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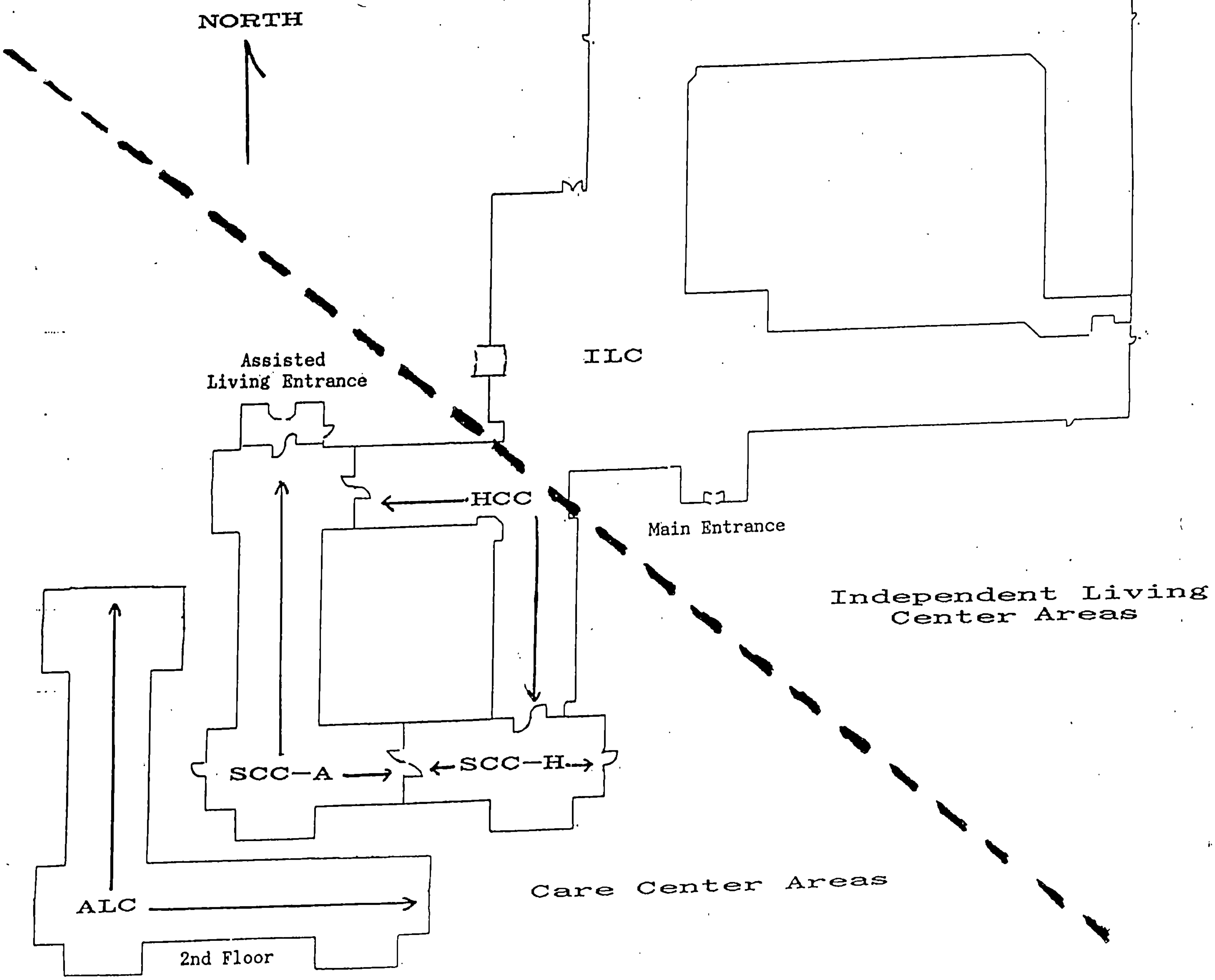

AUG 12 1988

DATE: August 10, 1988

FOR IMMEDIATE RELEASE:

St. Mark Village opens the Michael Bilirakis Alzheimers Care Center.

CONTACT:

Al Simpson
Director of Public Relations
St. Mark Village
2655 Nebraska Avenue
Palm Harbor, FL 34663
(813) 785-2576

St. Mark Village of Palm Harbor is pleased to announce the pending opening of the Michael Bilirakis Alzheimers Center and a special division of "assisted living" apartments.

The Alzheimers Care Center is named for Congressman Michael Bilirakis, U.S. House of Representatives, Ninth District of Florida, in recognition of his continuous effort to address the needs and problems of the aging population, particularly those suffering from Alzheimers and related dementia disorders.

The first floor of the new, two story addition is dedicated to the care of Alzheimers sufferers. It will consist of 20 nursing beds and 31 special assisted living apartments. "We believe it to be the first such facility in the nation designed to provide care for patients with Alzheimers Disease and other types of dementia, from the beginning diagnosis through terminal stages of the illness," said Allan Simpson, Director of Public Relations for St. Mark Village. Statistics indicate approximately 20 percent of the population over age 80 suffer from some type of dementia disorder, and 60 percent of these are in some stage of Alzheimers." Simpson continued, noting that "more than 100,000 die of Alzheimers Disease annually which makes it the fourth leading cause of death in adults, after heart disease, cancer, and stroke."

Also opening is a new health care division of the Village. This 34 apartment assisted living unit is designed for those physically impaired who need extra assistance with medicines and personal care. The aim is to provide the greatest degree of personal freedom possible in beautiful homelike surroundings.

While all facilities are primarily for the continuing care of St. Mark Village residents, the added capacity will be available to people in the Tampa Bay Area as well. It is also expected that short term respite care will be made available in the Bilirakis Alzheimer's Center.

St. Mark Village is a not-for-profit independent corporation founded by the St. Mark Lutheran Church of Dunedin. It receives no tax based support or assistance. Regulated by Florida H.R.S. and other regulating authorities, it maintains a superior rating.

The entire complex, including the eight year old apartment building and regular nursing center have been completely renovated and redocorated as part of the expansion program.

Its 11.5 acre campus offers residents deluxe studio, one and two bedroom apartments, each with complete kitchen and screened patio. Residents pay an admission fee based on the size of an apartment plus monthly maintenance fees ranging from $580 up depending on apartment size and occupancy (singles or double). The monthly fee provides one full meal daily (three are available), weekly maid service, 24 hour security and emergency nursing call, all utilities, pool, transportation and many other amenities. A skilled and caring staff free the resident from the daily routines of caring for the home to allow full and free enjoyment of the aging years.

November 4, 1988
To: Mike
From: Anne

TALKING POINTS -- ALZHEIMER'S DISEASE

Mike has been a leading advocate of assistance for Alzheimer's disease patients and their families.

100th Congress

August 1988: St. Mark Village opened an Alzheimer's center named for Mike Bilirakis in recognition of the work he has done and will do in the future for individuals suffering from Alzheimer's Disease.

August 1988: MB provided support for "ID Bracelets for Alzheimer's Disease Patients", a project of the Alzheimer's Disease Support Group and the Pasco County Sheriff Department.

June 1988: Mike supported the rule Governing debate on H.R. 3436, the Pepper/Roybal Home Care Bill. By a vote of 169 to 243, the U.S. House of Representatives voted down H.R. 3436, a measure that would have extended Medicare home health coverage to millions of Americans, young and old, who suffer from AD and other chronic illnesses or disabilities. Had H.R. 3436 become law, it would have gone a long way towards helping AD families with the provision of home care.

June 1988: Mike cosponsored H.J.Res. 449, a joint resolution designating the month of November 1988 as "National Alzheimer's Disease Month", which is currently pending in the Post Office and Civil Service Subcommittee on Census and Population.

November 1987: Mike cosponsored H.R. 1451, The Older American Amendments of 1987, which was signed into law (P.L. 100-175) on November 27, 1987.

Authorizes the Director of the National Institute on Aging to conduct clinical trials on the use of drugs in the treatment of Alzheimer's Disease. Authorizes appropriations for such trials for FY 1988.

Requires the secretary to make from 3 to 5 three year grants to states for demonstration projects providing a broad range of services to individuals suffering from Alzheimer's Disease or other related disorders and to their families and care givers.

99th Congress

MB introduced H.R. 66 and H.R. 67, The Alzheimer's Relief Package

These bills would establish family support groups and Alzheimers Disease demonstration projects respectively.

Substance of H.R. 66 (family support groups bill) was accepted as an amendment in Committee to H.R. 4055, The Protection and Advocacy Services for Mentally Ill Persons Act of 1986.

H.R. 4055, MB sponsored with Waxman, passed the House on January 30, 1986 (290-84) and subsequently laid upon the table. The House on (1/30/86) attached H.R. 4055 as an amendment to S. 974, Senator Weicker's Protection and Advocacy bill. The Conference Report passed on May 13, by a vote of 383-21. The Conference Report was signed into law (P.L. 99-319) on May 23, 1986.

Title IV of P.L. 99-319 amends title III of the Public Service Act to direct the Secretary to promote family support groups for Alzheimer's disease patients and their families, and establish a nationwide network to coordinate such groups.

NOVEMBER 4, 1988 UPDATE ON FAMILY SUPPORT GROUPS:

This family support group program was never implemented by NIMH because NIA already has funding for a very similar program. P.L. 99-660 directed NIA to establish a clearinghouse for services for victims of Alzheimer's Disease and their families. NIA is currently contracting with outside agencies for such services.

H.R. 5300, now (P.L. 99-509) incorporated H.R. 67 which provided authority for five 3 year demonstration projects to be established in order to determine the feasibility of extending Medicaid assistance for Alzheimer's Disease victims.

NOVEMBER 4, 1988 UPDATE ON DEMONSTRATION PROJECTS:

The bureau of Program Operations has conducted site visits and narrowed the number of possible sites to nineteen. Recommendations were made to Dr. William L. Roper, Administrator, Health Care Financing Administration (HCFA) in October. Within the next two weeks, Dr. Roper will select at least five demonstration sites and no more than ten.

aer/10-88

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The family support groups would be established in health care facilities receiving federal funds for Alzheimer's research.

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pg 1

President may visit Pinellas

Bilirakis wants Bush for center dedication

By TERESA BURNEY
Times Staff Writer

PALM HARBOR — President George Bush may visit Palm Harbor next week, an official said as he held his breath, crossed his fingers and knocked on wood.

U.S. Rep. Michael Bilirakis, R-Fla., has been trying to get a president to Palm Harbor to dedicate the wing for Alzheimer's disease patients at the St. Mark Village retirement center since Ronald Reagan was in office, said David White, the congressman's press secretary.

White confirmed Wednesday that Bush might be able to make it to Palm Harbor next week to dedicate the wing during a visit to Florida.

The wing is open and is named after Bilirakis.

"We are not really supposed to say anything because nothing has been firmed up," White said. "It could fall through."

Other plans to bring presidents to Palm Harbor have.

Bilirakis tried to get Reagan there for the retirement center dedication when he was president and that failed, White said.

GEORGE BUSH

"Several times we went down that primrose path and got caught by a thorn," White said.

But this time the plans have gone further than before, White said.

However, the president's advance team, which travels ahead of the president to make sure that he can safely visit places, has not visited Pinellas County and it could nix the plans.

Sean Walsh of the White House Press Office said that the president's schedule for his visit to Florida had

Please see **BUSH** Page 8

Bush from Page 1

not been completed Wednesday.

"We haven't announced any such plans" to visit the Palm Harbor retirement center, Walsh said.

Walsh said the president is planning a trip to California and Texas that will end in Florida next Wednesday and Thursday.

St. Mark retirement center has not been given a final answer yet, either, said Michael Spong, the center's marketing and public relations director.

"We are not ruling out the possibility of President Bush coming here but I haven't gotten anything final yet," Spong said.

Bush visit is in the works

Clwt Sun Pg 1A

BY ANN BAKKALAPULO
Staff writer

President Bush may be making a special visit to Palm Harbor next Thursday for the dedication of the Alzheimer's Center at St. Mark Village.

PRESIDENT BUSH

Bush has been asked to dedicate the Alzheimer's Center in honor of U.S. Rep. Mike Bilirakis of Tarpon Springs. Chances are good the president will be there for the ceremony, officials said.

MIKE BILIRAKIS

"Nothing is written in stone, but I think the chances are pretty good," said Dave White, a spokesman for Bilirakis. "It looks like President Bush will make it down."

The White House "advance team" must first determine if the area is secure enough for a visit from Bush, White said. That determination may come as early as today.

"Bilirakis invited the president because Alzheimer's disease has been an emerging subject for the past five or six

Please see • BUSH, page 4A

BUSH

CONTINUED FROM PAGE 1A

years, and it is a very important issue for a large segment of the population," White said.

