS-SITE FINDINGS

The key issues for these case studies focus on the roles of Title III-D of the Older Americans Act and the Area Agencies on Aging in developing health promotion and disease prevention initiatives for older people. Establishing and maintaining these programs is challenging because direct funding through Title III-D is, by design, limited. Instead of being primarily a source of service funding, Title III-D is intended to provide seed money and to serve as a catalyst to develop greater capacity and to foster comprehensive systems to serve older people. The following section discusses the findings on the seven core research questions across the eight sites.

5.1. How Health Promotion and Disease Prevention Initiatives Fit into the Overall Activities of the Area Agency on Aging

All of the Area Agencies on Aging studied considered health promotion and disease prevention initiatives to be important, and some have adopted health promotion and disease prevention activities as critical elements of their mission. A key reason for their commitment is the perceived link between health promotion and disease prevention activities and their goal of improving the quality of life of older Americans so that they can remain independent and live in the community. In some cases, involvement with these activities predates the passage of Title III-D of the Older Americans Act.

A second reason for this commitment is that several sites see health promotion and disease prevention activities as being critical to attracting Baby Boomers to Area Agency on Aging and senior center programs. For example, Atlanta is positioning itself to be the "go to" organization for retirement planning, and believes that the Baby Boom generation will want information about and access to these services. Similarly, the Council on Aging of Southwest Ohio and the Area Agency on Aging of Maricopa County, Arizona, believe that these programs are vital to attracting the Baby Boom generation, to senior centers and, thus, vital to their long-term survival.

All of the study sites identified the level of funding of Title III-D as a constraint on their activities. Despite this, the level of funding was enough, at least for these Area Agencies on Aging, to focus attention on health promotion and disease prevention activities and to engage in activities that were broader than those directly funded by Title III-D.

5.2 Leveraging of Title III-D Dollars to Develop Larger Health Promotion and Disease Prevention Programs

By design, Title III-D funds were a small proportion of total Area Agency on Aging funds. Title III-D funding generally was less than 1.0 percent of total Area Agency on Aging funding. At its extreme, the amount of Title III-D funds for the Southern Maine Agency on Aging was $6,329, too small to even consider leveraging.

The Area Agencies on Aging developed a number of approaches to leveraging Title III-D funding to develop larger programs. The most common approach was seeking grants and contracts from other public and private sources, including government agencies, foundations and private corporations at both the national and local level. Federal government agencies providing grant funding included the Substance Abuse and Mental Health Services Administration, which supports health promotion and disease prevention programs in an outreach program to the Hispanic community through the Area Agency on Aging in Maricopa County, Arizona; the U.S. Department of Agriculture, which funds health promotion and disease prevention nutrition education programs through the Atlanta Regional Commission in Georgia; the Administration on Aging, which helped support the Be Well pilot program of the Los Angeles County Area Agency on Aging; and the Centers for Disease Control and Prevention which funded the Small Steps, Big Rewards program in Delaware.

Private national and local foundations and corporations also provided grant funds for health promotion and disease prevention. For example, the Robert Wood Johnson Foundation provided funding for the Active for Life program which the Council on Aging of Southwestern Ohio and Aging and Disability Services of Seattle, Washington, use to support exercise programming. Local organizations with health promotion and disease prevention goals also are important sources of grant support for these agencies, including the Winter Park Health Foundation in the Orlando, Florida, area. Another source of additional funding for Area Agencies on Aging health promotion and disease prevention efforts comes from state and local tax revenues. In Ohio and Georgia, the Area Agencies on Aging work closely with county governments and receive funding from county senior services agencies. Finally, contributions from corporations were important in some areas, such as the CVS Pharmacy support of the Vial of Life program in Atlanta and the AstraZeneca support of the Time of Your Life forums in Wilmington, Delaware

The Area Agencies on Aging also pursue leveraging strategies that do not involve formal grants and contracts. All the Area Agencies on Aging studied receive and provide in-kind

contributions from and to partners which support their health promotion and disease prevention programming. This support typically involves space for programs from senior centers or other partners, as well as staff support in the form of volunteer experts or teachers/activity leaders to carry out the programs. Contributions also include services such as database support and expertise, which the Los Angeles County Area Agency on Aging receives from its prime nutrition contractor and the dental services provided to clients of the Southwestern Ohio Area Agencies on Aging mobile dental clinic by the Health Care Center for the Homeless.

One other strategy was the development of pilot projects to demonstrate the value of programs to potential grant funders. Both the Los Angeles County's Area Agency on Aging's Be Well program, and the Southwestern Ohio's medication management program, were developed as pilot programs and grant funding is being sought to continue them. The Seattle Area Agency on Aging's depression management program, developed under a Center for Disease Control and Prevention grant, is continuing with funding from the state and the University of Washington.

5.3. Partnerships Developed with Other Organizations to Develop Health Promotion Programs for Older People

The Area Agencies on Aging partner with a wide range of other agencies, coalitions, and organizations to support and extend the reach of their health promotion and disease prevention programming (***Exhibit 11***). The closest partnerships include the relationships with State Units on Aging, senior centers, and contractors developed within the Older Americans Act funding framework.

Because of their funding relationship with the State Units on Aging, the Area Agencies on Aging often work closely with these state agencies to develop their health promotion and disease prevention programming. The level of control exercised by states varies: In California, with a highly diverse population, the State Unit on Aging provides minimal guidance to Area Agency on Aging activities, giving local agencies discretion to tailor programs for their specific population; in Washington, the State Unit on Aging is largely concerned with Medicaid issues, and, while supportive of health promotion and disease prevention efforts, expects the Area Agencies on Aging to take the initiative in this area. Alternatively, in Florida and Georgia, the State Unit on Aging is active in devising and designating funding for statewide health promotion and disease prevention initiatives.

Exhibit 11. Types of Partners in HPDP Programs

	Faith Based Groups	Foundations	AoA/OAA	CMS/ Medicaid	State Agencies	Universities	Local Nonprofits	Private Firms	Hospitals	CDC	County Organizations	USDA	SAMSHA
Case Study													
AAA Region One Maricopa County, Arizona	X	X	X	X	X	X	X	X	X		X		X
LA County AAA		X	X		X	X	X	X					
Division of Services for Aging and Adults with Physical Disabilities, Delaware	X		X		X	X	X	X	X	X			
Senior Resource Alliance (AAA of Central Florida)		X	X		X	X	X	X	X		X		
Atlanta Regional Commission			X		X	X	X	X	X		X		
Southern Maine AAA		X	X		X	X	X		X			X	
Council on Aging of Southwestern Ohio		X	X		X	X	X				X		
Aging and Disability Services, Seattle, Washington		X	X	X	X	X	X	X	X	X	X	X	

SOURCE: RTI International Case Studies of Health Promotion and Disease Prevention Activities of Area Agencies on Aging.

In Delaware the State Unit on Aging is also the single Area Agency on Aging. On the one hand, operating as the Area Agency on Aging is advantageous because it gives the agency extensive knowledge about local conditions which it can integrate into state policy; on the other hand, the direct service functions divert resources from the policy and planning functions of the State Unit on Aging.

The Area Agencies on Aging rely heavily on their senior centers and congregate sites, both for the implementation of an ongoing program of health promotion and disease prevention activities and for feedback, both formal and informal, from the older Americans they serve. In many sites, such as Southwestern Ohio and Maricopa County, Arizona, the senior centers had outside sources of funding, which give them some independence from the Area Agency on Aging. Thus, they could not simply be "ordered" to perform certain tasks, but had to be convinced to do so. Contractors bring a mix of skills to their partnership with the Area Agencies on Aging, and supplement their formal responsibilities for nutrition and other services by providing expertise in such areas as services for specialized populations, as in Maricopa County, Arizona, or database management, as in Los Angeles.

The Area Agencies on Aging have moved beyond these basic partnerships to embrace a range of collaborators, including health and mental health departments and hospitals, non-profit organizations and coalitions, foundations, and universities. Local and state health departments are particularly useful partners because of their shared interest in wellness and their staffs of trained public health professionals. The Delaware Division of Services for Aging and Adults with Physical Disabilities, as a statewide Area Agency on Agency and State Unit for Aging, is well placed to coordinate its efforts with the state Divisions of Public Health and of Substance Abuse and Mental Health. Similarly, the Atlanta Regional Council worked closely with the Georgia Division of Public Health on health promotion and disease prevention activities. In Maine the inclusion of the Maine State Housing Authority on the Professional Advisory Committee for A Matter of Balance led to very effective outreach, recruitment and training of resident service coordinators as lay leaders, and the establishment of accessible locations for classes. The Southern Maine Area Agency on Aging was also instrumental in the creation of a Partnership for Healthy Aging, joining with the non-profit MaineHealth system and other organizations to jointly develop and support health promotion and disease prevention programs. At a regional level, the Southwestern Ohio Area Agency on Aging forged a partnership with the Hamilton County Health Department, which serves its largest and most urban county, while the Senior Resource Alliance in Orlando, Florida, works with both the Orange County Health Department and Florida Hospital to develop health promotion and disease prevention programs.