St. Mark Village, 2655 Nebraska Ave., is a non-profit, full-service retirement center. The Alzheimer's Center, a separate wing in St. Mark Village, was opened in December. The center is designed for the care and treatment of people with Alzheimer's disease and other related disorders, said Edgar Hutfilz, executive director of St. Mark Village.

Alzheimer's disease is a degenerative mental disorder common among elderly people. It is gradual and results in many different types of symptoms, including incognizance and memory loss.

"The disease affects a lot of people and needs a lot of attention," said White. "The president's visit is one way of trying to rectify this problem and end the suffering. It's important to keep the issue publicized and keep the president aware of it."

Hutfilz said he would be "very excited to have the president dedicate the center because it would show the public the seriousness of the disease."

"It will be dedicated to Bilirakis because he has shown a lot of concern for this disease and wants to do anything for a cure," Hutfilz said.

OBITUARIES

Bush coming to Palm Harbor to open Alzheimer's center

Section B - pg-1

By **RAY LOCKER and BRUCE DUDLEY**
Tribune Staff Writers

WASHINGTON — President Bush will dedicate an Alzheimer's disease care center in Palm Harbor on next Thursday, the final stop in a four-day trip in which he will promote his legislative proposals, congressional and White House sources said Wednesday.

Details for the Palm Harbor stop have not been completed, said U.S. Rep. Mike Bilirakis, but Bush is expected to arrive in the afternoon after an appearance in Miami.

"It looks like it's definitely on his schedule," Bilirakis said.

Bilirakis said Bush will appear at the St. Mark's Village retirement center in Palm Harbor to open the Mike Bilirakis Alzheimer's Wing, the first treatment center of its kind in the nation.

Bush

Ed Hutfilz, St. Mark's executive director, said the wing was named for Bilirakis because of his extensive work on issues concerning Alzheimer's and the elderly.

"We felt it was an appropriate tribute for the work he has done," Hutfilz said.

Members of a White House advance team are expected to arrive in Palm Harbor today to examine St. Mark's Village for security and to determine the best place for Bush to speak, Bilirakis aides said.

Bilirakis, a Palm Harbor Republican, is a member of the House Energy and Commerce Committee's Health and the Environment Subcommittee, which handles elderly health care issues.

Bush's Florida stops next week will touch on two key issues to the state — drugs and the elderly. In Miami, Bush will participate in a drug forum with officials from the United States Coast Guard, Customs Service and the Drug Enforcement Administration.

The Bush tour begins Monday in Chicago, where he will address the American Newspaper Publishers Association. Then he will fly to Palo Alto, Calif., where he will speak Tuesday morning.

Bush will stop Tuesday night in Los Angeles to meet with former President Ronald Reagan. Bush will speak to the Texas Legislature in Austin on Wednesday and then fly to Miami for his two Florida appearances the next day.

Gov. Bob Martinez is heading a group of Republican officials who are expected to be traveling with Bush when he visits Florida.

"We're making preparations for the governor to be with him for most of the day," said Brian Ballard, the governor's operations director.

Rep. C.W. Bill Young of Seminole said he is planning to be with the president but it will depend on what legislation is being considered by the House on Thursday.

"Our ties with him are long established," Young said, pointing out that he backed Bush when he ran against Reagan for the presidency in 1980.

Predicting that Bush will be making more visits to Florida, Young said, "He appreciates Florida because we gave him the best vote in the election."

Impact fee

as the country's most urgent health problem. Only 14 percent

Clearwater Sun
August 6 1988

Alzheimer center set to open

BY JUDI MIDDLETON
Staff writer

PALM HARBOR — The only Pinellas County live-in center designed to care for victim's of Alzheimer's disease is set to open soon in St. Mark Village.

MIKE BILIRAKIS

And the Mike Bilirakis Alzheimer's Center also is only the second facility in Florida specifically designed to treat Alzheimer's patients, according to St. Mark Village officials.

The two-story addition to the village's 324-unit congregate living facility on Nebraska Avenue consists of 20 nursing beds and 31 assisted-living beds on the first floor Alzheimer's section.

The second level holds 34 apartments for people without Alzheimer's disease who nonetheless need assisted-living quarters.

"We named the center to honor Mr. Bilirakis (Republican congressman from Palm Harbor) because of all the work he has done to get the center off the ground," said Yeurith Way, resident liason at St. Mark Village.

"He has been very interested in the center from the beginning, and served as guest speaker at several of the functions we held during the planning of the center."

Mrs. Way said the Alzheimer center features hospital-type rooms for Alzheimer patients who need advanced care. It also has apartment-style living arrangements for those who have not reached that stage, but need assistance.

It will afford its residents constant medical attention, if necessary, with nurses and nursing aides on duty 24 hours a day.

"And doctors will be on the premises three days per week, and on call all the time," Mrs. Way said.

An Alzheimer patient needing advanced care will pay $75 per day for a semi-private room or $90 per day for a private room. For assisted-living in the Alzheimer's section, a resident will pay $1,600 per month for semi-private accomodations, and $1,950 for a private room. The prices include all meals and maid service.

Those wishing information about the Mike Bilirakis Alzheimer's Center may call 785-2576.

speech While she was there, one older lady told Bar how desperately lonely she had been until she volunteered. Her eyes filled with tears in the remembering. And then her face lit up, as she told Barbara, "I have never been lonely a day since."

One need matches another need -- and a wonderful thing happens. You come up with an answer that money just can't buy. That's one reason we need to rely less on the collective wallet, and more on collective will.

The society that worships money -- or sees money as a cure for all that ails it -- is a society in peril. But we are not that kind of people. And we must do more than wish we had more to spend. Because the challenge of education reform suggests something much more fundamental than money.

BOBX p.185 Lobb the nation $30 bill X

Already, ~~we~~ spend~~s~~ more on education than on defense. We spend more money per student per year than any other country in the world -- including Japan. ~~Federal spending for education~~ -- which is only a fraction of the total ~~-- has increased 00~~ percent over the ~~last~~ decade.

Omit

H. Dingle

6690

Tot. → we spend most → Lisa Graham

P. 65-6

One thing I learned in school is sometimes there's more than one right answer. More spending -- that isn't the only right answer, or even the best answer. What is needed -- what this conference is all about -- is a shared determination on the part

Report of the Advisory Panel on Alzheimer's Disease[*]

Submitted to the Congress
of the United States,

to the Secretary,
U. S. Department of
Health and Human Services,

and
to the Council on Alzheimer's Disease,
U. S. Department of
Health and Human Services,

for the period of
March 1, 1988 - February 28, 1989

---

[*] This Panel, Congressionally mandated by Public Law 99-660, was appointed by the Director of the Office of Technology Assessment, a non-partisan analytical agency that serves the U.S. Congress. The Panel was charged to advise the Department of Health and Human Services (DHHS) and its Council on Alzheimer's Disease, as well as the Congress, on Alzheimer's research priorities and policy recommendations. Its Chairperson was appointed by the Secretary of DHHS, and its activities have been administered through DHHS.

ADVISORY PANEL
ON ALZHEIMER'S DISEASE

APPOINTED MEMBERS

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Director, Dementia Research Service
Burke Rehabilitation Center
White Plains, New York

Elaine M. Brody, M.S.W.
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Philadelphia Geriatric Center
Philadelphia, Pennsylvania

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Assistant Secretary for Health
Department of Health and Human Services

Mrs. Carol Fraser Fisk
Commissioner on Aging
Administration on Aging

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FOREWORD

FOREWORD

The Advisory Panel on Alzheimer's Disease, established under Public Law 99-660, was given the following mandate:

> The Panel shall assist the Secretary [of the Department of Health and Human Services] and the Council [on Alzheimer's Disease, an intra-governmental task force also established under P.L. 99-660] in the identification of priorities and emerging issues with respect to Alzheimer's disease and related dementias and the care of individuals with such disease and dementias. The Panel shall advise the Secretary and the Council with respect to the identification of--
>
> (1) emerging issues in, and promising areas of, biomedical research relating to Alzheimer's disease and related dementias;
>
> (2) emerging issues in, and promising areas of, research relating to services for individuals with Alzheimer's disease and related dementias and their families;
>
> (3) emerging issues and promising initiatives in home and community based services, and systems of such services, for individuals with Alzheimer's disease and related dementias and their families; and
>
> (4) emerging issues in, and innovative financing mechanisms for, payment for health care services and social services for individuals with Alzheimer's disease and related dementias and their families, particularly financing mechanisms in the private sector. (Sec. 922[a])

The Panel herewith transmits its first report, as required by Section 922(b) of the above mentioned law:

> The Panel shall prepare and transmit to the Congress, the Secretary, and the Council, and make available to the public, an annual report. Such report shall contain such recommendations as the Panel considers appropriate for administrative and legislative actions to improve services for individuals with Alzheimer's disease and related dementias and their families and to provide for promising biomedical research relating to Alzheimer's disease and related dementias.

This report, which reflects the work of the Panel for the period from March 1, 1988 through February 28, 1989, contains a series of public policy and science policy recommendations for both administrative and legislative action in the areas of biomedical research, health services research, services delivery, and the financing of health care and social services to benefit those suffering from Alzheimer's disease and related dementias and their families. Although representing the expertise and best scientific judgment of the Panel, the recommendations in the report do not necessarily reflect the position of the U. S. Public Health Service, the Department of Health and Human Services, nor of the Administration. While some or all of the recommendations may be worthy, they have not been reviewed within the context of other competing priorities within the Department of Health and Human Services.

EXECUTIVE SUMMARY

The dementing disorders are a group of brain diseases that lead, most often gradually, to the loss of mental functions and functional abilities (dementia). Over 70 different conditions can cause dementia. Victims suffer impairments of memory and other intellectual abilities that leave them confused, disoriented and incapable of communicating normally. They show personality changes, various emotional reactions to their illness, and behavioral symptoms, such as a tendency to wander. Over time they experience increasing difficulty in carrying out even simple activities of daily life, may lose bladder and bowel control, and ultimately become totally dependent on others to provide for their personal needs and safety. The peculiar tragedy of Alzheimer's disease and other related dementias (ADRD) is that they dissolve the mind and steal the humanity of the victim, leaving a body from which the person largely has been removed. Simultaneously, these disorders devastate the lives of spouses and other family members who must endure this deterioration of their loved ones, and the loss of the person and relationship that is implied, typically shouldering heavy burdens of care over a prolonged period of time.

The tragedy of Alzheimer's disease and related dementias is one of growing proportion, with potentially catastrophic public health consequences. The rapdily increasing prevalence of these disorders, projected to exceed 5 million Americans by the year 2040, coupled with their burgeoning costs to the Nation, have led to increased recognition of the need for both science policy and public policy to respond to what has been termed an epidemic of long-term, currently incurable illness.

This first report of the Advisory Panel on Alzheimer's Disease, consistent with the charge to the Panel, evaluates the state of the art and makes a series of recommendations regarding four mandated areas of concern, here grouped into three general categories: biomedical research; organization and delivery of services and financing of care; and research on services and their financing. The discussion and the recommendations underscore how science policy and public policy currently affect, and how policy improvements can benefit, those patients and families who together suffer the affliction of Alzheimer's disease.

The Panel has attempted to address the Nation's needs regarding Alzheimer's disease and related dementias in a manner that balances a consideration of the major budgetary problems facing the Federal government with an awareness of the serious long-range problems and costs that loom as consequences of these disorders. Among the competing priorities for national attention, Alzheimer's disease and related dementias and the associated burdens of care that they place on families and society at large have emerged as one of the most important problems. Certain costs, such as expenses for institutional care, can be estimated with fair precision and are clearly great burdens for society. Other costs remain uncertain, such as the long-term consequences for the Nation if other family members develop mental, emotional or medical illnesses or must quit or cut back on their jobs in the process of caring for a relative with dementing illness. Assuredly, however, if the Nation does not take steps to address this problem now, it will cost even more to come to terms with it later. Accordingly, the Panel has made selective recommendations for Federal action in critical areas where lack of action would represent an illusory or false economy and might ultimately result in worsening long-term costs for the Nation or in dire consequences for large numbers of American citizens.

BIOMEDICAL RESEARCH

Biomedical research offers the only hope for curing and for preventing Alzheimer's disease and related dementias. Rapid advances have been made in solving the mysteries of these disorders, and the biomedical research field is poised for significant breakthroughs, given adequate resources. Fortunately, the Nation has a cadre of well trained scientists who could potentially enter this field if research funding were more easily obtained. Equally fortunately, a wide array of competitive, high-quality biomedical grant applications are reviewed and found meritorious of support.