Many of the Area Agencies on Aging also have partnerships with wellness-oriented non-profit organizations and coalitions. In Maricopa County, Arizona, the Senior Wellness Program is supported by its participation in the Tempe Health Coalition, and the ElderVention program receives the support of the Arizona Behavioral Health and Aging Coalition. In Seattle, Washington, Aging and Disability Services is part of the Healthy Aging Partnership with local non-profit organizations. Atlanta established the ProHealth Task Force, which is a broad coalition of organizations interested in promoting the health of older people.

5.4. How Programs Were Chosen and Developed

The Area Agencies on Aging chose and developed their programming through a number of different approaches. Some agencies conducted a formal needs assessment process, responding to special populations or particular needs in their service areas. In Arizona, Region One takes the approach of identifying the gaps in health promotion services through public hearings, examination of state trends in elder health conditions, and consideration of requests to its 24-hour Senior HELP LINE. Its commitment to behavioral health services, for instance, was generated by high rates of suicide in the early 1990s. In Ohio, a statewide senior center study identified a demand among current and potential senior center participants for health promotion and disease prevention programming. In Florida, the Senior Resource Alliance assesses community need on an ongoing basis through surveys, focus groups, conversations and data from other community organizations, and works with the Department of Elder Affairs to integrate its findings into the local implementation of the statewide Community Outreach and Wellness Program.

Many of the Area Agencies on Aging drew directly on evidence-based practice in developing health program and disease prevention programming. For example, Delaware established priority areas and objectives using *Healthy People 2010, Healthy Delaware 2010*, which it helped to create, and the *Blueprint for a Healthier Delaware*, the state diabetes prevention and control plan. In Georgia, the State Unit on Aging works closely with the Area Agencies on Aging in developing programs through an examination of state health data, targeting initiatives to specific health behaviors that have been shown to have an impact on wellness. Many of these programs are developed by the Georgia State Unit on Aging. Aging and Disability Services in Washington also selects its programs based in part on the effectiveness shown by evidence-based research.

Many Area Agency on Aging drew on programs developed by federal agencies or national foundations, including:

- 5-a-Day for Better Health, which promotes eating more fruits and vegetables;
- Small Steps, Big Reward, which is a diabetes prevention and management program;
- Senior Olympics, which encourages participation in sports;
- Vial of Life, which is a medication management and program to supply information to first responders;
- A Matter of Balance, which is a falls prevention program; and
- Active Living Every Day, which is a program designed to increase physical activity.

Several other factors helped to determine what programs were chosen by Area Agencies on Aging. First, study sites chose programs that built on existing activities. For example, almost all of the Area Agencies on Aging sponsored health promotion educational activities that revolved around the congregate meal programs where they had a ready-made audience.

Second, Area Agencies on Aging selected activities that had been tried elsewhere and could be replicated, albeit often more simply and more cheaply. For example, working with its partners, the Southern Maine Agency on Aging selected A Matter of Balance, a program that had succeeded elsewhere, lent itself to collaboration with community partners, had potential benefits across the state, and was evidence based.

Finally, Area Agencies on Aging were opportunistic and selected programs where partners were interested, committed, and had the resources. Thus, the foot care clinics in the Atlanta region are the direct result of the concern of a handful of professionals who were willing to commit their time and energy to improving foot health.

5.5 Comprehensiveness of Health Promotion and Disease Prevention Activities

Partly as a result of funding constraints, the range of health promotion and disease prevention activities varied in comprehensiveness (***Exhibit 12***). Most Area Agencies on Aging maintain a basic health promotion and disease prevention program through their senior centers or congregate meal sites. These programs are geared to improving nutrition and increasing physical activity as critical to lifestyle changes that will reduce chronic illnesses and disability. Also common are screenings for cholesterol, blood pressure, and hearing, and immunizations for influenza.

Exhibit 12. Types of Health Promotion Disease Prevention Programs

Case Study			Falls Prevention	Chronic Disease Management	Medication Management	Nutrition Education	Physical Fitness	Mental Health	Preventive Services Immunizations & Health Screening	Dental
Name	**City**	**State**								
AAA Region One Maricopa County	Phoenix	Arizona	X	X	X	X	X	X	X	X
LA County AAA	Los Angeles	California		X	X	X	X		X	
Division of Services for Aging and Adults with Physical Disabilities DDHSS	Wilmington	Delaware		X		X	X	X	X	
Senior Resource Alliance (AAA of Central Florida)	Orlando	Florida		X	X	X	X		X	X
DAS Atlanta Regional Commission	Atlanta	Georgia		X	X	X	X	X	X	
Southern Maine AAA	Portland	Maine	X	X		X	X			
Council on Aging of Southwestern Ohio	Cincinnati	Ohio	X		X		X		X	
Aging and Disability Services	Seattle	Washington		X		X	X	X	X	

SOURCE: RTI International Case Studies of Health Promotion and Disease Prevention Activities of Area Agencies on Aging.

All of the Area Agencies on Aging offer exercise programs, which may include walking, aerobics, Tai Chi, or chair-based exercises, all tailored to the older population. The Los Angeles County senior centers, for instance, have offerings which include jazzercise, yoga, and tap dancing. In Southwestern Ohio, the program includes chair volleyball, a sport in which all the participants are seated, and senior center teams compete in a league. Aging and Disability Services in Seattle, Washington, reduces congregate meal reimbursement by 15 percent to senior centers who do not offer exercise classes, providing a strong financial incentive to do so.

Nutrition education, which complements the meals programs of the senior centers, is also nearly universal. In Delaware and Georgia, for example, the state provides nutrition education training, resources, and educational materials to the Area Agencies on Aging for the senior centers. Along with these offerings, most senior centers offer nutrition education courses and presentations in the prevention and control of chronic diseases, such as diabetes, hypertension, heart disease, osteoporosis, and stroke. Some of the Area Agencies on Aging, such as Maricopa County, Arizona, provide classes in stress management and behavioral health. The Los Angeles County Area Agency on Aging developed a major program of nutrition counseling and education, ENHANCE, which is offered to at-risk clients in senior centers. The Atlanta Regional Commission has an array of programs providing nutrition education with and without physical activity and targeted to specific audiences. Some of the Area Agencies on Aging make efforts to provide information pamphlets and other material to home-bound as well as congregate meal participants. In Maine, a registered dietician or dietetic technician visits and counsels Meals on Wheels clients.

Some of the Area Agencies on Aging programs provide programs which combine nutrition education and physical activity. Los Angeles County's Be Well program and the Southwestern Ohio's Active Living Every Day exercise program are examples of this approach.

In addition to this programming, many of the Area Agencies on Aging offer special programs to address different or more specialized issues. Maricopa County, Arizona, for instance, offers ElderVention, which is a multifaceted behavioral health program with a focus on prevention of depression. Delaware's More Life to Live program also addresses mental health problems, along with substance abuse, and targets minority health needs as well. The Senior Resource Alliance in Orlando, Florida, has a number of innovative programs: Their mobile clinic travels throughout the service area screening seniors with no regular dental care, and making referrals for free or low-cost procedures. Their outpatient Comprehensive Geriatric Assessment Program, based at Florida Hospital, provides diagnosis and care to older persons who have

complex medical conditions, and their pilot Geriatric Pharmacology Consultation program provides in-depth counseling and guidance to older persons taking large numbers of medications.

Area Agencies on Aging vary in the extent to which they offer programs on medication management. Two popular approaches are “brown bags” and the Vial of Life programs. In brown bag programs, seniors bring all of their medications to the senior center in a “brown bag”, where they are reviewed by a pharmacist, usually a volunteer, for potential adverse drug interactions. The Vial of Life program, offered in cooperation with CVS Pharmacy in Atlanta and Delaware, is geared to providing vital emergency information, especially about medications, to first responders, such as emergency medical technicians. Information on medications and other pertinent medical data are placed in a vial in the refrigerator. A magnet on the outside of the refrigerator door lets first responders know that information is available inside the refrigerator.

5.6 Extent to Which Programs Have Been Implemented in the Service Area

The Area Agencies on Aging generally disseminated their basic programs of exercise, nutritional education, and screening programs broadly to the senior centers and other sites. Some programs, such as the Mayor’s Walk in Atlanta, while provided at a particular location, are open to everyone throughout the service area. The Lifesteps Mall Walking Program, which the Senior Resource Alliance is directing in Orlando, Florida, is based in five of the area’s six major shopping malls. By and large, though, these health promotion and disease prevention programs serve a small percentage of the older people in an area, generally a subset of those who attend the senior centers.

Most of the other programs have limited implementation, generally because the agencies did not have sufficient funds to offer them more broadly. For example, the Get Healthy for Life program in Delaware, which offers a combination of nutrition education and information about physical activity, was offered at only two senior centers and a senior housing project; Los Angeles County ‘s Be Well program served only 48 persons. The Active Living Every Day exercise program, which the Southwest Ohio Area Agency on Agent offers with support from the Robert Wood Johnson Foundation’s Active for Life Initiative, held just eight classes in its first year, 2003 and is expanding only slowly. The Senior Resource Alliance mobile dental clinic based in Orlando, Florida, sees about 100 persons annually; their innovative outpatient Comprehensive Geriatric Assessment Program examines about 160 older persons annually, and their pilot Geriatric Pharmacology Consultation program provided in-depth counseling and guidance to 41 older persons taking large numbers of medications. Georgia’s Take Charge of

Your Health nutrition and exercise program reached 50 participants in the Atlanta region. All of these programs could expand if the Area Agency on Aging could identify additional resources.