However, the Panel has found that the Federal research resources, representing over 90 percent of all ADRD research support, are insufficient to meet the field's capacity to conduct innovative and supportable investigator-initiated research. Today, there continues to be a significant discrepancy between the clear majority of peer-reviewed, investigator-initiated grant proposals that are deemed scientifically meritorious and worthy of funding and the minority that actually receive Federal support -- a gap which is increasing. Moreover, the research infrastructure remains very underdeveloped. Research institutions simply lack the bricks and mortar to house the research teams and the equipment and instrumentation that enable clinical researchers to study the living human brain, and basic researchers to analyze its biochemical and electrophysiological processes or to isolate critical genes.

To ameliorate the situation, the Panel recommends:

- an immediate increase in the Federal research budget for biomedical Alzheimer's research to a level of $300 million per year, with the goal of funding at least 50 percent of approved, investigator-initiated grants and supporting three new Alzheimer's Disease Research Centers, bringing the total to 15 centers.

- the allocation of $30 million of the $300 million per year for the anticipated 15 (currently 12) Alzheimer's Disease Research Centers (an average of $2 million per year per Center), predominantly to underwrite the costs of longitudinal and consortium-type multidisciplinary studies and clinical trials, tissue banks, patient registries, and training programs for future ADRD research scientists.

- utilization of established NIH construction authority to co-fund with selected research institutions the construction of at least 12 ADRD research facilities, with contiguous basic and clinical research space. To meet the critical facility shortage within fiscal constraints, the Panel suggests that construction authority could extend over three fiscal years, with the Federal share totalling $20-28 million per year.

SERVICES AND FINANCING OF CARE

What has been euphemistically called the current long-term care "system" is in fact a patchwork of inadequate and underfunded programs that are highly uneven regionally and spread across the physical care system, the social service system, and the mental health system, leaving many without access to services. Victims of ADRD are prototypical of the long-term care patient, representing one of the largest segments of the service-needy population. Today's programs offer insufficient coverage, fail to recognize the continuum of both patient/family needs and health/social services required as ADRD-induced disability inexorably increases, and pose many needless obstacles to care.

Public policy makers have begun to recognize the overarching need for a coherent long-term care policy. However, legislation to achieve this goal should be designed with care, recognizing the special nature of the ADRD patient while also remaining mindful that a "separate but equal" system of care would be inappropriate. The Panel, therefore, recommends and endorses the enactment of publicly-funded long-term care legislation as a major priority for the Congress.

In order to ensure access to care and services relevant to ADRD patients, a number of subsidiary recommendations are made, around issues of breadth of services, eligibility, and financing.

The Services

- Long-term care legislation must recognize the wide range of service needs of ADRD patients and their families, and assure that services and coverage are available across the full continuum of care -- from diagnosis through death. Mechanisms such as information and referral, education about the use of services, and counseling must be set in place to ensure that those in need of care are aware of program services and means of financing their expense.

- Commensurate emphasis should be placed on both community-based and institutional care. Each has its role and function in the care of the ADRD patient; neither alone represents an adequate long-term care program.

- Case management (some prefer other terms, such as care coordination, service management, or linkage) is essential in assuring that the ongoing social, support, medical and other care needs of ADRD patients and their families are met, and this function should be emphasized in the structure of the national long-term care program. However, the role of the family and individual ADRD sufferer must remain central in decision-making and control of service provision. Significant difficulties surround the idea proposed by some planners of including eligibility determination or other gatekeeping functions in case management. History has shown that when advocacy and cost-containment agendas collide, patients' needs for services and counseling may be inadequately addressed. Moreover, the function of establishing eligibility does not include the important element of monitoring care plans over time and reevaluating them as appropriate.

- Training must be an integral part of service delivery. Specialized training must be provided for professionals, paraprofessionals, and support staff responsible for the care of or working with ADRD patients and their informal caregivers. Strong consideration should be given to establishing special credentialling for professionals in the skills relevant to caring for ADRD patients.

Eligibility

- Eligibility for services should be based on impairments of function and dependencies rather than on diagnosis or on the age of the patient.

- Activities of daily living (ADL) scales alone do not provide sufficient criteria for determining long-term care service eligibility; use of such criteria poses a distinct problem for ADRD patients. While physically able to perform ADLs, many ADRD patients remain dependent on supervision and cueing (prompting by others) to ensure that such daily living activities are actually accomplished, and to ensure their safety and that of others around them. Eligibility criteria based on ADLs, therefore, must be supplemented with provisions that recognize the special dependencies created by patients with needs for cueing and supervision.

Financing

- A publicly funded long-term care program clearly must be mindful of cost-containment considerations, in light of the potential for being costly. At the same time, however, if well organized and effective, such a program could lead to greater efficiency in the delivery of services as well as producing overall savings by reducing indirect costs. Among potential cost-control mechanisms, the use of either income-related cost sharing or targeted benefits (in which the amount and scope of entitlement for services are determined by the level of disability) is preferable. Although capitation principles (according to which predetermined packages of services are provided for a fixed, "per person" payment, effectively capping spending at what is deemed an average cost) and means of screening and reviewing cases for eligibility are other mechanisms that may be considered, the program must also embody safeguards to assure equal access to services regardless of economic status, and to ensure that quality of care standards as well as cost-effectiveness goals are met. The Panel cautions that care should be taken to ensure that the poor are not penalized by cost-sharing plans and that targeted benefits should be established along a continuum of need rather than through a single eligibility threshold.

- A publicly funded long-term care program should have its base in a single payer. Pooling public funds from multiple sources or systems at the program level will strengthen the system's capacity to support individualized medical and social service plans across the continuum of care.

- Steps should be taken to address the present imbalance in funding programs for long-term care that favors disproportional use of institutional facilities because of inadequate support for home and community-based programs of care, and to encourage the States to expand and further develop their systems of home care. The Panel urges the Department of Health and Human Services to expand home and community-based Medicaid waivers for home care costs, and calls for the Congress to take supplemental action to further this objective.

RESEARCH ON SERVICES AND THEIR FINANCING

Research to find more effective and efficient means of service delivery deserves a higher priority than it has received. As recently as 1986, federal spending on health services research related to dementia totaled less than $2 million -- but a small fraction of 1 percent of the Federal payments for long-term care for those with dementia. Despite passage of the Alzheimer's Disease and Related Dementias Services Research Act of 1986 (Title IX of Public Law 99-660), only $2 million of the $16 million authorized therein for ADRD services research for FY88 and FY89 has actually been appropriated under this legislation. Additionally, one major Alzheimer's service demonstration effort has recently been undertaken by the Health Care Financing Administration with $2 million appropriated for a research component, which can be viewed as activity in the spirit of P.L. 99-660 though not formally supported under its provisions. The above efforts notwithstanding, and although somewhat larger amounts of funding have been appropriated for demonstrations and studies that address long-term care broadly (to be distinguished from services research related to dementia specifically), such as under the Medicare Catastrophic Coverage Act of 1988, there remains an overall lack of attention to numerous issues that beg to be addressed regarding appropriate services for ADRD patients and their families.

Most prior research efforts have dealt with long-term care generally, rather than with ADRD problems specifically, and the lion's share of the funding has been appropriated for mounting demonstrations (setting up model services) rather than for conducting evaluation research on the services. In particular, with a focus on describing costs and utilization patterns, most prior demonstration efforts have lacked research and evaluation designs adequate for determining such issues as the optimal design of services and the clinical efficacy of existing services. This shortcoming leads to dually unfortunate consequences: on the one hand, such demonstrations provide insufficient information to evaluate the best way to set up a service program, and on the other, they fail to indicate whether those programs that have been established are accomplishing what they should be doing -- and therefore whether they should be continued or should be phased out or terminated.

In anticipation of the magnitude of the programs that will be required to meet future demands for ADRD services, these research questions must be addressed on multiple fronts. It is necessary not only to understand more clearly the incentives, disincentives and likely costs for utilizing services and for entering the long-term care system, but also to ensure that programs, once designed, are meeting the needs of the ADRD patient and the expectations of the family and community.

Accordingly, the Panel recommends that:

o annual funding for research and evaluation on ADRD services and their financing should be increased over current levels by at least $25 million immediately, and incremented by $50 million within three-to-five years. Though a substantial increase over the current, minimal funding for services research, this amount pales in comparison with the $8 - 10 billion now spent by Federal and

State governments for direct care of ADRD victims, and with the $30 - 40 billion spent by all payers for these direct costs. These funds should be earmarked for the conduct of research and evaluation focusing on how to design, deliver and finance optimal programs of clinical care and family services for ADRD victims, and for strengthening the infrastructure for ADRD health services research. The administration of these funds should be coordinated among the member agencies of the DHHS Council on Alzheimer's Disease, building upon Part E, Sections 941-949, of Title IX of P.L. 99-660 (the "Alzheimer's Disease and Related Dementias Services Research Act of 1986"), for which funds were authorized but largely have not been appropriated.

o as part of the above increase, up to 10 ADRD health services research centers should be established according to a similar phase-in, with a minimum budget of $1 million each. These centers should have appropriate linkages with existing centers that are focused on basic and clinical biomedical ADRD research, and should be coordinated and administered through the agencies of the Council on Alzheimer's Disease, as suggested above. Such centers should focus on design and evaluation of service programs, identification of means of modifying and adpating appropriate existing services to meet the special needs of ADRD patients, testing of components of the service delivery system, identification of services that effectively meet the needs of ADRD patients and their families and those that do not, and policy analysis and synthesis of national data.

INTRODUCTION

The dementing disorders, a group of brain diseases that lead to the loss of mental functions, including memory and other intellectual and functional abilities, today affect at least 3 - 4 million Americans (Cross & Gurland, 1986).[1] Over 70 different conditions can cause dementia (Blass, 1982; Katzman, 1986). The prevalence may more than triple within fifty years (Office of Technology Assessment [OTA], U. S. Congress, 1987, p. 16). The most prevalent of those dementing disorders, Alzheimer's disease (AD), is estimated to account for from 2.5 million to well over 3 million cases (Evans et al., in press). Dementia of the Alzheimer's type cannot now be prevented; its course cannot be slowed or reversed, though in many cases the severity of its impact on the individual or family may be reduced through early detection and appropriate treatment of associated problems.

ADRD victims suffer progressively increasing impairments of memory and other intellectual abilities. Although the problems may initially be manifested in such ways as forgetfulness, poor judgment, or difficulty making calculations and handling money, the cognitive losses ultimately leave the person confused, disoriented and incapable of communicating normally.

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[1] The number of persons showing dementia is difficult to determine precisely, and is generally estimated by applying percentages found in studies of particular communities to general U. S. Census figures for the aged, with statistical correction for factors known to differ between the sample and general population norms. Various studies of the prevalence of dementia have yielded substantially different percentages, presumably due principally to use of differing criteria and methodologies but perhaps also due to true variations in rates by region. The research literature in general has indicated that from 4 - 7 percent of the population over age 65 shows severe dementia, that a similar or larger proportion shows milder degrees of dementia, and that these rates rise steeply with increasing age. Cross and Gurland (1986) summarized these findings as indicating severe dementia in 1 percent of the population aged 65-74, in 7 percent of those 75-84, and 25 percent of those 85 or older. These figures suggest that at present 1.5 to 2 million Americans show severe dementia (Office of Technology Assessment, 1987). However, estimates restricted to severe dementia tend to underestimate the true prevalence of disease in the general population, where milder and emerging cases are common. Recent epidemiological studies, employing rigorous methods of identifying cases and including those with mild degrees of mental impairment, have suggested that over 11 percent of the elderly population may suffer from underlying Alzheimer's disease (Evans et al., in press; Pfeffer, Afifi & Chance, 1987). The cumulative proportion of the population who will suffer from dementia at some point in their lives is also much higher than these percentages reflecting those affected at a single point in time.

Affected individuals undergo personality changes that may range from apathy and social withdrawal to quarrelsomeness and agitation, and frequently display various emotional reactions to their illness, such as anxiety, depression, or suspiciousness. Other symptoms such as disturbed sleep, hallucinations, delusional ideas, or a tendency to wander aimlessly, are also common. Over time, these individuals lose the ability to carry out their customary everyday activities and to look out for their own well-being. Eventually, they may lose control of elementary physical functions, such as bladder and bowel control, and become totally dependent on others to provide for their personal needs and safety.

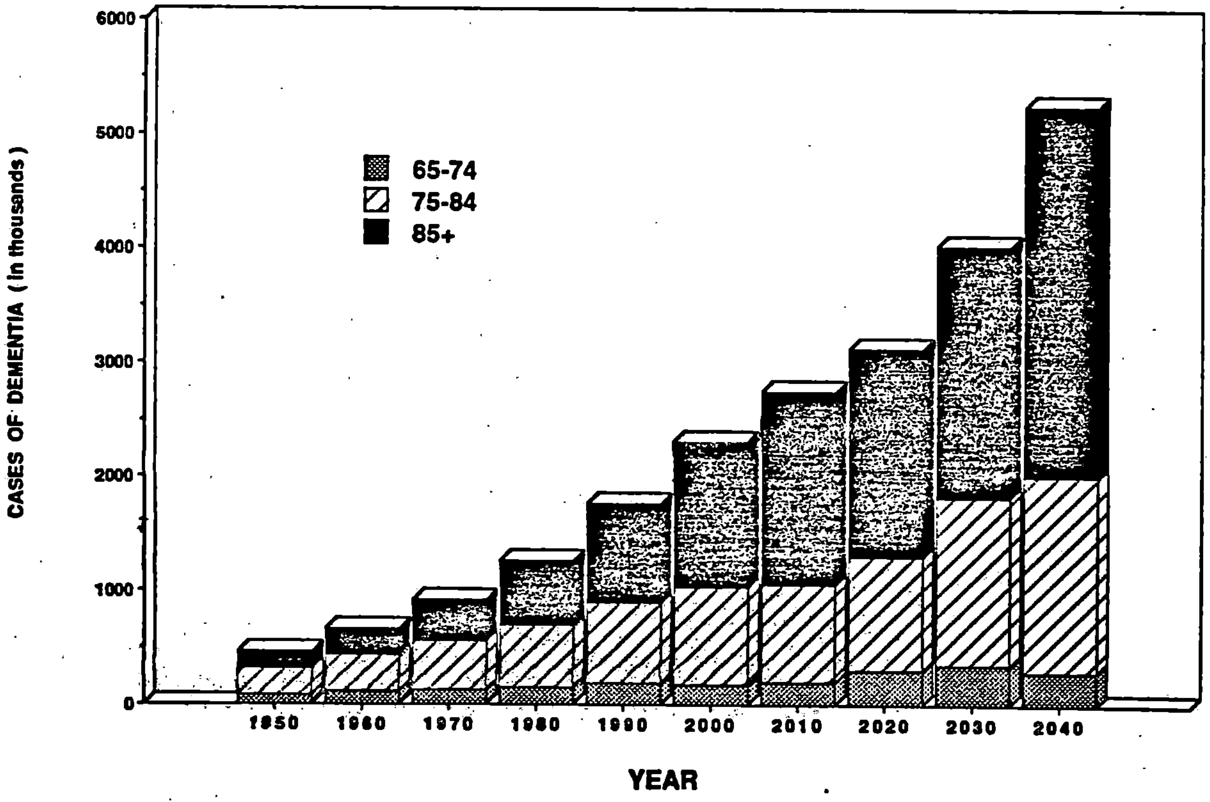
The peculiar tragedy of Alzheimer's disease and other related dementias is that, over their course of as long as 20 years and averaging 8 - 10 years, they dissolve the mind and steal the humanity of the victim, leaving a body from which the person largely has been removed. Alzheimer's disease and related dementias inflict suffering not only on the patient who develops the disorder, but also on the family. Victims face the horror that their "self" is disintegrating. Caregivers face the agony of seeing their loved ones' minds and personalities disappear from bodies that frequently may remain otherwise healthy, and shoulder heavy physical and social burdens for their loved ones' care, typically over prolonged periods of incapacitation (Barclay, Zemcov, Blass, & *Sansone*, 1985).

The human costs of Alzheimer's disease cannot be overstated. The effects on the afflicted families are personally and financially devastating. Studies have shown that caring for a demented relative is among the most difficult forms of family responsibility, producing severe strain and potentially destructive effects on families that undertake caregiving (E. Brody, 1989; Morris, Morris & Britton, 1988; OTA, 1987, chpt. 4; Rabins, Mace & Lucas, 1982). As the Office of Technology Assessment (1987, p. 21) reports, a 1983 study estimated that if family care of demented relatives were to be replaced by hired caregivers, the cost nationally would be $26.7 billion.

Only in the past decade have the personal and societal ravages of dementia in general, and AD in particular, become a subject of public policy debate. Much of the concern has arisen with the recognition of the magnitude of what has been described as an advancing epidemic or deluge of ADRD. While AD is not an inevitable consequence of aging, since its prevalence increases sharply after age 65 (OTA, 1987, p. 16; U. S. Department of Health and Human Services, 1984), the number of victims will grow rapidly as our Nation as a whole ages. Ironically, our scientifically based capacity to prolong the life span has increased dramatically the projected prevalence of Alzheimer's disease and related dementias (Figure 1). [2]

FIGURE 1

ESTIMATED NUMBERS OF CASES OF SEVERE DEMENTIA BY AGE IN THE U. S. POPULATION, 1950 - 2040



Sources: Cross & Gurland, 1986; Office of Technology Assessment, 1987

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[2] The prevalence projections shown in Figure 1 are for severe dementia and utilize middle-range U. S. Bureau of the Census estimates for future population growth.

The effects of Alzheimer's disease and other dementias are felt within the larger health care and social service delivery systems, and in the human services and economic components of our Nation at large. The needs of the ADRD patient place a burden on the already fragmented social support networks at the local level; they threaten to overwhelm the disjointed collection of public and private mechanisms that attempt to provide and pay for health care delivery to the elderly and chronically disabled.

Though the true economic costs of these disorders are difficult to gauge precisely and estimates vary considerably, depending in part on the factors taken into account as indirect costs, such as the health costs and lost productivity incurred by family caregivers, these costs are indisputably great. As pointed out by the Office of Technology Assessment (1987, p. 17), a 1983 National Institute on Aging study estimated total direct costs to the Nation for caring for those with dementia to be over $38 billion per year (Huang, Hu & Cartwright, 1986), and a subsequent study put the figure for 1985 between $24 and $48 billion (Battelle Memorial Institute, 1984). The most recently available study indicated that senile dementia cost the American economy nearly $88 billion in 1985, predominantly in indirect costs (Huang, Cartwright & Hu, 1988). The costs can be expected to escalate dramatically over the next 50 years as health care costs in general rise, as longevity continues to increase, and as the societal prevalence of dementia triples.

The challenge to those in public policy positions is to reduce the personal and economic cost of Alzheimer's disease and other dementing disorders, to establish a series of mechanisms that meet both the long-term goal of diminishing the threat of ADRD and the shorter-term goals of reducing unnecessary suffering both of those afflicted with ADRD and of those who care for them. While the most desirable answer lies in finding a cure, or even better, a way to prevent the tragedy of dementia, this goal may well still be distant. Much can be done today to reduce unnecessary suffering by providing better ways to care for patients, to ease the burdens of their family caregivers, and to pay for needed care. Research should proceed aggressively, but must proceed in parallel with efforts to improve services to those now suffering from these disorders.

This report, the first of an ongoing series of reports by the Advisory Panel on Alzheimer's Disease, focuses on the long-term promise of biomedical research and the urgent current need for a coordinated continuum of services for the victims of these dementias (including health services and financing research to evaluate the efficacy of those services and the utility of various financing options), and proposes a number of recommendations for administrative and legislative action. Future reports will examine such areas as personnel and training needs, and legal issues.

BIOMEDICAL RESEARCH ADVANCES AND NEEDS

While Alzheimer's disease and other dementing disorders cannot now be prevented, reversed, or slowed, today's biomedical research into the cause or causes of the disorders and into their course may dramatically alter this situation. The state of the science is healthy; the state of its infrastructure and economic support is not. This section of the report details the progress in biomedical research and the prospects for future discovery, identifies problems, and recommends mechanisms through which the problems impeding the future of scientific inquiry into Alzheimer's and related dementias may be resolved.

Federal funding accounts for over 90 percent of the funds available for research on Alzheimer's disease and related dementias (OTA, 1987, p. 47). During the past decade, Federal support for biomedical research on Alzheimer's disease and related dementias has grown impressively from $5.1 million in fiscal year 1978 (OTA, 1987, p. 47), to an estimated $123.4 million in fiscal year 1989.[3] Yet, notwithstanding the growing public and public policy concern surrounding ADRD, this increased level of funding achieved over the decade actually represents less than one-half of 1 percent of the cost of care for the victims of these disorders, as estimated by the various studies cited above. There continues to be a significant and growing gap between the clear majority of peer-reviewed, investigator-initiated grant proposals that are deemed scientifically meritorious and worthy of funding and the minority that actually receive Federal support (Division of Research Grants, 1987). If policy makers are to approach the biomedical research

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[3] Data compiled from the various relevant budget offices within the U. S. Department of Health and Human Services.

needs of Alzheimer's disease and related dementias with as much dedication and concern as they showed in approaching cancer in the last decade, and AIDS in this, both of which areas receive Federal funds in excess of $1 billion annually (U. S. Department of Health and Human Services, 1989), greater Federal resources must be made available for the conduct of biomedical investigation into these disorders.

THE PRODUCTS OF BIOMEDICAL RESEARCH

Two decades ago, only a handful of dedicated researchers were working in the area. Alzheimer's research was neither tied to well established hypotheses nor highly fundable. This now has changed. Alzheimer's research has entered an era in which researchers with high-quality grant proposals are plentiful and the promise of their research nearly palpable. In the past five years, since the inception of the Federally mandated Alzheimer's Disease Research Centers, the number of scientists engaged in Alzheimer's research has increased significantly. Furthermore, there is a sizeable cadre of other well trained, innovative scientists who could potentially enter this field if resources were sufficient and research funding more easily obtained.[4]

Notable advances have been made in research during the past decade, in both basic scientific studies investigating the changes in the brain affected by AD and in clinical investigations of patients with the disorder. Moreover, many investigators now sense that a true understanding of the events underlying Alzheimer's disease may be uncovered in the near future. Such discoveries hold the promise of more effective treatments -- perhaps of a cure

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[4] Despite an admirable approval rate for high-quality grant applications in the area of Alzheimer's disease, the actual likelihood of Federal funding remains low, particularly for the new but promising young investigator. A number of studies investigating incentives and disincentives to research careers have found that the instability or uncertainty of the funding stream has a chilling effect on the establishment of new young researchers in both the biomedical and behavioral fields of investigation (Pincus, Shore & Sirovatka, 1986; Seggel, 1985). As noted by the Institute of Medicine (1985), the Association of American Medical Colleges (1981), and elsewhere in the scientific community, the biomedical research community is not now able to replace its retiring members, and cannot afford growing disaffection on the part of those in the next generation of research.

-- and the potential of preventive interventions which would preclude the clinical manifestation of Alzheimer's disease altogether.

Basic Research

At the level of the basic science of Alzheimer's disease, three major issues are preeminent: identifying the underlying cause or causes (etiology) of the condition; elucidating the sequence of changes that occur in the brain (pathophysiology) of the Alzheimer's patient; and developing a diagnostic screen for AD that can identify the presence of the disorder prior to the appearance of clinical signs or at least very early in the disease process. Thus, investigators have studied a variety of stages in the process by which Alzheimer's disease develops, ranging from a search for the point of cause (such as a molecular genetic defect) to identification of the presumed sequence (or "cascade") of events that lead to the visible and quantifiable brain and behavioral changes associated with Alzheimer's disease, such as impairment of neural function, nerve cell loss, and clinical manifestations of the disease.

Important advances have been made since the mid-1970s in the wake of increased capacity in the fields of molecular genetics, molecular biochemistry, and brain imaging. In recent years, researchers have identified an area on chromosome 21 that may hold a gene associated with Alzheimer's disease in a proportion of patients for whom the disease occurs at a relatively early age and appears to have a familial, or hereditary, component (St. George-Hyslop et al., 1987). Although this genetic locus does not appear to characterize patients who develop AD at later ages (Pericak-Vance et al., 1988; Schellenberg et al., 1988), further studies already underway to clarify the preliminary findings have great potential to identify this gene more precisely and may unlock major information about the causation and pathophysiology of this disorder. [5]

Population genetic studies, too, have provided considerable evidence that a hereditary or familial factor is prominent in many cases of AD. Although not all forms of the disease have been linked to chromosome 21, studies of patients who have been diagnosed simply on the basis of established clinical criteria for AD (McKhann et al., 1984) have shown that the cumulative incidence of progressive dementing disorder in first degree relatives by age 87 approaches 50 percent (Breitner, Silverman, Mohs & Davis, 1988; Huff, Auerback, Chakravarti & Boller, 1988; Martin, Gerteis & Gabrielli, 1988; Mohs, Silverman, Breitner & Davis, 1987). Thus, although some observers believe that genetics play a minimal role in AD, many others think that when families are studied carefully there tends to be a considerable proportion of familial cases. Studies showing variability in the occurrence of AD in identical twins, however, indicate that environmental as well as genetic factors must contribute to the development of the clinical disorder. Resolution of these issues will come only from genetic linkage studies.