Bringing health promotion and disease prevention services to rural areas is a major challenge, sometimes requiring modification of evidence-based programs. For example, in Southern Maine, the Lifetime Fitness program adjusted to the lack of professional instructors in its A Matter of Balance program by training lay personnel to teach the program instead.

Even in cases where a program is generally available, it may not be available to all persons who would like to participate. For example, in Los Angeles County, the ENHANCE program reaches across the service area but the intervention is only available to persons at the most severe nutritional risk. One group often not reached by these programs is seniors who are unable to attend senior center or other congregate events. There are some exceptions, however, such as the Southwest Ohio medication management program which visits frail older persons in their homes, seeing about 300 persons in 2004. The Program to Encourage Active, Rewarding Lives for Seniors (PEARLS) intervention in Seattle, Washington, helps those with mild to moderate depression by a program of home visits and follow-up telephone calls. The ElderVention program in Arizona also provides services to homebound clients. Some Area Agencies on Aging distribute educational material by mail to the persons' home or include it with home delivered meals.

Area Agencies on Aging are also reaching out is to the ethnic communities and special target groups in their service areas (***Exhibit 13***). For example, Maricopa County, Arizona, prepares materials for the Hispanic/Latino, Chinese, and Native American communities. Senior Resource Alliance in Florida provides Spanish-speaking presenters and materials for some presentations. The Senior Wellness program of Aging and Disability Services in Seattle, Washington, is provided in Spanish, Hmong/Lao, and Somali along with the English version. In 2004, about 16 percent of the walkers in the Washington Sound Steps program were Asian and Pacific Islanders. Delaware has special outreach to its African American community, with screenings, including diabetes and colorectal cancer, and an HIV prevention program.

5.7 Data on Program Participants and Effectiveness and How these Data are Used by Program Managers and Administrators

The Area Agencies on Aging all agreed that data on participants and outcomes from the health promotion and disease prevention programs were important to their ability to develop effective efforts and to generating financial support, but they usually had only a very limited

Exhibit 13. Special Targeting in HPDP Programs

Name	Counties Served	# of Medically Underserved Areas in the Counties supported by AAA	Older Refugees	Victims of Domestic Violence	Caregivers	Hispanic/ Latino Older Persons	African American Older Persons	Asian Older Persons	Older Persons with Alzheimers Disease
AAA Region One Maricopa County	Maricopa	12	X	X	X	X			X
LA County AAA	Los Angeles County	48				X		X	
Division of Services for Aging and Adults with Physical Disabilities DDHSS	entire state	5				X	X		X
Senior Resource Alliance (AAA of Central Florida)	Orange, Osceola, Seminole, Brevard	27					X		
DAS Atlanta Regional Commission	City of Atlanta, Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry and Rockland						X	X	
Southern Maine AAA	York, Cumberland and greater Portland Area	2							
Council on Aging of Southwestern Ohio	Delhi, Green, Mill Creek, Anderson, Columbia	1			X		X		
Aging and Disability Services (Seattle)	King	4						X	

SOURCE: RTI International Case Studies of Health Promotion and Disease Prevention Activities of Area Agencies on Aging.

capacity for program monitoring and evaluation. Area Agencies on Aging cite a lack of resources as the principal reason for not having more comprehensive data collection and analysis. The usual pattern of data collection for most of the programs operated by these agencies consists of a count of participants and the collection of satisfaction surveys typically collected after a presentation or class, all of which is recorded on paper. In addition, this data may be retained at the senior center, or if transmitted to the Area Agency on Aging, it is kept in paper files. For most Area Agencies on Aging, their resources at best allow for a cursory examination of this kind of information, and seldom are they able to enter this information into any kind of electronic database. Another reason for the limited information is that the financial involvement of the Area Agency on Aging is quite modest for many of these programs, which reduces their ability to require data collection.

Two of the Area Agencies on Aging have access to computerized systems that are addressing other agency services, and these may have the potential for data collection for health promotion and disease prevention. In Los Angeles County, the Area Agency on Aging's contractor Food and Nutrition Management, Inc., has extensive data management expertise. The Georgia Aging Information Management System database gives the Atlanta Regional Commission access to demographic and service authorization information on state Division on Aging Services clients. Both these systems are comprehensive in recording all registered program participants, providing an infrastructure into which additional health promotion and disease prevention programs could provide data.

While the overall data management capacity of these Area Agencies on Aging is limited, several of them have been able to develop targeted data collection and analysis capabilities for specific programs, which is primarily accomplished through partnerships with local universities. Data collection and analysis by Arizona State University for Maricopa County's Senior Wellness Program, the University of Delaware for the Time of Your Life lifestyle change program, the University of Georgia's for Georgia's Take Charge of your Health exercise and nutrition program by the University of Georgia, and the University of Washington for the Program to Encourage Active, Rewarding Lives for Seniors are some examples. Some of these evaluations are funded through demonstration grants which also fund the program activities, as in the case of the University of Southern Maine's grant-funded evaluations of A Matter of Balance and Lifetime Fitness programs. In general, this data collection and analysis ends when the grant ends.

In other cases, the university researchers form in-kind partnerships with the Area Agencies on Aging that provide support for many projects. This approach benefits both the Area

Agencies on Aging and the researchers. While the Area Agency on Aging gains data and evaluations of their efforts, the researchers gain data for research and publication, often advancing the careers of professors and graduate students who perform the analysis under the direction of faculty advisors. The Southwestern Ohio Area Agency on Aging's partnership with Scripps Gerontology Center works in this manner. Having this ongoing partnership provides the university researchers with perspective on the overall program, but has the disadvantage that the research is often added on to an existing program which may not have baseline data from which to measure change. In many cases, sample sizes are small and follow-up limited, reducing the knowledge of whether these programs produce long-term benefits.

SECTION 6
CONCLUSION

This study examined the implementation of Title III-D of the Older Americans Act, which focuses on health promotion and disease prevention. The goal of Title III-D is to provide seed money and to allow State Units on Aging and Area Agencies on Aging to act as catalysts for the development of these activities. To assess the activities of the Aging Network in these activities, the project reviewed the research literature on the effectiveness of health promotion and disease prevention interventions on older people, interviewed national experts and conducted eight case studies of Area Agencies on Aging.

Our examination of the literature on the effectiveness of health promotion and disease prevention activities showed significant evidence exists that these activities can help older persons stay healthier and remain independent in the community. Areas in which the literature confirms this effectiveness are in the use of: disease management, including maintaining healthy lifestyles, and managing depression; falls prevention, including activities to improve flexibility and balance; medication management, including educational efforts for both patients and medical professionals; nutritional counseling, including increasing awareness of weight, bone density, and blood levels; physical activity, both general and aerobic; smoking cessation, including behavioral interventions; and clinical preventive services, such as screenings and immunizations.

Because this study analyzes the practices of only eight Area Agencies on Aging, all of which had positive reputation for their health promotion and disease prevention activities, the findings cannot be generalized to the national level. Nonetheless, the case studies identify a wide range of programs, strategies and issues by which Area Agencies on Aging partner and leverage resources to promote healthy aging. All of the sites studied developed and integrated health promotion and disease prevention activities into their overall programs, and in many cases these programs are central to the missions of the Area Agencies on Aging. All the sites leveraged the Title III-D funding they received, largely through seeking outside grant support or by developing in-kind relationships with community partners. In addition to their relationships with State Units on Aging and local senior centers, these Area Agencies on Aging established relationships with a wide range of partners, including state and local health and mental health departments, hospitals, non-profit groups, foundations, universities and corporations.

The sites work to provide the most comprehensive and relevant programs they can, given limited funding. Some Area Agencies on Aging developed extensive systems for assessing community need, and others are more opportunistic ins their health promotion and disease

prevention programming. All the sites provide a basic program of health promotion and disease prevention activities, which includes exercise, nutrition education, health education opportunities, screenings, and immunizations, and they all have moved beyond this to offer an array of other programs, both expanding on these basic areas and addressing additional subjects, such as mental health. Some Area Agencies on Aging use evidence-based models derived from national programs. While the basic program is generally available to all congregate meal clients in the senior centers, most of the other programs are more limited in availability. Most data collection for these sites is limited to records on paper, making analysis difficult, although some of the sites have been able to develop advanced data collection and analysis capacity for particular programs.

- As policymakers at the federal, state and local level look to the future for Title III-D of the Older Americans Act, they may wish to especially consider the following issues:

- Sustainability is a major challenge for the health promotion and disease prevention activities of Area Agencies on Aging. To a substantial extent, innovative projects are one-time grant funded initiatives that have difficulty continuing after the funding ends.

- Data on participation and outcomes of health promotion and disease prevention programs are highly limited. Especially with limited funding, being able to show specific outcomes of health promotion and disease prevention programs, such as high levels of client satisfaction, reduced blood pressure, and improved physical functioning, would aid the Area Agencies on Aging in designing their efforts to sustain and expand the programs.