Researchers have found that Alzheimer's disease is characterized by the involvement of a number of chemically specific neural systems (networks of nerve cells in the brain), each of which produces unique chemicals used by one nerve cell to signal another nerve cell, so-called neurotransmitters. It has become apparent that particular nerve cells in particular parts of the brain are selectively vulnerable in AD. The greatest neurochemical loss in the brain of the Alzheimer's sufferer is that of substances which serve as markers of the cholinergic system, the neural system that produces acetylcholine, a neurotransmitter known to be involved in the brain's capacity to learn and

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[5] The precise gene for the familial type of AD has not been located. The reported research has dealt with the location of a "marker," or different gene that is frequently found in combination with AD of the familial type. If the findings prove replicable, with that knowledge, coupled with a marker on the same chromosome that flanks the gene of interest on its opposite side, scientists can greatly narrow the search for the AD gene. Once the gene is isolated, its constituent amino acids and proteins can be analyzed against a normal segment of chromosome 21 and the basic defect or defects can possibly be identified.

remember (Drachman & Leavitt, 1974).

Researchers, too, have unmasked the structure of amyloid, the abnormal fibrous protein that accumulates in the neuritic plaques that are characteristic of Alzheimer's disease. The plaques themselves are clusters of degenerating nerve cell endings, combined with the amyloid protein. The number of neuritic plaques is closely related to the clinical manifestation of the disorder, that is, the larger the number of plaques, the greater the disturbance in intellectual function and memory. Amyloid has been found to be a breakdown product of a larger parent protein that is present in normal nerve cells. Scientists are now investigating both the function of this precursor protein and the precise mechanism that causes breakdown into the abnormal amyloid fragment in Alzheimer's disease. Adding to the scientific interest in this normal precursor protein has been the finding that the gene for it, though distinctly separate from the gene for familial Alzheimer's disease, is also located on chromosome 21. Recent findings suggest that the amyloid may normally function as part of a process whereby the nervous system attempts to defend against and compensate for nerve cell degeneration, but in Alzheimer's disease may be deposited in plaques in an inactive form as a result of abnormalities that develop in its processing (Whitson, Selkoe & Cotman, 1989).

An excess of the *normal excitatory* transmitters has been found to be capable of damaging or destroying brain cells -- neurons -- and may be related to Alzheimer's disease. Such excitotoxins include glutamate and aspartate, both amino acids that act as excitatory transmitters. Further, nerve growth factors have been found to be potentially important in Alzheimer's disease due to their normal action in preserving or restoring neuron integrity, and treatment with nerve growth factors may prove effective in at least some Alzheimer's patients.

Research utilizing a new type of instrumentation, positron emission tomography, has enabled researchers to begin to map the metabolic function of the brain during cognitive processes. While the technique is still relatively new and resolution and sensitivity of the instrument is not yet at an ideal level, nevertheless, interesting findings have already been made with the discovery of a metabolic change in both the left and right parietal lobes in the early stages of the AD process. A second new form of instrumentation, magnetic resonance spectroscopy, is also being developed that may complement the findings through positron emission tomography. Preliminary study of yet another type of brain imaging technique, called SPECT (single photon emission computerized tomography), suggests that it, too, will have value in enhancing precision in the diagnosis of AD.

Clinical Research

In the clinical area, the development of specific diagnostic criteria (McKhann et al., 1984; U. S. Department of Health and Human Services, 1987) in the absence of a specific biological marker for AD has brought accuracy to nearly 85 or 90 percent in diagnosing the typical case (Katzman, Lasker & Bernstein, 1986). However, the search continues for a specific diagnostic test, both because multiple disorders that are difficult to tease apart without sophisticated screening mechanisms are frequently present in the elderly, and because currently detection occurs only after clinical symptoms are in evidence. A sensitive and specific diagnostic marker that enables diagnoses to be made before symptoms arise would assist in basic and epidemiological research efforts, would improve the accuracy of clinical drug trials, and would assist the clinician.

Because the observable pathological changes caused by AD occur in the brain of the patient, much of the clinical research progress in understanding Alzheimer's disease has resulted from studies of brains obtained at autopsy. Adequate amounts of brain tissue from autopsies of Alzheimer's patients are now available through the combined efforts of the Alzheimer's Disease and Related Disorders Association and of the Federally funded Alzheimer's Disease Research Centers. The great need in this regard is for autopsy material from control subjects whose mental status has been characterized during life. One source is that of spouses or families of Alzheimer's victims; another source may be from hospices. An educational campaign regarding ADRD autopsies needs to be carried out by the involved government agencies and voluntary health organizations. This is an area in which the Alzheimer's Disease Research Centers can make a valuable contribution.

Research is leading to exciting new treatments that will affect the disease process itself. Up to now, treatment of Alzheimer's disease largely has been limited to treatment of its symptoms, particularly those in the area of behavioral abnormalities. One of the most robust findings in AD research that has led to extensive clinical trials has been the discovery that in Alzheimer's disease, there is a decline in the production of an enzyme (choline acetyltransferase) critical in synthesizing acetylcholine, a chemical compound involved in the transmission of nerve impulses. Several large-scale clinical trials of pharmacologic interventions, among them the ongoing multicenter trial of tetrahydroaminoacridine (THA), an acetylcholine-enhancing drug, are now underway to determine whether these drugs have beneficial effects clinically (Dysken, 1987; Hollander, Mohs & Davis, 1986). If so, the progress of a number of the specific functional deficits of AD may be halted, if not actually reversed. Additional trials of innovative drugs (such as nerve growth factor) are underway or planned. These trials often involve collaboration between the private and public sectors. For instance, pharmaceutical corporations help support rigorous trials of their new medications undertaken by Federally established and supported Alzheimer's Disease Research Centers and by other centers of excellence that have been developed, in part, through the use of Federal research grant funds.

Although the most definitively established pathological changes in Alzheimer's disease have been observed within the brain, several lines of research, including recent attempts to identify a diagnostic blood or skin test for AD, have indicated metabolic changes in other body tissues, which can also provide clues to the pathophysiology of the disorder (Blass & Zemcov, 1984). Findings in this area may lead to interventions to correct the metabolic abnormalities and, potentially, to halt the progress of or even prevent the disease.

Epidemiological research, research that compares characteristics of diseased and non-diseased persons and their environments, and cross-cultural studies have led to major breakthroughs in the understanding, treatment, and prevention of both infectious diseases and chronic diseases. There is every reason to anticipate that epidemiologic and cross-cultural research into AD and related dementias will suggest similarly important interventions. Such research offers the promise of preventing, or at least decreasing, the risk of ADRD and its burdens on society. If successful, such research would pay for itself in reduced care costs.

However, epidemiologic research on AD has been hampered by a number of factors: the absence of a specific diagnostic screen for the disorder, leading to uncertainties of diagnosis; the inability to evaluate past exposures to variables thought to be possible causes or risk factors for the disease; and, perhaps most important, the large commitment of time and resources necessary to undertake such longitudinal research in the first place. Ideally, such research should be undertaken in a multidisciplinary setting in which epidemiologists, clinical scientists, and basic scientists can work together on patient-related research. Correlation of risk factor data, clinical characteristics, and findings in the basic sciences may allow identification of subtypes of AD and delineation of risk factors that could suggest interventive strategies.

INFRASTRUCTURE: HOUSING THE RESEARCH ENTERPRISE

An unfortunate corollary of research advances in Alzheimer's disease and related dementias and the otherwise favorable growth in numbers of skilled researchers is that investigators are overcrowding existing laboratory space. In many institutions, there simply are no laboratory facilities and no equipment for new scientists who are interested in entering this area. Thus, the acute need for more laboratory space may become a critical rate-limiting factor in the ultimate development of the entire ADRD research field.

Yet, high-quality, multidisciplinary investigation cannot occur in antiquated facilities that meet neither the clinical bed needs for investigation nor the space requirements for basic research. Recent basic science discoveries in the area of AD have opened entirely new areas of investigation, areas which, five years ago, were not an integral part of the AD research laboratory and which, today, cannot be housed in existing research facilities. For example, five years ago, molecular geneticists and protein chemists were rarely found in AD research laboratories. Now, they are essential to the very fabric of AD research. Moreover, the laboratories required are often large and complex, requiring not only space, but sophisticated equipment and instrumentation previously not part of AD research.

FUTURE DIRECTIONS IN RESEARCH

As discussed above, research on Alzheimer's disease and related dementias is progressing at a rapid and accelerating pace. The basic and clinical research areas described above are now ripe for further rapid advances that predictably will have direct application for the care of ADRD victims.

It can be anticipated that future studies will continue to unravel the etiology, pathophysiology and molecular genetics of AD and related dementias. The gene (or genes) for familial AD will be identified and the constituent elements decoded. Clinical approaches to research will investigate further the delineation of an early, precise, diagnostic screen for AD, the application of certain pharmacologic agents in the treatment of those now suffering the disease, and the investigation of the effect of AD on the human brain through the use of autopsy tissue maintained in tissue banks. Additionally, interventions with potentially preventive or restorative effects will be explored, including studies of the possible benefits of treatment with nerve growth factor and of programs for eliminating or counteracting environmental causes of Alzheimer's disease.

This work will take place in individual large and small laboratories within academe and the public and private sectors. Increasingly, if resources permit, the search for the cause and optimum care of Alzheimer's disease should also take place in research centers that have the capacity to house tissue banks, units with beds for clinical research subjects, and large, multidisciplinary teams of basic and applied researchers capable of undertaking extensive therapeutic trials on large-scale samples of patients. Ideally, clinical scientists, epidemiologists and health services researchers should be accomodated alongside basic scientists in these facilities so as to promote collaboration.

It is also important that steps be taken to continue to enlarge the pool of new investigators trained in state-of-the-art molecular biology, quantitative pathology, and clinical investigative techniques, through appropriate training grants.

RECOMMENDATIONS

In order to accomplish these goals in biomedical research, sufficient resources must be made available to support both the conduct of research and the infrastructure -- facilities, equipment, and personnel -- necessary to make that research happen. While Federal recognition of the importance of Alzheimer's disease research has led to an increase in Federal support over the past decade, current levels of research funding still do not permit an adequate proportion of peer-reviewed and approved research applications to receive funding, and these not always at the level requested. This situation not only frustrates ongoing research activities but also restricts the access of new young investigators to the field.

An increase in Federal support for Alzheimer's research that would permit funding of at least half of the scientifically meritorious grant applications would be utilized both immediately and effectively. The Panel's best estimates are that the Federal research budget for biomedical ADRD research should now be increased to at least $300 million per year, so as to allow funding of a large number of approved, high-quality grants already in-house. The bulk of this budget should be targeted toward investigator-initiated research and program grants, with the goal of funding at least 50 percent of approved grant applications.

Other portions of the increase should be used to support 3 new Alzheimer's Disease Research Centers, and to provide more adequate funding for the 12 extant Alzheimer's Disease Research Centers, which have suffered from chronic underfunding since inception. The Alzheimer's Disease Research Centers program can benefit from an infusion of additional funds to an overall level of $30 million per year (averaging $2 million per Center), primarily to underwrite the costs of the large-scale, multidisciplinary studies for which these Centers are ideally suited, a sum included in this overall research request. Also included in the figure of $300 million are dollars intended to increase the number of research facilities, technically sophisticated and widely accessible tissue banks for basic research and registries for clinical and epidemiological research, large-scale, multi-site clinical trials, and research training programs for the basic and clinical ADRD investigators of the future.

To ensure that sufficient infrastructure capacity exists to house the ADRD research enterprise, the established precedents for National Institutes of Health (NIH) construction matching funds should be applied to ADRD research and administered through the National Institute on Aging. Facilities should be constructed to house clinical and basic research capacities in contiguous space. Approximately 30,000 square feet at at least twelve major Alzheimer's disease research sites is required to accommodate current efforts and future needs. Such funding should be consistent with established NIH construction authority for ADRD research centers.

It is estimated that, as a function of geographic location, the cost of construction will vary between $10 - 14 million for a 30,000 square foot facility. In some instances, costs can be held to $9 million by renovating or restructuring existing space to meet facility requirements. Assuming equal participation by the institution and the National Institutes of Health, each site will require from $5 - 7 million in matching funds from the National Institutes of Health. Construction at 12 sites, therefore, would cost from $60 - 84 million. This expense could be divided over three years, requiring an appropriation of $20 - 28 million in each of those years for the Federal share.

SERVICES AND FINANCING OF CARE

Despite the growing recognition by public policy makers that, for many Americans, chronic illness represents the single personally and economically most catastrophic health event in their lives, what can only euphemistically be called the current long-term care "system" remains a patchwork of partial relief efforts spread across the physical or medical care system, the social service system, and the mental health system (OTA, 1987, chpt. 6). As a result, many are left without access to services, among them the ADRD patient, for whom the capacity to negotiate the maze of programs and benefits may be severely compromised as a result of the disorder itself. As noted by the Office of Technology Assessment (1987),

> The need for a [coordinated] service delivery system arises in part from the fragmentation of long-term care services at the community level and the complexity of Federal, state, and local programs that provide and fund such services. The three systems that provide services for persons with dementia -- the medical or physical care system, the aging services system, and the mental health system -- are generally disconnected. Gaps and overlapping services within each and between systems are common, and providers in one system are often unaware of services in the other two. (p. 232)

Victims of Alzheimer's disease and related dementias are prototypical of the long-term care patient, representing one of the largest segments of the service-needy population. For the victims of ADRD and their families, current government and private programs offer inadequate coverage. In some cases, ADRD patients are excluded from both Federal and State programs, either inadvertently, as in the case of regulations that determine eligibility based on physical capacity for activities of daily living (discussed under "Eligibility" below), or deliberately, as in the case of the Medicare system. Victims of

ADRD and their families receive little reimbursement from Medicare beyond modest diagnostic and acute care coverage, and no coverage for custodial or long-term nursing home care. Existing programs maintain differing eligibility requirements, service delivery points, and limitations on care, making it almost impossible to gain access to needed services without active assistance. Moreover, Federal-State programs such as Medicaid and Social Services Block Grant funds are subject to disparate interpretation at the Federal and State levels (OTA, 1987, p. 228). Many Americans, suddenly confronted with a long-term care situation when a family member is diagnosed with Alzheimer's disease, are ignorant of the services available to them and are unable to gain access to them. We need to find better, more humane, and affordable ways to meet the health and human services challenges exemplified by the long-term care needs of ADRD patients and their families.

Legislation now before the U.S. Congress seeks to improve both services and coverage for long-term care for all in need of such care. Many of the proposals call for a test of eligibility for services based on a specified or unspecified level of ability to perform activities of daily living. Most of these bills note the special status of the ADRD victim, and several recognize the unique issues of cognitive impairment and aberrant behavior characteristic of ADRD patients. Some of the bills emphasize particular forms of delivering long-term care; others favor a continuum of services.

Which approach, then, best meets the needs of both the ADRD victim and others in need of long-term care? Our knowledge of the epidemiology and natural history (clinical course) of ADRD offers certain clues for developing optimal intervention and service delivery strategies. Particular attention must be given, for example, to the needs of the oldest old. Not only does the prevalence of dementia increase dramatically with age but so, too, does the severity of the resultant disability (Doty, Liu & Wiener, 1985; Macken, 1986). Because surviving to later stages of these progressive disorders implies increased age, and because dementia developing later in life will more often be overlaid on already existing physical disease and other aging-related causes of disability, the greatest needs for assistance are likely to exist in the oldest segment of the population.

At the same time, however, the long-term care system must be designed with sensitivity to the highly individual manner in which Alzheimer's disease and related disorders affect their victims, and must address their special care needs. Its structure must accommodate those with intact family units as well as those without family, those with special cultural differences, those with greater and lesser degrees of disability. It needs to reflect a multiplicity of entry points for care along the continuum of care needs that begin with diagnosis and end at death, including needs for home and institutional care, intermittent support and intensive supervision. It must function in close coordination with the acute care medical system and must close the gaps now present in the patchwork of existing service programs.

PRINCIPLES: THE CONTINUUM OF CARE

ADRD victims and their families need assistance at several levels. They need the opportunity to receive a clear diagnosis and explanation of the problem, and assistance in assessing the changing care needs they will have as the disease progresses and the care demands on the family increase (Larson, Lo & Williams, 1986; Larson, Reifler, Sumi, Canfield & Chinn, 1985; Ware & Carper, 1982; Zarit & Zarit, 1982). Regulations and policies regarding care coverage should encourage the flexibility and creativity necessary at the early stages of disorder to enable families and ADRD patients to sort through care options and to establish the optimal package of services for the individual patient. At this point, families should have available to them instructional material that reflects the range of issues that should be considered. Accountability should be maintained at the level of the quality of care achieved rather than by rigid rules of orthodoxy.

Care begins in the home and in the community and can be sustained there with varying degrees of help for varying lengths of time. Indeed, existing studies have found that families and patients have a preference for home care (George, 1984; Louis Harris and Associates, 1988; OTA, 1987, chpt. 4), and that other factors being equal, ADRD patients generally do best in familiar environments. Because Federal financing mechanisms currently create an overwhelming bias toward use of institutional care, due to lack of coverage for home care (S. Brody, 1979; Cohen, Liu & Holahan, 1986; National Association of State Units on Aging, 1988), major efforts to support in-home care are needed.

However, efforts are also needed to prevent undue burdens on families of ADRD patients which can result from inappropriate efforts to maintain patients at home when institutional care is indicated. It is misleading to view institutional care as competitive with, or as a failure of, community care. As the Office of Technology Assessment (1987) has noted, despite families' preference for home care,

> the OTA survey of family caregivers found that 80 percent agree that 'a patient with a severe [advanced] case of Alzheimer's disease should be living in a nursing home.'...Thus, institutional care is seen as unavoidable for many individuals in late stages of dementing illnesses. (p. 210)

The challenge is in determining when home care becomes inappropriate and institutional care becomes the option of choice or necessity. Both forms of care are essential and mutually supportive components of long-term care; neither can substitute for the other; both can be improved substantially. Much needs to be done to make home care more possible and to make institutional care more humane. The importance of pursuing both these avenues is highlighted by the fact that, at present, a significant proportion, if not a majority, of residents in long-term care facilities are affected by Alzheimer's disease or related dementias. Several State task forces on AD have documented that approximately 40 to 70 percent of nursing home residents are afflicted by dementia, primarily of Alzheimer's type (Jazwiecki, 1988, p. 297).

At each step along the continuum of care, the role of the family (for those ADRD patients with families) must be recognized as focal. Families are involved in the assessment process leading to a diagnosis of ADRD. They are essential components of any community-based care system and, equally, they continue to play an important role in the care of the institutionalized patient. At the same time, family members of ADRD patients typically display many symptoms of stress, which also must be recognized as a concern within the overall continuum of care.

SERVICES AND SERVICE DELIVERY

The Role of the Family

Families today provide more care and more demanding care to a greater number of older people over longer periods of time than ever before (E. Brody, 1985). Dementia is unquestionably a family affair. Care of the demented patient is perhaps the most difficult form of family help, produces the most caregiver strain, interferes most with caregivers' employment, and has the most negative effects on family lifestyle and relationships (E. Brody, 1989; George & Gwyther, 1986; Poulshock & Deimling, 1984). The pressure on family caregivers will be exacerbated further as a product of several converging trends:

- Increased longevity. There are an ever increasing number of older persons, especially the "old-old" who require care, and whose children may themselves be senior citizens or even die prior to the parent. Moreover, the continuing decline in the birth rate further reduces the ratio between potential caregivers and those needing care. It is already the case that many family members must take care of multiple disabled elders, either simultaneously or sequentially over extended periods of their lives in what have been called "caregiving careers" (E. Brody, 1985).

- Geographic dispersion of family. The increased mobility of our society diminishes access to family care.
- Need to work. In addition to the increasing prevalence of two-breadwinner households, a growing number of unmarried daughters (divorced or never married) must support themselves in the labor force and can undertake the intense caregiver role only with great difficulty and ill effects.
- Changing patterns of marriage and child care. Recent data show that currently 44 percent of adult daughters caring for elderly parents are not married (Stone, Cafferata & Sangl, 1987) and thus lack the emotional support of husbands, a significant increase from the 25 percent reported in past decades (Shanas, 1961). Furthermore, increases in mothers' age when their first child is born means that growing numbers of caregiving adult children must care simultaneously for a parent and a child or children. The incidence of caregivers with double dependency from an impaired parent and a developmentally disabled child, too, has risen markedly (Soldo & Myllyluoma, 1983)

Information and Referral / Care Planning

Given the range of pressures affecting the family caregiver, one of the critical needs in the development of an organized system of care is access to information. As noted previously, services are scattered, variably funded, and frequently neither comprehensive nor comprehensible. Improvements should begin with better information and referral (I&R) to existing sources of assistance through a centralized system of coordinated information in each local area. This would offer a point of entry for victims of ADRD and their families, who often have limited contact with and knowledge of the extant medical, social service, and economic support systems. Prototypes for such centralized systems should be developed in collaboration with existing information sources, such as local Offices on Aging, Federally funded Area Agencies on Aging, community mental health centers, local Medical Societies, and the Alzheimer's Disease and Related Disorders Association (ADRDA) which represents an extensive network of almost 200 local chapters in 48 States.

Providing access to information is a necessary, but not sufficient, step in improving access to services. Rather than assuming that they already know what information they need, it must be recognized that ADRD victims and their families often require assistance in determining needs and making plans. Frequently, family members have little or no experience using services, and may be reluctant to use them even when the services could be useful to them, viewing them as a charity or as evidencing a failure on their part.

Thus, the information and referral function should be linked to a comprehensive assessment program that establishes both diagnosis and prognosis, and develops a care plan sensitive to the needs of the ADRD patient and family. Likewise, case management (many prefer other terms, such as care coordination), discussed below, is a critical resource for accomplishing successful I&R and care planning. Care plans, based on individual needs and with assistance to both patient and caregiver, should be developed to respond with specificity to the patient's particular functional deficits and to utilize available human and fiscal resources within both family and community. The care plan and available services should include provision for caregiver respite. Respite care can be achieved by providing caregiver assistance in the client's home, as well as by caring for victims in adult day care and institutional settings.

Special efforts are needed to develop information and referral, coordination of care, and personal support for employed caregivers. Such services should focus on respite options, personal care, homemaker, and supervision services. Industry, too, should be encouraged to facilitate family caregiving by providing more flexible benefit packages and leave policies. Some countries award social security credits for giving care.

Equally, information and referral programs should focus on reaching currently underserved groups such as those in rural areas, those living alone, and ethnic minorities through such mechanisms as transportation services, concentration of activities at senior centers and other sites commonly utilized by the elderly living alone, and special outreach targeted to the needs of the ethnic minority elderly.

Whereas services programs should support family caregiving and other aspects of community-based care, they should not make the use of any particular form of care a precondition for access to other care delivery systems. In many cases where indications of need are found, pre-screening for nursing home eligibility should not be required to gain access to community-based services. Likewise, in many cases, family home care should not be mandated or made a prerequisite for receiving more formal types of care. The latter point is of particular importance for those victims of ADRD who lack family care opportunities. Service programs should facilitate informing caregivers of the full spectrum of care opportunities available across the long-term care continuum, and the particular advantages and disadvantages of various options.

The Role of Case Management

Perhaps the most widely accepted mechanism through which access to and knowledge about the array of services may be made available is case management (many prefer other terms, such as care coordination, service management, or linkage). Case management refers to the process or administrative service of planning, obtaining and coordinating services on behalf of recipients who have complex needs for care, here, for long-term care (Applebaum & Wilson, 1988; Seltzer, Ivry & Litchfield, 1987). Like information and referral, it is a strategy for dealing with the complexity and fragmentation of the service delivery system, and may in practice be difficult to distinguish from I&R. Unlike I&R, however, the main function of which is to provide information about available services, case management involves broader collaboration with and more active advocacy for the service recipient, including such functions as screening and determining eligibility, assessing needs for services, developing care plans, arranging services, monitoring the implementation of the care plan, counseling, and periodically reassessing needs (Capitman, Haskins & Bernstein, 1986; OTA, 1987).

As actually implemented, case management systems differ largely in terms of the amount of authority the case manager is given to determine eligibility for, authorize, and purchase services, and these systems function to allocate resources across communities as well as to meet the needs of individuals (Kane & Kane, 1987). Although this resource allocation or "gatekeeper" aspect has generally been highlighted when the term is used in discussions of cost controls, the goals of case management within the long-term care system should not emphasize those of eligibility determination, cost-containment, cost-effectiveness, and deterring institutional care; rather they should focus on advocacy for patients and their families, collaborative decision-making and planning for needed services, monitoring and reformulating of plans over time, education regarding techniques of taking care of ADRD patients, counseling, and the like. Significantly, the function of eligiblity determination does not include provision for monitoring patients over time and reevaluation of care plans as circumstances change.