- Health promotion and disease prevention programs can be a major way of ensuring the vitality of senior centers and can be a major strategy to serving the needs of "baby boomers" as they age.

Health promotion and disease prevention activities in the Aging Network can be an effective means to improve the quality of life of older Americans improved. This study indicates that these activities are also popular with both the Area Agencies on Aging and the older Americans which they serve. At least for these Area Agencies on Aging, Title III-D appears to be working as a catalyst for a broader range of health promotion and disease prevention activities. However, lack of funds remains the principal constraint on health promotion and disease prevention activities, despite efforts at leveraging. While much work remains to be done, these programs provide the basis for an infrastructure on which the Administration on Aging can build to strengthen its health promotion and disease prevention activities.

APPENDIX A
SUMMARIES OF HEALTH PROMOTION AND DISEASE PREVENTION RESEARCH

Exhibit A-1. Summary of Disease Management Studies

Disease Management Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Chronic Disease Self-management Program[3,5]	Churches, senior centers, public libraries, and health care facilities	Community-based patients over the age of 40 with chronic lung disease, heart disease, stoke or arthritis	664 patients randomized to the treatment group and 476 randomized to the control group	Community-based chronic disease self-management program; 7 weekly 2.5-hour courses on self-management of chronic illnesses.	Treatment group had improvements in number of minutes of exercise, cognitive symptom management, self-rated health, social/role limitations, energy, fatigue, and health distress and modest reductions in hospitalizations. Two-year follow-up data indicated that the intervention group had fewer emergency room/outpatient visits, less health distress, improved self-efficacy, and a cost savings of $590/participant
Health Enhancement Program[39,40]	Second-phase nonrandomized replication study in the community; based in 14 senior centers in western Washington state	Community-based persons aged 70 and over with at least one chronic disease	304 individuals	Individuals received health and functional status assessments from a Health Enhancement Program nurse and then received a personalized health plan to address disability risk factors, with measures taken at baseline and 1-year follow-up.	Reduction in depressed mood and the proportion of individuals who were physically inactive. Increase in average level of activity among participants who attended the program for the full year. Increase in the proportion reporting their health to be the same or better than the prior year.
Choosing Well Project[41]	At home and/or community-based Center for Health Living	Individuals aged 40+ with type 2 diabetes and community-based	340 total, randomized to 4 intervention groups	Four intervention groups: (1) computer-assisted, tailored counseling program for older persons; (2) counseling plus telephone follow-up; (3) counseling plus community resource information; and (4) counseling plus phone follow-up and community resource information. Measures taken at baseline, and 3- and 6-month follow-up.	Despite good adherence to the program, there were few significant differences between the groups. Those in all intervention groups had slightly lower fat intake at 3- and 6-month follow-up, and slightly lower total cholesterol post intervention.

(continued)

Exhibit A-1. Summary of Disease Management Studies (continued)

Disease Management Study	Site(s)	Population	Sample Size	Intervention	Outcomes
D-Net Diabetes Self-management Program[42]	Home-based study	Community-based individuals aged 40 and over with type 2 diabetes	320 individuals	Three intervention groups: (1) Basic Internet information; (2) Basic Internet information plus tailored, self-management training (with on-line coach); or (3) Basic Internet information plus peer support (via email forum). Measures taken at baseline and at 10-month follow-up.	Improvements in fat reduction and low-fat eating and changes in perceived barriers, diabetes-related social support, and depressive symptoms. Some decrease in total cholesterol, low-density lipoprotein cholesterol and lipid ratio among all intervention groups at postintervention follow-up. Improvements were greatest for the targeted dietary change outcomes (fat reduction and low-fat eating outcomes) and next largest for psychosocial outcomes (number of perceived barriers, social-support, and depressive symptoms).
Diabetes Prevention Program Research Group[43]	Home-based intervention with one annual in-person visit to research centers and semiannual blood tests	Nondiabetic patients aged 25+ with elevated fasting and post-load plasma glucose concentrations who were living in the community	3,234 total, divided into three groups	Three intervention groups: (1) 16-week basic lifestyle intervention taught over 24 weeks plus placebo (2) 16-week basic lifestyle intervention plus metformin (Glucophage®) (3) 16-week **intensive** lifestyle intervention program taught over 24 weeks	Daily energy intake decreased for all 3 groups at 1-year follow-up; fat intake decreased for all 3 groups. Compared with basic lifestyle plus placebo, the incidence of diabetes was reduced by 58% in the intensive lifestyle intervention group and 31% in the metformin group. The intensive lifestyle modification program was more effective than basic lifestyle plus metformin.

Exhibit A-2. Summary of Falls Prevention Studies

Falls Prevention Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Preventive Home-based Physical Therapy Program (PREHAB)[44,45]	Home-based physical therapy intervention	Physically frail, community-dwelling persons aged 75 and over	94 REHAB intervention group subjects and 94 education control group subjects	Randomized, 6-month intervention of home-based falls prevention program.	Those in the intervention group had reduced activities of daily living (ADL) disabilities and a net reduction in average number of days in a nursing home at 12-month follow-up.
Fitness, Arthritis, and Seniors Trial (FAST)[46]	Center-based and in-home intervention (months 1 to 3 at center and months 4 to 18 at home)	Individuals aged 60+ living in the community with knee osteoarthritis	103 total, randomized into 3 groups	Three intervention regimens for an 18-month period: (1) aerobic walking, (2) health education (control group), and (3) weight training.	Improvement in sway and balance among treatment groups. In particular, improvement in balance in eyes-open and single leg condition among aerobic and weight groups and better sway in eyes-closed and double-leg condition among aerobic group.
Home-based Fall Risk Reduction Program[40]	Home-based intervention for rural, community-dwelling older adults	Individuals aged 65 and over who lived in the community	20 randomized to treatment group and 20 randomized to control group	10-week falls reduction program with four components: (1) fall risk education, (2) exercise program, (3) nutrition education and screening, and (4) home environmental assessment.	Those in the intervention had improvements in balance, bicep endurance, falls efficacy, and nutritional behavior. It was not possible to determine the role of the different components due to the multifactorial nature of the intervention

Exhibit A-3. Summary of Medication Management Studies

Medication Management Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Personal Education Project (PEP)[47]	Senior centers	Individuals aged 60 years and over, who were living in the community and able to perform activities of daily living, had a reading level of at least 6th grade, and taking certain types of OTC or prescription drugs	30 in each of two intervention groups plus 25 in the control group (usual senior center care)	Two interventions conducted during 3 visits to the senior centers (one preintervention and two post intervention): (1) PEP (interactive computer program) plus information booklet on the use of over-the-counter (OTC) and prescription drugs or (2) information booklet on the use of OTC and prescription drugs only.	Increase in knowledge and self-efficacy in both intervention groups. The PEP group also had a decrease in adverse self-medication score at follow-up.
Drug Utilization Review (DUR) Program[48]	13 managed care, mail-service pharmacies	Patients aged 65 and over who lived in the community and used mail service pharmacies throughout the U.S.	134,629 patients	Analysis of a computerized on-line drug utilization review database to identify potentially inappropriate prescriptions by physicians	43,007 alerts among 23,269 older patients were triggered. Contact rate with physicians was 56%, reducing actionable alerts to 24, 266 among 19,368 physicians. Overall DUR change rate was 24% and 15% of the alerts resulted in immediate changes to other drugs.
Reducing Polypharmacy in Medicare Managed Care Program[49]	Medicare managed care organization serving the Houston, TX area	Older patients at risk for polypharmacy and their physicians	5,735 older persons at risk for polypharmacy and 275 primary care physicians from Medicare managed care organization	Letters sent home to patients with request to take brown bag of medications to appointments. Physicians received a letter requesting review of medication management program and notice that patients may be coming to them with brown bags.	The study found 15% of patients screened were at risk for polypharmacy. Of these, 46% responded to the follow-up survey. Of survey respondents, 42% had gone to see their primary care physician for a medication review. Only 20% of physicians responded to the follow-up survey. Of physicians who responded, 45% reported making at least one change in their prescribing to a member at risk for polypharmacy.

(continued)

Exhibit A-3. Summary of Medication Management Studies (continued)

Medication Management Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Improving Medication Use in Home Health Care Patients[50]	Home-based study	Community-based Medicare patients aged 65 and over who were using home health services between October 1996 through September 1998	259 randomized home health patients with completed follow-up interviews; 130 in the intervention group and 129 in the usual care comparison group	The intervention focused on four high-priority medication problems: unnecessary therapeutic duplication; cardiovascular medication problems; use of psychotropic drugs; and use of nonsteroidal antiinflammatory drugs (NSAIDs). For each patient, the study pharmacist and the patient's nurse jointly reviewed the medication problems and studied guidelines to determine whether reassessment by a physician was warranted. Structured templates were used to develop a plan to address the identified problem(s). The home-health nurse followed up with patients and physicians (as needed) and monitored patient outcomes for up to 3 months post intervention. Usual care patients received home health services but no medication improvement services	Medication use improved for 50% of intervention patients compared to 38% of control patients. The intervention effect was greatest for therapeutic duplication, with improvement for 71% of intervention and 24% of control patients. Use of cardiovascular medications also improved more frequently in intervention patients. There was no significant improvement for psychotropic medications or NSAIDs problems.