Case management can often link family caregivers with services such as respite or day care in advance of urgent need, and can help determine when such care is best utilized, and when the capacity for home-based care may be reaching an end. The Office of Technology Assessment (1987) has noted that:

> Case management helps persons with dementia and their families use available services. It may enable them to make financial plans for future care needs. It may also permit more efficient use of services. Case management may ensure that individuals are not placed prematurely [into nursing homes]. It can be used to guarantee that the least restrictive environment be available to those who have no family members to advocate for them. (p. 160)

As such, case management should support and not supplant family decision-making. No patient or family should be denied access to information or services because they wish to control care-planning decisions.

Case management can play a key role in ensuring that family needs and desires and those of agencies and medical or social service professionals can be met justly, equitably, and with the needs of the ADRD patient in the forefront of concern. It is a central component of any coherent, rational long-term care system that can simultaneously satisfy consumers, protect families from impoverishment, and provide equitable access to the range of comprehensive quality services at a reasonable cost.

Service Design

There are a number of ways to improve the design of new and existing services. They include such steps as the use of technology, greater insistence on quality assurance, and program design that emphasizes the specific functional capacities and limitations of the program's clients.

As the Office of Technology Assessment (1987, p. 211) has reported, those suffering from ADRD frequently are not differentiated from other elderly people receiving program support in the systems that currently provide long-term care services. Programs that either include ADRD patients or that are specifically designed for Alzheimer's patients and those suffering from related dementias should be organized to treat patients differently according to their particular needs and abilities, and to keep those who need special attention because of particular problems with wandering, aggressive or other uncontrollable behavior, and the like, from those who require more typical forms of care. Such specialized programming leads to better behavioral outcomes and better quality of life for all involved.

New technology should be harnessed to support care for ADRD patients, including systems for providing multiple cues as reminders to function, and management information systems to support care planning and care monitoring over time and across geographic locations. Improved environmental designs should be developed for both family housing and institutional care settings, including such features as attractive and protected outdoor spaces for walking. Standards for improved care environments should not be limited to physical specifications, and should be applicable to normal households, where the bulk of care is given.

Increased emphasis on home and community-based services is timely and appropriate. Many services are naturally based in community sites and can be offered most effectively there. These services both benefit from the supportive assistance that may be provided by family members and, conversely, can support and enhance the potential of family members to maintain the patient in the home setting, as both they and the patient typically prefer. Day care programs provide a valuable option with beneficial effects for many ADRD patients, as well as respite effects for caregivers, and should be promoted.

Each of the foregoing represent attempts to enhance the quality of life for ADRD patients. Their loss of cognitive function should not mean automatic loss of autonomy or of the right to make decisions, within their capacity to do so. ADRD patients are at a specific disadvantage in exercising their rights because they find making their wants known difficult. It is critical at every level of the continuum of care to assure that ADRD patients have the opportunity to exercise their coping capacities maximally and, above all, are treated with dignity.

Thus, efforts to enhance meaningful quality assurance are an essential aspect of long-term care. Quality of care standards should promote restraint-free environments in which excess disability is not produced by excessive use of medications. It is now possible to manage most ADRD patients without restraints or heavy sedation. Over-reliance on medications to control behavioral symptoms of dementia can lead to adverse drug reactions, which include falls, fractures, more confusion, agitation, inactivity, and weakness.

The development of mechanisms for establishing and enforcing advanced directives around issues of life support and terminal care should be encouraged. Provisions to assure that the legally designated agents of ADRD patients make appropriate treatment decisions must be enforced.

More attention must be paid to issues of safety and to protecting ADRD patients from abuse, theft and neglect in both institutional and home care settings. Whereas tendencies of others to ignore their fundamental rights to privacy and autonomy constitute a major problem for cognitively intact residents in long-term care facilities, it must be recognized that most neglect of ADRD patients in institutional and other care settings involves inadequate attention to their basic survival needs, such as nutrition, hydration, skin care, cleanliness, and protection from dangers to well-being and safety arising as a consequence of the patients' impaired judgment.

FINANCING CARE

Financing of the care and treatment of ADRD patients is best addressed as part of an overall financing strategy applicable to all needing long-term care services. To establish a separate approach to financing of

ADRD care would serve only to fragment further the current, disjointed set of multiple service systems and multiple financing systems. However, both public and private long-term care insurance programs must be unambiguous in their coverage of the care required by ADRD patients.

At present, the organization of long-term care services is largely determined by the types of support available from Medicaid (Rivlin & Wiener, 1988). Even though the Medicaid system was designed to serve the acute-care needs of low-income individuals rather than the requirements of those needing long-term care as such, since alternative sources of support are generally not available many individuals and families are forced to "spend down" their resources to a level of impoverishment in order to become eligible for this form of coverage (Kane & Kane, 1987; OTA, 1987). A Federal long-term care insurance plan is needed to replace Medicaid as the principal mechanism available for supporting our Nation's long-term care needs. This strategy should be built around a commitment to universal coverage for care. Such a social insurance approach has received very widespread and growing support (AARP & ADRDA representatives, 1989). Critical, however, is the understanding that this approach does not eliminate the concept of reasonable cost-sharing based on economic status.

Clearly, any public program of this magnitude cannot be set in place without safeguards to control against excessive cost or system abuse. At the same time, if well organized and effective, such a program has the potential of increasing the efficiency of service delivery and of leading to overall savings by reducing indirect costs. Four general approaches to cost-containment have been proposed in Federal health care legislation over the years and, in some cases, set in place. They include:

- income-related cost sharing, where beneficiaries pay based on a sliding scale of capacity to pay.

- <u>targeted benefits</u>, in which entitlements for services differ, based on the extent of disability. Such arrangements for differentiating benefits can establish either a single entitlement threshold based on a given level of disability, or establish a continuum or gradation of entitlement in which the amount and scope of services are determined by the level of disability.

- <u>capitation</u>, a method of paying for care in which care providers agree to deliver a predetermined set of services as needed over a specified time period in return for payment on a "per person" basis. The individual patient thus can buy access to a given package of services by prepaying a fixed fee. In capitation systems, overall spending for a defined population may be capped at a fixed level, with benefits in the aggregate limited by negotiated rates as to the average costs per person. Capitation principles are exemplified in health maintenance organizations (HMOs), which deal with the Medicare and Medicaid clients they serve through contracts arranged under the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982. Additionally, Social HMOs (SHMOs), which cover social services as well as health care and offer at least partial long-term care coverage, utilize capitation but so far have operated only on an experimental basis (Leutz, Abrahams, Greenlick, Kane & Prottas, 1988; Leutz et al., 1985). To date, capitation has been used only to a very limited extent relative to long-term care, in that no program using capitation comprehensively covers both acute health care and long-term care.

- <u>preadmission screening or case review</u>, in which a single individual or agency acts as the service authorizer or

> "gatekeeper" through which access to care is gained. Although this function has sometimes been referred to as "case management," it should not be confused with the advocacy concept of case management, as discussed above. The Panel suggests that the advocacy/care planning and gatekeeper functions are distinct and incompatible, and cannot feasibly be assigned to the same individual or agency.

Recognizing the requisites of cost containment, the Panel anticipates that a workable long-term care plan will likely incorporate all or most of these strategies in some form. The Panel cautions, however, that safeguards must be built into the plan to assure that these cost-containment provisions do not create inequities in the system of care based on socioeconomic status, effectively denying equal access to care for the poor.

Capitation creates strong incentives to identify cost-effective and cost-efficient service strategies. By the same token, there are several dangers in this approach, which must be circumvented by appropriate safeguards. Capitation that is based too exclusively on cost-containment considerations, without attending to standards of care or being influenced by actual care needs and costs, can be used to the detriment of patients and can readily result in diminished quality of care. Another problem is that in capitation systems those who are frail and less mobile may tend to receive less than their proportionate share of the limited available services. In a national program the calculation of capitation rates must also be accomplished carefully so as to avoid *regional inequities*, since the average costs of care in rural or low-income regions may differ sharply from costs in major metropolitan centers.

The Panel believes that there appear to be fewer problems associated with the use of the first two cost-containment approaches described above, so long as specific care is taken to ensure that the poor are not penalized by cost-sharing plans and that targeted benefits are established along a continuum of need rather than at a single eligibility threshold.

A central principle for public long-term care financing should be its base in a single payer. Pooling public funds from multiple sources or systems (e.g., health and social services, health and mental health, acute care and long-term care) at the program level will strengthen the system's capacity to support individualized medical and social service plans across the continuum of service needs experienced by the ADRD patient. It also has the potential to reduce currently overlapping administrative costs substantially as a result of program consolidations. Health and social services, facility- and community-based care should be covered. Although public financing is best managed at the Federal and State levels, local direction will be needed to make decisions among program options for individual patients within cost-containment guidelines.

None of the foregoing, however, is intended to discourage private insurance entities from providing supplemental benefits nor to discourage the private sector from playing a larger role in the provision and financing of long-term care. An excellent example of directions in which private sector initiatives should develop is provided by the revised National Association of Insurance Commissioners model regulations for private long-term care insurance policies. These make coverage of Alzheimer's disease mandatory, and prohibit policies from including a *prior* hospitalization requirement or a requirement for having been under skilled care before one becomes eligible for receiving lower levels of care. The Panel remains cognizant, however, of past difficulties of some of the so-called *Medi*gap plans under Medicare, and counsels that private sector financing of long-term care should neither supplant any portion of the public sector program nor be provided without sufficient safeguards against abusive practices.

Even in the most optimistic scenario, private insurance seems unlikely to finance more than a modest proportion of total nursing home and home care services for ADRD patients (Rivlin & Wiener, 1988). In addition, those who will benefit from private long-term care insurance are likely to be those who least need such protection, whereas the poor and those at risk of having to spend down their resources will find the costs of such insurance most out of reach. Thus, other financing options, such as a publicly funded insurance plan or mechanisms for producing an appropriate mix of public and private coverage, must receive priority.

ELIGIBILITY

Though eligibility criteria may appropriately vary somewhat across differing types of services, eligibility should be based on <u>impairments of function and dependencies</u> rather than on diagnosis or on the age of the individual. The measures of function used to determine dependencies or disabilities should be sensitive to the needs of ADRD patients. Special problems exist in the emphasis placed exclusively on activities of daily living (ADL) measures as long-term care eligibility criteria in a number of long-term care proposals now before the Congress. Activities of daily living include such capacities as dressing, self-care, meal preparation and eating, among others. The emphasis in conventional ADL scales is on the capacity to perform such tasks, a reasonable criterion for some purposes, for example, in Social Security Disability Insurance determinations of an individual's ability to perform paid work. However, in the case of the ADRD patient, the physical capacity to perform the ADL tasks may remain present. What may be lacking is the capacity to remember to perform the activity in the first place, or to stay on task long enough to continue the activity to an appropriate conclusion. Unless supplemented by additional criteria, conventional ADL scales would inappropriately deny eligibility for long-term care in the case of an ADRD patient who can get dressed, but who does not recall where the clothes are kept, or that dressing is necessary in the first place.

Further problems stem from the vagueness or imprecision of the criteria in many of the legislative proposals. For example, certain proposals have spoken of cognitive impairment as well as ADL deficits as a criterion, without defining how such impairment is to be determined operationally, or have tried to equate degrees of impairment with degrees of ADL impairment, an attempt for which there is no clear empirical basis and which undercuts the independence of the cognitive dimension as a separate criterion.

It is critical, therefore, to provide an eligibility standard that recognizes and measures appropriately the special deficits that are characteristic of ADRD patients. Such individuals should not be penalized or deprived of eligibility because their particular disorders may be manifested in a need for supervision or cueing of activities of daily living rather than in a physical incapacity to perform the tasks themselves, or in a need for supervision to ensure their safety. Cueing here refers to the necessity for a responsible other person to remind or prompt the impaired individual to initiate or complete the essential activities of daily living. In many cases supervision is necessary not only to compensate for lost mental functions, but also to protect the patient and those around him or her from the potentially dangerous consequences of unsupervised behaviors, such as in the case of patients inclined to wander outdoors poorly dressed for the weather or to leave stoves turned on and unattended, or the like. Eligibility for services might be better determined according to a set of guidelines supplemented by knowledgeable judgment on the part of qualified specialists who have no financial interests in the long-term care system than by rigidly measured criteria.

PERSONNEL AND TRAINING NEEDS

Personnel needs for caregivers for the impaired elderly will create a major crisis in long-term care. The constrained supply of both professional and non-professional personnel as well as the pressures on informal caregivers make this a critical issue for ADRD planning. In view of the importance of this problem, the Panel will address this topic at greater length in a separate future report. For the moment, we highlight several immediate steps requiring attention by policy makers and training programs alike.