Exhibit A-4. Summary of Nutrition Counseling Studies

Nutrition Counseling Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Food for Heart Program[51]	8 health departments randomized to specialized intervention and 9 health departments randomized to minimal intervention	Rural patients aged 20 to 70 with hypercholesterol-emia and living in the community	216 participants in the specialized intervention and 252 participants in the minimal intervention	(1) Specialized intervention consisting of (a) public health nurse consult on diet; (b) referral to nutritionist if goals not achieved in 3 months; and (c) reinforcement by phone with follow-up at 3,6, and 12 months. (2) Minimal intervention consisting of counseling for high cholesterol as part of the health department's routine procedures.	Total and low-density lipoprotein (LDL) cholesterol declined in both groups. Those in the specialized intervention had improvement in dietary habits and greater weight loss compared to the minimal intervention.
Trial on Non-pharmacologic Interventions in the Elderly (TONE)[52]	4 academic health centers	Individuals aged 60 to 80 (living in the community) with systolic blood pressure lower than 145 mm Hg and diastolic blood pressure lower than 85 mm Hg while receiving treatment with a single antihypertension medication	875 total: 585 obese patients randomly assigned to reduced sodium intake, weight loss, or usual care; 390 nonobese patients randomly assigned to reduced sodium or usual care	Four groups, 37-month period: (1) reduced sodium intake; (2) weight loss; (3) both reduced sodium intake and weight loss; or (4) usual care among obese and nonobese patients. First 4 months = intensive phase; second 4 months = extended phase; and 9+ months = maintenance phase.	Relative to usual care, reduced hazard ratios for reduced sodium intake, weight loss, and both conditions. That is, those in the intervention groups were more likely to be free of all three of the following: cardiovascular events, high blood pressure, and antihypertensive prescription drugs during follow-up.
Nutritional Education for Older Adults with Diabetes[53]	Community-based intervention site	Individuals 65 years of age and older (living in the community) without functional limitations at baseline and with type 2 diabetes for at least 1 year	45 experimental and 47 control group members	Individuals randomized to intervention or control group. Intervention group received 10 weekly group sessions, 1 to 2 hours each, by a registered dietician, with follow-up 40 weeks and 2 years later. Control group members received opportunity for six 2-hour group sessions covering key principles from the intervention (once data collection was over).	Glycemic control increased among intervention group, fasting plasma glucose dropped in the intervention group, and proportion of the intervention group that met its goals for total cholesterol increased.

(continued)

Exhibit A-4. Summary of Nutritional Counseling Studies (continued)

Nutrition Counseling Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Dietary Counseling to Increase Milk Consumption[54]	6 academic health centers	Individuals 55 to 85 years (living in the community) who habitually consumed fewer than 1.5 servings of dairy food per day	205 men and women	Four-week baseline to observe normal conditions; then physical exams conducted and lab samples taken. Those in the intervention group told to add three 8-oz servings of milk per day; measured bone resorption and bone weight at 4,8, and 12-weeks.	Calcium and vitamin D intake increased among treatment group, as did protein, phosphorus and magnesium. A slight decrease in bone resorption among the treatment group at follow-up, suggested bone remodeling.
Dietary Intervention Evaluation of Technology (DIET)[55]	Home-based with weekly weigh-ins during first phase and monthly weigh-ins during second phase	Older adults who were overweight and living in two retirement communities (average age = 71 years)	247 total overweight older adults: 133 in the intervention group and 111 in the control (waiting list) group	10-week intensive nutrition program focused on lifestyle change, relapse prevention, and maintenance of a healthy lifestyle. Health psychologists and dieticians were available to counsel one-on-one. Control group members were offered the program on a delayed schedule. During the second (maintenance) phase, which lasted 22 weeks after the first (skills-development) phase was completed. The trial ended at 40 weeks but individuals were followed 2 and 3 years later.	Of those who started the program, 70% were still enrolled at the 2-year follow-up. Treatment group members reduced their body mass index and glucose levels. At the 3-year follow-up, those who had stayed in the program had maintained the changes in body mass index and glucose levels.

Exhibit A-5. Summary of Physical Activity Studies

Physical Activity Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Women's Health Initiative Study[56]	40 clinical centers	At baseline, postmenopausal, community-dwelling women aged 50 to 79 were free of diagnosed cardiovascular disease and cancer	73,743 women	For this observational study, women were examined and followed to determine physical activity, walking, incidence of coronary events, and total cardiovascular events. Women were tracked for up to 6 years.	Walking and vigorous exercise reduced the incidence of cardiovascular disease. Brisker walking pace and fewer hours of sitting daily also predicted lower cardiovascular risk.
Walk+ Education Program[57]	Home-based, pedometer-driven walking program	Patients aged 60 and over with osteoarthritis of the knee and self-reported functional impairment	17 randomized to the Walk+ group and 17 randomized to arthritis self-management education only (control)	Walk+ was a pedometer-driven, 24-week arthritis self-management walking program.	The Walk+ group had a 23% increase in daily steps in compared to a 15% decrease in the control group. The Walk+ group became quicker in the normal pace-walk-turn-walk test and had a 21% gain in muscle strength.
Increase in Physical Activity Among Caregivers[58]	Home-based exercise counseling or telephone-based nutrition education program (control) at home	Sedentary, postmenopausal women aged 50 and over caring for relatives with dementia who provided at least 10 hours of unpaid care per week and had not been active during the past 6 months	100 sedentary women: 51 randomized to exercise and 49 to nutrition education	After an initial face-to-face meeting, health educators provided 12 months of phone-based (1) exercise counseling or (2) information on nutrition. Each group received weekly calls the first 3 weeks, bi-weekly calls the following month, and then monthly calls through month 12. A maximum of 15 calls were available to participants in both groups.	At the end of 12 months, in the exercise group, adherence was 74% (averaging 35 minutes per exercise session), and knowledge of the benefits of exercise and motivational readiness increased. In both groups, post-intervention scores on perceived stress, burden, and depression improved.
Physical Activity Training to Increase Physical Function, Strength, and Endurance[59]	Exercise training program at indoor exercise facility (treatment) or home-based exercise program (control)	Sedentary, community-dwelling individuals aged 78 and older with mild to moderate frailty and self-reported difficulty or assistance needed with one ADL or two IADLs	69 in the exercise intervention and 50 in the home-based program (control)	A 9-month intervention with three phases: (a) group format to learn 22 exercises; (b) progressive resistance added to program; and (c) endurance training added to the program. The control group received a low-intensity, home-based exercise program.	Compared to the home exercise group, the experimental group demonstrated significantly greater improvements in three of four primary outcome measures (modified physical performance test score, peak oxygen uptake, and functional status questionnaire responses on physical function).

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Exhibit A-5. Summary of Physical Activity Studies (continued)

Physical Activity Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Fitness, Arthritis, and Seniors Trial (FAST)[60]	Facility-based for 3 months, and home-based for 15-months	Community-based adults aged 60 and over with pain in the knees on most days, difficulty due to knee pain, and radiographic evidence of knee osteoarthritis	439 total: 149 randomized to aerobic exercise, 146 to resistance training, and 144 to the control group	Two interventions: (1) The aerobic exercise group attended a facility-based walking program during months 1 to 3 and then participated in a home-based walking program during months 4 to 18. (2) The resistance training group attended a 3-month, facility-based program and participated in a 15-month, home-based program. The control group received monthly group sessions and phone calls during months 4 to 18.	Compared for the control group, the aerobic exercise group experienced significantly reduced depressive symptoms over time. No such effect was observed for the resistance training group. The reduction in depressive symptoms with aerobic exercise was found among those with and without depressive symptoms at baseline. Both aerobic and resistance exercise reduced disability and pain, and increased walking speed for persons with high and low depressive symptomatology.
Performance Enhancement Intervention for Individuals at Risk for Functional Decline[61]	Senior centers and at home	Individuals aged 70 and over with mobility impairments	155 total: 80 randomized to the performance enhancement group and 75 randomized to the control group	Three-phase intervention: During months 1 to 6, three weekly group classes by a physical therapist and two exercise leaders. During months 7 to 12, once per week classes and twice per week exercise at home tailored to each person. During months 13 to 18, three weekly home-based exercise classes. The control group received health education and nutrition information. Both groups also attended four group meetings on health topics	The senior center-based exercise group showed improvements in gait, chair rise time, and balance over the first 12 months of the study. However, improvements were not sustained with the transition to a full home program (during months 13 to 18).

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Exhibit A-5. Summary of Physical Activity Studies (continued)

Physical Activity Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Active Options Community-based Wellness Program for Older Adults[62]	Parks and recreation program offered to seniors in Littleton, Colorado	Individuals aged 60 and over who lived in the community and had access to the district's fitness facilities and pools	195 individuals who completed both preliminary and post-intervention fitness tests and the post-intervention mailed survey	The intervention consisted of unlimited access to the district's fitness facilities and pools. Members could also take advantage of 15 different types of exercise classes, including water walking, balance ball, stretching, and strength training. They were also encouraged to attend educational classes on health-related topics, and join in social activities. Individuals completed at least one fitness test prior to the initiation of the study (preintervention), and participated in the intervention from February to April 1999. They also completed both a post-intervention mail survey in May 1999 and a post-intervention fitness test in June 1999. Attendance was tracked, and members were assigned to three groups: (1) low participation—attending less than once per week, (2) moderate participation—attending 1 to 3 times per week, and (3) high participation—attending 4+ times per week.	In the first 6 months, significant improvement in flexibility was documented for all groups, with the low-participation group showing the most improvement. Exercise-based social support was found to be higher among the low- and high-participation groups than among the moderate-participation group. Results suggested that community-based programs and community parks and recreation agencies are a viable context for senior exercise/physical activity programs.

Exhibit A-6. Summary of Smoking Cessation Studies

Smoking Cessation Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Behavior Risk Factor Surveillance System (BRFSS)[60]	Secondary analysis of Behavioral Risk Factor Surveillance System data for 1996 to 1999	Community-dwelling individuals aged 65 and over who self-identified as receiving Medicare benefits over the telephone	Variable, ranging from 22,480 in 1996 to 28, 494 in 1999	No intervention: analyzed 4-year trends (cross-sectionally)	National data for 1999 indicated that interest in quitting was above 40% and increasing. Of Medicare beneficiaries who ever smoked in their lifetime, 11.3% had quit within the previous 5 years.
Health and Retirement Study (HRS) and Asset and Health Dynamics Among the Oldest Old (AHEAD) Survey[23]	Secondary analysis of the HRS and AHEAD surveys	Community population aged 50 to 61 in 1992 for the HRS; Community population aged 70+ in 1993 for the AHEAD dataset	12,652 for HRS and 8,224 for AHEAD	No intervention: analyzed longitudinal data on samples over time (3 follow-up surveys in HRS study and 2 follow-up surveys in AHEAD survey)	Dose-response relationship found between amount smoked and impaired mobility. Increased smoking led to greater mobility impairments. 15 years after quitting, impaired mobility returned to the level of never-smokers.
Tailored Smoking Cessation Program During Routine Medical Visits[63]	39 outpatient medical practices; 18 immediate-intervention sites and 21 delayed-intervention sites.	Smokers aged 50 to 74	659 total: 279 randomized to the immediate intervention and 380 randomized to the delayed intervention	Two-year randomized controlled trial comparing usual care versus brief quit-smoking advice and counseling. Medical practices, not individual participants, were randomized to interventions.	Self-reported quit rates doubled for participants in the immediate treatment group versus the delayed intervention group.
California Smokers' Helpline[64]	Telephone helpline to support smokers throughout the state of California	Smokers who called the California Smoker's Helpline (mean age = 40 years)	1973 treatment group and 1309 control group	During their first contact with the quitline, all callers were sent a package of self-help materials and asked to call back to start the counseling process. Patients were then randomized to treatment and control group. Intervention group members were immediately assigned a counselor and received up to 7 telephone counseling sessions. Counseling focused on quitting history, motivation, self-efficacy, and planning in advance of quit date. Control group members who called back received a counselor and were analyzed as control group A while those who did not call back were analyzed as control group B.	Counseling was provided to 72.1% of the treatment group and 31.6% of the control group. Compared to control groups, abstinence was higher in the treatment groups at 1, 3, 6 and 12 months. Counseling approximately doubled the abstinence rates. The 12-month abstinence rate in the treatment group was 23.3%, compared to 18.4% in the control group.

Exhibit A-7. Summary of Immunization Studies

Immunization Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Patient Education and Reminder Intervention to Increase Flu Vaccination[65]	Urban, predominantly African American, low-income community	Community-dwelling residents aged 65+ living in West Philadelphia who had not been vaccinated previously for the flu	740 community-dwelling individuals: 350 randomized to receive a postcard reminder and 390 randomized to receive an educational brochure	Individuals received either a patient education brochure designed to increase vaccine rates or a postcard reminder to get a flu shot. Follow-up took place the following year.	Those receiving the educational brochure were more likely to report receiving the influenza vaccine than were those receiving only the postcard reminder. Those who received the educational brochure were also more interested in receiving a subsequent influenza vaccine in the coming year.
Tailored Interventions to Increase Influenza Vaccination in Neighborhood Health Centers Serving the Disadvantaged[66]	Faith-based neighborhood health centers that served disadvantaged individuals in inner-city neighborhoods in Pittsburgh, Pennsylvania	Community-dwelling adults aged 50+ who were seen at low-income urban neighborhood health centers in 2000 and 2001, some of whom were subsequently vaccinated, and some of whom were subsequently not vaccinated during the 2001-2002 season	375 in the community-based sample, with 210 individuals who were subsequently vaccinated and 161 who were not vaccinated during the study period	Two health centers serving different neighborhoods developed a series of interventions to increase influenza vaccination among older adults, including posters in exam rooms, mailed reminder notices, free or low-cost vaccines, posters in the community, off-site community vaccination clinics, and standing orders to vaccinate by protocol. One site also had an electronic medical record program that indicated the date of the last influenza dose, and vaccination prompts in the vital signs screen.	Although self-reported vaccination rates did not increase from 2000-2001 to 2001-2002, results from the site with electronic medical records indicated that immunization rates increased from 24% to 30%. The strongest predictor of vaccination among patients aged 50 to 64 years was the belief that unvaccinated persons would contract influenza. Among patients aged 65+, the strongest predictor of vaccination was the belief that friends and relatives thought that they should be vaccinated.
Combined Outreach to Increase Pneumococcal and Influenza Vaccinations[67,68]	Urban senior center in Seattle, Washington	Community-dwelling residents aged 65 who lived in 5 contiguous ZIP codes	622 in the intervention group and 624 in the control group	Individuals randomized to the intervention received educational brochures mailed with reply cards to report immunization status, calls from senior volunteers reminding them to get immunizations, and computerized immunization tracking. The control group received routine care provide by the senior center with measurements provided before and after the intervention by self-report	Among those who had not previously been vaccinated, the pneumococcal vaccination rate among the intervention group was significantly higher than that of the control group. Among those without influenza vaccination in the prior year, significantly more of the intervention group received the influenza shot than the control group.

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Exhibit A-7. Summary of Immunization Studies (continued)

Immunization Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Low-literacy Patient Education Program to Increase Pneumococcal Vaccination[69]	Indigent, low-literacy African American ambulatory care clinic patients who presented for routine ambulatory care	Older persons or those with chronic disease who were patients of an ambulatory care clinic and not previously vaccinated	221 intervention group and 212 control group members who were randomized	A one-page low-literacy educational handout provided in the office (before the medical visit) encouraged intervention patients to "ask your doctor about the pneumococcal shot." Control group members received a similar amount of information about nutrition. Both groups were asked to read the handout prior to their office visit.	Members of the intervention group were 4 times more likely to discuss the pneumococcal vaccine and 5 times more likely to receive it during their visit.

Exhibit A-8. Summary of Health Screening Studies

Health Screening Study	Site(s)	Population	Sample	Intervention	Outcomes
Tailored Interventions to Increase Mammography Screening[70]	Clients' home	Women aged 51+ who were not adherent in receiving mammograms at baseline and did not have a history of breast cancer who were enrolled in one of two HMOs or a university-based primary care clinic in the greater St. Louis area	732 patients from a general medical clinic and 658 from two HMOs	Individuals were randomized to one of four groups: (1) usual care; (2) telephone counseling for mammography; (3) tailored mailed materials promoting mammography; or (4) a combination of telephone plus mail intervention. Postintervention follow-up occurred 2 months later.	Each of the three intervention groups had significantly higher mammography adherence rates than the usual care group. Odds ratios for mammography adherence ranged from 1.66 for telephone only to 2.16 for telephone plus mail.
Relative Effectiveness of Interventions to Increase Mammography Screening[71]	Home-based phone counseling and in-clinic counseling	Women patients of a large HMO or a general medical clinic over age 50 and under 85 years who had not received a mammogram during the previous 15 months and had no history of breast cancer	773 over 4 years (1996 to 2000), randomized into 6 groups	Usual care versus 5 tailored interventions to increase adherence to mammography: (1) telephone counseling; (2) in-person counseling; (3) physician letter; (4) combination of letter and telephone; (5) combination of in-person counseling and letter	At 6 months post-intervention, compared to usual care, all five intervention groups had increased mammography adherence.
Sickness Prevention Achieved Through Regional Collaboration (SPARC) Intervention[72]	Community-based influenza clinics in a semirural county	Women aged 50+ who attended a flu vaccination clinic and reported receiving no mammogram during the prior 12 months	284 women attending 9 community-based influenza clinics who were randomly assigned to treatment or control condition	The intervention was designed to see if women who attended flu vaccination clinics, when given the opportunity to receive a call from a mammography facility, would increase the number of mammograms performed over a 6-month period.	Subsequent mammogram use in the intervention sites was twice that of the sites where mammograms were not offered.

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Exhibit A-8. Summary of Health Screening Studies (continued)

Health Screening Study	Site(s)	Population	Sample Size	Intervention	Outcomes
Learn, Share, and Live Breast Cancer Education Intervention[73]	Neighborhood services program for low-income older people, with meetings held at 2 independent living housing complexes	Women aged 65+ living in 2 low-income housing complexes who were affiliated with STAES (System to Assure Elder Services) social networks	240 at baseline (one site only) and 337 and 323 in Years 2 and 3 (for the two sites combined)	The Learn, Share, and Live intervention consisted of a core program, which involved 3 half-day educational sessions plus follow-up (determined by site). Site 1 promoted the use of mammograms and spent resources to rent a mobile mammography van and provide mammograms on site. Site 2 conducted small-group education sessions at homes and churches on the importance of obtaining mammograms.	Mammogram adherence and stage of adoption increased at Site 1. Improvements in adherence rates were maintained through year 3. Site 1 performed more successfully than Site 2, in part, due the difference between the respective choices of follow-up activities.
Manipulating Perceptions to Increase Screening of Colorectal Cancer[74]	Duke University Risk Communication Lab	Community-dwelling individuals aged 50+ who had not had a fecal occult blood test (FOBT) within the past two years	19 men and women who were off schedule for receiving a FOBT	Individuals were randomized into one of four groups: (1) received information on colorectal cancer (CRC) risk and severity; (2) received information on CRC risk, but not severity; (3) received information on CRC severity, but not risk; and (4) did not receive information on CRC risk or severity.	Measures were taken at baseline, immediately after the intervention, and 6-months later. Receiving only risk information did not alter perceptions of CRC risks. However, receiving severity information increased intentions for screening immediately after the intervention. At 6-month follow-up, 31% of the sample had received a FOBT. Compared to those who received no information on severity or risk, those who received severity information were almost twice as likely to have had a FOBT.
Hypertension Management Using Home Blood Pressure Devices[75]	Home-based, and outpatient community health center	Hypertensive men and women aged 65+ (living in the community) with clinic systolic blood pressure < 150 mmHg and diastolic blood pressure < 90 mmHg while on antihypertensive medications, or with higher clinic blood pressures but off of antihypertensive medications	40 total: 20 randomized to the home group and 20 randomized to the clinic group	The goal of the intervention was to maintain maximum blood pressure control with the least amount of medications. Members of the home-based group were taught to measure their own blood pressure and reported these measurements over the phone to project nurse. Members of the clinic group were seen every two weeks and had blood pressure taken by a project nurse. Repeat measurements were taken at 3-month follow-up.	At baseline, the home group had slightly higher ambulatory wake and sleep blood pressure than the clinic group. By 3-month follow-up, the home group blood pressures were comparable to those of the clinic group. Nurse-measured clinic blood pressure for the home group began higher and remained higher than that of the clinic group. However, average home-measured blood pressure for the home group was lower than average nurse-measured blood pressure for this same sample, indicating the persistent "white coat" effect for the home group. Both groups had similar changes in quality of life scores at follow-up and similar rates of decrease and/or discontinuance of antihypertensive medication at the end of 3 months.

REFERENCES

[1] Rabiner, D.J., D.A. Brown, K. Mandel, J. Maier & B. Gage (2004). *Conceptual Framework and Literature Review for the Evaluation of the Disease Prevention and Health Promotion Services Program of the Older American Act.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Research Triangle Park, NC: RTI International.

[2] Hoffman, C., Rice, D., & Sung, H.Y. (1996). Persons with chronic conditions: Their prevalence and costs. *Journal of the American Medical Association*, 276, 473–1479.

[3] Lorig, K., Ritter, P., Stewart, A., Sobel, D., Brown, B. W., Bandura, A., González, V. M., Laurent, D.D., & Holman, H. (2001). Chronic disease self-management program. 2-year health status and health care utilization outcomes. *Medical Care*, 39(11), 1217–1223.

[4] Corbin, J., & Strauss, A. (1988). *Unending work and care: Managing chronic illness at home*. San Francisco, CA: Jossey-Bass.

[5] Lorig, K.R., Sobel, D.S., Stewart, A.L. et al. (1999). Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization. *Medical Care*, 37(1), 5–14.

[6] Diabetes Prevention Program Research Group (2002). Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*, 346(6), 393–403.

[7] Fuller, G. (2000). Falls in the elderly. *American Family Physician*, 61, 2159–68; 2173-4.

[8] Yates, S.M., & Dunnagan, T.A. (2001). Evaluating the effectiveness of a home-based fall risk reduction program for rural community-dwelling older adults. *Journal of Gerontology: Medical Sciences*, 56A(4), M226–230.

[9] Tinetti, M.E. & Williams, C.S. (1997). Falls, injuries due to falls, and the risk of admission to a nursing home. *New England Journal of Medicine*, 337(18), 1279-84.

[10] Haber, D. (2003). Health promotion and aging: Practical applications for health *professionals* (3rd ed.). New York, New York: Springer Publishers, Inc.

[11] Lazarou, J., et al. (1998). Incidence of adverse drug reactions in hospitalized patients; A meta-analysis of prospective studies. *Journal of the American Medical Association*, 279, 1200–1205.

[12] Gurwitz, J., et al. (2003). Incidence and preventability of adverse drug events among older persons in the ambulatory setting. *Journal of the American Medical Association*, 289, 1107–1116.

[13] Rowe, J.W., & Kahn, R.L. (1998). *Successful Aging*. New York: Pantheon Books.

[14] Geffken, D., Cushman, M., Burke, G., et al. (2001). Association between physical activity, and markers of inflammation in a healthy elderly population. *American Journal of Epidemiology*, 153, 242–250.

[15] Mazzeo R., Cavanagh, P., & Evans, W. (1998). American College of Sports Medicine Position Stand: Exercise and physical activity for older adults. *Journal of Medical Science Sports Exercise*, 30, 992–1008.

[16] U.S. Department of Health and Human Services (2000). *Healthy People 2010: Understanding and improving health* (2nd ed.) Washington, DC: U.S. Government Printing Office.

[17] Marcus, B.H., Dubbert, P.M., Forsyth, L.H., et al. (2000). Physical activity behavior change. Issues in adoption and maintenance. *Health Psychology*, 19, 32–41.

[18] Jette, A.M., Lachman, M., Giorgeti, M.M., et al. (1999). Exercise—It's Never too late: The Strong for Life Program. *American Journal of Public Health*, 89(1) 66–72.

[19] Arday, D.R., Lapin, P., Chin, J., et al. (2002). Smoking patterns among seniors and the Medicare Stop Smoking Program. *Journal of the American Geriatrics Society*, 40, 1689–1697.

[20] Orleans, C.T. (1997). Reducing tobacco harms among older adults: A critical agenda for tobacco control. *Tobacco Control*, 6, 188–193.

[21] Ossip-Klein, D.J., Pearson, T.A., McIntosh, S., et al. (1999). Smoking is a geriatric health issue. *Nicotine Tobacco Research*, 1, 299–300.

[22] Fried, L.P., Freedman, M., Endres, T.E., et al. (1997). Building communities that promote successful aging. *Western Journal of Medicine*, 167, 216–219.

[23] Ostybe, T., Taylor, D.H., Kraus, K.K., et al. (2002). The role of smoking and other modifiable lifestyle risk factors in maintaining and restoring lower body mobility in middle-aged and older Americans: results from the HRS and AHEAD. *Journal of the American Geriatrics Society*, 50, 691–699.

[24] U.S. Preventive Services Task Force (1989). *Guide to clinical preventive services: An assessment of the effectiveness of 169 interventions*. Baltimore, MD: Williams & Wilkins.

[25] U.S. Preventive Services Task Force (1996). *Guide to clinical preventive services*. Baltimore, MD: Williams & Wilkins.

[26] Nordin, J., et al. (2001). Influenza vaccine effectiveness in preventing hospitalizations and deaths in persons aged 65 and older in Minnesota, New York, and Oregon: Data from three health plans. *Journal of Infectious Diseases*, 184, 665–670.

[27] Nichol, K. et al. (2003). Influenza vaccination and reduction in hospitalizations for cardiac disease and stroke among the elderly. *New England Journal of Medicine*, 348, 1322–1332.

[28] Healthy People 2010. A systematic approach to health improvement. Web site address: *www.healthypeople.gov/document/html/uih/uih_2.html.* Accessed on November 4, 2003.

[29] Bloom, H.G. (2001). When to screen for disease in older patients. *Geriatrics*, 58(4), 41–45.

[30] Goldberg, T.H., & Chavin, S.I. (1997). Preventive medicine and screening in older adults. *Journal of the American Geriatric Society*, 45, 344–354.

[31] Maier, J., J.M. Wiener, & B. Gage (2005). *Case Studies of Health Promotion in the Aging Network: Area Agency on Aging, Region One, Maricopa County, Arizona.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[32] Brown, D.W., J.M. Wiener, & B. Gage (2005). *Case Studies of Health Promotion in the Aging Network: Los Angeles County Area Agency on Aging.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[33] Mitchell, N., J.M. Wiener, & B. Gage (2005). Case Studies of Health Promotion in the Aging Network: Division of Services for Aging and Adults with Physical Disabilities of Delaware. (Prepared for the U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[34] Brown, D.W., D. Rabiner, J.M. Wiener, & B. Gage (2005). *Case Studies of Health Promotion in the Aging Network: The Area Agency on Aging of Central Florida, Inc.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[35] Mitchell, N., J.M. Wiener, & B. Gage (2005b). *Case Studies of Health Promotion in the Aging Network: Atlanta Regional Commission.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[36] Walsh, E & N. Mitchell (2005). *Case Studies of Health Promotion in the Aging Network: Southern Maine Agency on Aging.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[37] Brown, D.W., D. Rabiner, J.M. Wiener, & B. Gage (2005). *Case Studies of Health Promotion in the Aging Network: Council on Aging of Southwestern Ohio.* (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[38] Osber, D., D. Rabiner, J.M. Wiener & B. Gage (2005). *Case Studies of Health Promotion in the Aging Network: Aging and Disability Services of Seattle, Washington*. (Prepared for the Administration on Aging, U.S. Department of Health and Human Services) Waltham, MA: RTI International.

[39] Leveille, S.C., Wagner, E.H., Davis, C., et al. (1998). Preventing disability and managing chronic illness in frail older adults: A randomized trail of a community-based partnership with primary care. *Journal of the American Geriatrics Society*, 46, 1191–1198.

[40] Phelan, E.A., Williams, B., Leveille, S., et al. (2002). Outcomes of a community-based dissemination of a health enhancement program. *Journal of the American Geriatrics Society*, 50, 1519–1524.

[41] Glasgow, R.E., & Toobert, D. (2000). Brief, computer-assisted diabetes dietary self-management counseling. *Medical Care*, 38(11), 1062–1073.

[42] Glasgow, R.E., Boles, S.M., McKay, G., et al. (2003). The D-Net diabetes self-management program: Long-term implementation, outcomes and generalization results. *Preventive Medicine*, 36, 410–419.

[43] Diabetes Prevention Program Research Group (2002). Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*, 346(6), 393–403.

[44] Gill, T.M., Baker, D.I., Gottschalk, M., Peduzzi, P.N., et al. (2002). A program to prevent functional decline in physically frail elderly persons who live at home. *New England Journal of Medicine*, 347, 1068-74.

[45] Gill, T.M., Baker, D.I., Gottschalk, M., Gahbauer, E.A., et al. (2003). A prehabilitation program for physically frail community-living older persons. *Archives of Physical Medicine and Rehabilitation*, 84, 394–404.

[46] Messier, S.P., Royer, T.E., Craven, M.L., et al. (2000). Long-term exercise and its effect on balance in older, osteoarthritis adults? Results from the Fitness, Arthritis, and Seniors Trial (FAST). *Journal of the American Geriatrics Society*, 48(2), 131–8.

[47] Neafsey, P.J., Strickler, Z., Shellman, J., & Chartier, V. (2002). An interactive technology approach to educate older adults about drug interactions arising from over-the-counter self-medication practices. *Public Health Nursing*, 19(4), 255–262.

[48] Monane, M., Matthias, D.M., Nagle, B.A., & Kelly, M.A. (1998). Improving prescribing patterns for the elderly through an online drug utilization review intervention: A system linking the physician, pharmacist, and computer. *JAMA*, 280, 1249–1252.

[49] Fillit, H.M., Futterman, R., Orland, B.I., et al. (1999). Polypharmacy management in Medicare managed care: Changes in prescribing by primary care physicians resulting from a program promoting medication reviews. *American Journal of Managed Care*, 5(5), 587–594.

[50] Meredith, S, Feldman, P, Frey, Dennee, et al. (2003). Improving medication use in newly admitted home healthcare patients: A randomized controlled trial. *Journal of the American Geriatrics Society*, 50, 1484-1491.

[51] Ammerman, A.S., Keyserling, T.C., Atwood, J.R., et al. (2003). A randomized control trial of a public health nurse directed treatment program for rural patients with high blood cholesterol. *Preventive Medicine*, 36, 340–351.

[52] Whelton, P.K., Appel, L.J., Esperland, M.A., et al. (1998). Sodium reduction and weight loss in the treatment of hypertension in older persons. *Journal of the American Medical Association*, 279, 839–46.

[53] Miller, C.K., Edwards, L., Kissling, G., et al. (2002). Nutrition education improves metabolic outcomes among older adults with diabetes mellitus: Results from a randomized controlled trial. *Preventive Medicine*, 34, 252–259.

[54] Heaney, R.P., McCarron, D.A., Dawson-Hughes, B., et al. (1999). Dietary changes favorably affect bone remodeling in older adults. *Journal of the American Dietetic Association*, 99(10), 1228–36.

[55] Domelas, E.A., Wylie-Rosett, J., & Swencionis, C. (1998). The DIET study: long-term outcomes of a cognitive-behavioral weight-control intervention in independent-living elders. *Journal of the American Dietetic Association*, 98(11), 1276–85.

[56] Manson, J., Greenland, P., LaCroix, A., Stefanick, et al. (2002). Walking compared with vigorous exercise for the prevention of cardiovascular events in women. *New England Journal of Medicine*, 347(10), 716–725.

[57] Talbot, L.A., Gaines, J.M., Huynh, T.N., et al. (2003). A home-based pedometer-driven walking program to increase physical activity in older adults with osteoarthritis of the knee: A preliminary study. *Journal of the American Geriatrics Society*, 51, 387–392.

[58] Lorig, K. & Fries, J. (1995). *The Arthritis Helpbook: A tested self-management program for coping with arthritis and fibromyalgia* (4th ed.). Reading, MA: Perseus Books.

[59] Binder, E.F., Schechtman, K.B., Ehsani, A.A., et al. (2002). Effects of exercise training on frailty in community-dwelling older adults: Results from a randomized, controlled trial. *Journal of the American Geriatrics Society*, 50, 1921–1928.

[60] Penninx, B.W.J.H., Rejeski, W.J., Pandya, J., et al. (2002). Exercise and depressive symptoms: A comparison of aerobic and resistance exercise effects on emotional and physical function in older persons with high and low depressive symptomatology. *Journal of Gerontology: Psychological Sciences*, 57B(2), P124–132.

[61] King, M.B., Whipple, R., Gruman, C.A., Judge, J.O., Schmidt, J.A., & Wolfson, L. (2002). The performance enhancement project: Improving physical performance in older persons. *Archives of Physical Medicine and Rehabilitation*, 83, 1060–1069.

[62] Orsega-Smith, E., Payne, L.L, & Godbye, G. (2003). Physical and psychological characteristics of older adults who participate in a community-based exercise program. *Journal of Aging and Physical Activity*, 11, 516-531.

[63] Morgan, G.D., Noll, E.L., Orleans, C.T., et al. (1996). Reaching midlife and older smokers: Tailored interventions for routine medical care. *Preventive Medicine*, 25, 346–354.

[64] Zhu, S., Anderson, C.M., Tedeschi, G.J., et al. (2002). Evidence of real-world effectiveness of a telephone quitline for smokers. *New England Journal of Medicine*, 347, 1087–1093.

[65] Armstrong, K., Berlin, M., Schwartz, J. et al. (1999). Educational content and the effectiveness of influenza vaccination reminders. *Journal of General Internal Medicine*, 14, 695–698.

[66] Zimmerman, R.K., Nowalk, M.P., Raymund, M., et al. (2003). Tailored interventions to increase influenza vaccination in neighborhood health centers serving the disadvantaged. *American Journal of Public Health*, 93, 10, 1699-1705.

[67] Krieger, J., Castorina, J., Ciske, S., Walls, M., et al. (2000). Increasing influenza and pneumococcal immunization rates: A randomized controlled study of a senior center-based intervention. *American Journal of Preventive Medicin*e, 118, 123–131.

[68] Weaver, M., Krieger, J., Castorina, J., et al. (2001). Cost-effectiveness of combined outreach for the pneumococcal and influenza vaccines. *Archives of Internal Medicine*, 161, 111–120.

[69] Jacobson, T.A., Thomas, D.M., Morton, F.J., et al. (1999). Use of a low-literacy patient education tool to enhance pneumococcal vaccination rates. *Journal of the American Medical Association*, 282(7), 646–650.

[70] Champion, V.L., Skinner, C.S., Menon, S., et al. (2002). Comparisons of tailored mammography interventions at two months postintervention. *Annals of Behavioral Medicine*, 24(3), 211–218.

[71] Champion, V., Maraj, M., Hui, S., et al. (2003). Comparison of tailored interventions to increase mammography screening in nonadherent older women. *Preventive Medicine*, 36, 150–158.

[72] Shenson, D., Cassarino, L., DiMartino, D., et al. (2001). Improving access to mammograms through community based influenza clinics. *American Journal of Preventive Medicine*, 20(2), 97–102.

[73] Skinner, C.S., Arfken, C.L., & Waterman, B. (2000). Outcomes of the Learn, Share & Live Breast Cancer Education Program for Older Urban Women. *American Journal of Public Health*, 90(9), 1229–1234.

[74] Lipkus, I.M., Green, L.A., & Marcus, A. (2003). Manipulating perceptions of colorectal cancer threat: Implications for screening intentions and behaviors. *Journal of Health Communication*, 8, 213–228.

[75] Broege, P.A., James, G.D., & Pickering, T.G. (2001). Management of hypertension in the elderly using home blood pressures. *Blood Pressure Monitoring*, 6, 139–144.