Training programs should be developed and undertaken for the wide variety of care providers required throughout the continuum of care. A well-designed training program should look toward and culminate in credentialling of those who develop special skills. Such training will be particularly important in home-care and institutional care areas, where both minimum-skilled and skilled personnel need to be recruited and trained, and where turnover may be substantial. However, there are many ramifications and some disadvantages of establishing a credentialling system. At the very least, paid caregivers should have evidence of dementia-specific or dementia-relevant training.

Specialized training about dementia must be provided to all case managers, supervisors, and support personnel working in the medical care system, social services system, and mental health care system, including those who would serve the information and referral function described earlier in this section. Greater attention and education must also be made available to those who come in contact with ADRD patients in board and care facilities, where the capacity for inattention to this population in need remains high. Moreover, any approved long-term care system should be mandated to make general information and training available to all family caregivers. The information should be of a sort that is readily comprehensible to and accepted by family members and home aides, and should provide these individuals with greater understanding of the nature of the disorder, the role they play as caregivers, and the roles other professionals and facilities can play in sharing the burden of care. Special programs for public education about ADRD should also be supported.

Training programs and credentialling and licensing boards in each professional discipline should ensure that professionals, whether working in the field or in general practice, demonstrate proficiency in the special skills and knowledge relevant to caring for ADRD patients. In order to improve the overall direction and quality of care, specific material on ADRD care should be included in the curriculum content and the licensing examination process for generalist professionals in health and social services, and should include recognition of the natural history, complications, and treatment strategies for ADRD patients.

RECOMMENDATIONS

Central to the organization of services for those suffering from ADRD is <u>the establishment of an inclusive, publicly funded long-term care program that recognizes the needs of ADRD patients in both eligibility and covered services</u>. <u>A Federal long-term care insurance plan should be enacted to replace Medicaid as the principal mechanism available for financing the services to meet our Nation's long-term care needs</u>. Rather than establishing a unique system for ADRD patients, the goal should be to devise a general long-term care program that will clearly provide for the needs of dementia patients. In consideration of the cost-containment requisites of any publicly supported health care program, some sort of income-related cost-sharing mechanism or targeted benefit program that matches level of disability to the level of service covered should be included as part of such a program.

Under such a long-term care program, eligibility requirements must be developed that will ensure that ADRD patients' disabilities are "captured" by the criteria and scales used to measure functional capacity. The criteria in many of the current legislative proposals suffer from imprecise definition, and the emphasis on activities of daily living alone provides an insufficient standard, since typical ADL scales measure only the ability to perform particular simple tasks of self-care or daily living but disregard the level of supervision or cueing (prompting) needed to remember to perform and actually to carry out these activities, as well as the supervision required to ensure the patient's safety. While the intent in utilizing conventional ways of measuring ADLs may not have been to penalize the ADRD patient, the fact is otherwise. Without careful attention to the nature of the disabilities inherent in ADRD, eligibility criteria based solely on measures such as conventional ADL scales may cause an enacted long-term care program to fail to meet its mandate to serve all those with long-term care needs, including the ADRD victim. ADL scales therefore need to be revised or supplemented with other eligibility criteria, and imprecision must be eliminated from the criteria.

Care must be taken to ensure that such a program operates along the full continuum of care from diagnosis to death, recognizing the special roles played by family caregivers and by institutional providers alike, but above all, recognizing the dignity and rights of the ADRD victim and family to self-determination.

Immediate action should be taken to encourage the States, most of which already have a major investment in home care systems, to expand and further develop such systems. To this end, and to the extent that States can be encouraged to request Medicaid waivers for expanding home care alternatives, the Panel urges the Secretary of Health and Human Services to exercise his authority under sections 1915(c) and (d) of the Social Security Act (further specified under such legislation as the Omnibus Budget Reconciliation Act [OBRA] of 1981 and OBRA of 1987) to facilitate and continue to grant such waivers, permitting the application of Medicaid matching funds toward meeting home health care costs. While Medicaid 2176 waivers provide a restricted mechanism that is useful as a partial approach for expanding home and community-based care, broader support is needed, with full recognition given to the social and clinical effectiveness of the care, not just its cost-effectiveness (the currently emphasized criterion), when considering programs for waiver eligibility determinations (Chavkin, 1987). Furthermore, recognizing that various State systems are developing the agencies and personnel that will be required for a national long-term care system, Congressional action to encourage States toward further developing their home care systems is also called for.

Services for Alzheimer's victims and those suffering from related dementias, now severely fragmented, need to be reorganized, or at least coalesced under a local information and referral capacity to facilitate access by the patient and family caregivers. The goal is to ensure a range of high-quality services that will provide for individualization of services packages. The heterogeneity of needs of ADRD patients and their families demands nothing less. Both home care and other community-based services and institutional care deserve significant emphasis. Each is an integral part of the continuum. Respite care for caregivers and day care are options that arise at each point in the continuum, and should not be treated as separate points distinct from home care needs or institutional care needs.

Specialized training in the needs of ADRD patients must be undertaken by professionals, paraprofessionals, and support personnel working or coming in contact with ADRD patients and their families. Greater specificity in this area will be provided in a forthcoming Panel report.

RESEARCH ON SERVICES AND THEIR FINANCING

Research to find more effective and efficient means of delivering and financing services for ADRD patients and their families deserves a higher priority than it has received. As was pointed out by the former Dementia Project Director of the Office of Technology Assessment during a Congressional hearing,

> Those with dementia constitute a large fraction of those needing long-term care and social support...yet there is remarkably little known about what services they need, which ones they use, how much they spend for them, and how different services can complement one another to meet the needs of people with dementia (Cook-Deegan, 1986).

An expansion and improvement of research on services for ADRD patients and their families, and on the financing of these services, is critical to successful implementation of the optimum system of services discussed in the preceding section. The range of questions to be addressed is wide. It is important, for example, to learn which services have the greatest positive outcome for patient and caregiver alike. Information about which services most effectively meet the needs of ADRD patients and their families will indicate which deserve to be continued or expanded. It is also essential to understand more clearly why certain helpful services are underutilized. If barriers at the personal, institutional and community levels have been erected that impede service utilization, research can be directed towards how these may be overcome; if certain services are ineffective or inefficient, the research may suggest ways in which efforts should be redeployed, the better to meet the real needs and expectations of patients and families.

Unfortunately, support for such research has been minimal. According to the Office of Technology Assessment (1987),

> estimated federal spending on health services research related to dementia was...in the range of $1.3 million to $2 million in 1986. That corresponds to roughly one-two-hundredth of 1 percent of the estimated national costs of dementing illness...[and] one-thirtieth of 1 percent of Federal payments for long-term care of those with dementia. (p. 50)

Somewhat greater amounts of funding than this have been appropriated for demonstrations and studies that address long-term care in general terms, such as under the Medicare Catastrophic Coverage Act of 1988. However, even these larger figures combining costs for demonstrations and for research defined broadly (to be distinguished from services research related specifically to dementia) remain but a small fraction of 1 percent of the Federal payments for long-term care for those with dementia. Only $2 million of the total $16 million that was authorized for health services research in FY88 and FY89 by the Alzheimer's Disease and Related Dementias Services Research Act of 1986 (Title IX of P.L. 99-660) has actually been appropriated. Additionally, in one major Alzheimer's service demonstration effort that has recently been undertaken by the Health Care Financing Administration, $2 million was included for a research component, which can be viewed as an appropriation in the spirit of P.L. 99-660 though not formally made under its provisions. Overall, however, there remains a lack of attention to numerous issues that beg to be addressed regarding appropriate services for ADRD patients and their families.

Most prior research efforts have dealt with long-term care generally, rather than with ADRD problems specifically. Furthermore, despite increasing efforts to mount both Federal and other demonstrations and model programs, there has been concern that much of the present funding in the health services research area is going towards demonstration projects that lack an adequate evaluation design incorporated into the plan from the outset. In other words, in these pilot service efforts most of the funding has been appropriated for setting up model services rather than for conducting evaluation research on the services.

In particular, with a focus on describing costs and utilization patterns, most prior demonstration efforts have lacked research and evaluation designs adequate for determining such issues as the optimal design of services and the clinical efficacy of existing services. This shortcoming leads to dually unfortunate consequences. On the one hand, such demonstrations arrange provisional services but provide insufficient information to evaluate the best way to set up a service program. On the other hand, without an adequate formal evaluation, it becomes very difficult to recommend replication of model programs, and a risk is created that ineffective programs will not be recognized. Such efforts thus fail to indicate whether those programs that have been established are accomplishing what they should be doing -- and therefore whether they should be continued or should be phased out or terminated.

Health services research on ADRD is in its infancy; the available data are very limited. The Panel recognizes that it would be premature and arbitrary to prescribe a detailed agenda for research in this area when the issues to be addressed await clearer delineation and broader consensus. In anticipation of the magnitude of the programs that will be required to meet future demands for ADRD services, however, bold steps must be taken to build up the research knowledge base and to increase the capacity of the field to tackle emerging issues about ADRD services and their financing. Federal support is critical, for the current low funding levels for services research attract few new investigators into this field of endeavor. The major research questions in this area must be addressed on multiple fronts.

At the systemic level, research must proceed to clarify how to organize the overall care system so that it makes available the full spectrum of services that are needed and achieves the ideal of continuity of care, together with an acceptable method of financing these programs. At this level, also, research must establish how to organize the specific programs within the care system so that they are readily accessible and actually delivered to those for whom they are suitable. For these purposes, it is necessary to understand more clearly the incentives, disincentives and likely costs for utilizing services and for entering the long-term care system.

A second, clinical level of research must evaluate the design features of ADRD services programs in terms of the clinical outcomes they produce and their success at achieving stated goals vis-a-vis individual patients. It is the purpose of such evaluative studies to ensure that programs, once designed, are meeting the real needs of the ADRD patient and the expectations of the family and community in an effective way.

SYSTEMIC LEVEL RESEARCH

Continuum of Services

The currently available research evidence does not definitively indicate how the system of services can best be organized. More research is needed to assist in planning and decision-making about the optimal range or continuum of community and institutional services required by ADRD patients and their families. The critical components, methods of delivery, and costs of services may vary regionally within the Nation, and between urban, suburban and rural communities. Better information must be developed about the most effective designs for various types of services, about how each type can best be staffed, about the appropriate mix and coordination of services, and about the optimum timing for emphasizing each service during the progression of the disease.

Within the continuum of care, options should be evaluated regarding the most effective ways of combining the formal services provided by health care professionals and the informal support services provided by family members, friends and neighbors. Since both sources of assistance are important, the research emphasis should be on finding ways of coordinating them for the benefit of patients and families, rather than on trying to supplant either.

Service Delivery Issues: Access, Eligibility, and Utilization

Research on alternative ways of delivering services can contribute mightily to ensuring that such programs reach the individuals for whom they are designed, and that access to these services is equitable. If services are not utilized to the extent anticipated, or if they are used unevenly by various targeted groups, evaluative research is needed to determine the reasons for these utilization patterns. In some cases it may be found that the methods of making the services known and/or delivering them fail to reach the most relevant potential users, or that other features, such as costs or means of determining eligibility, indirectly create a bias against use by certain groups. All such factors can be considered barriers that prevent many potential users from having the type of access to services that would be of benefit to them.

Accordingly, services researchers need to learn more about the <u>use of formal services</u> by ADRD patients and their families, including <u>barriers to access to services</u> and strategies for overcoming these barriers to the appropriate and timely use of services. This goal will require that a better understanding be gained regarding the function of <u>naturally existing "gatekeepers,"</u> that is, individuals who influence or control patients' entry to and continuation in the service delivery system. In particular, research should address the role of physicians in assuring compliance with service recommendations. Access issues are particularly important in the case of minorities and for demented persons living alone.

The considerations discussed above under "Eligibility" also call for research evaluating <u>measures of function</u> as a basis for determining services eligibility. Alternative or additional measures to conventional ADL scales need to be developed and tested so that methods for determining eligibility will reflect the specific service needs of ADRD patients.

Researchers must also assist in designing and evaluating innovative or improved methods of service delivery. Especially important are new methods to improve the delivery of services to previously underserved groups, to ease tendencies toward inappropriately using services that are not ideally suited to the chronic care needs of ADRD patients (e.g., hospital emergency rooms), and to simplify staff efforts and consequently reduce program costs.

Financing of Services

Research on financing has two primary goals. The first is <u>to determine the costs and evaluate the cost-effectiveness of various services</u>. Studies of this type should be designed to differentiate the costs and benefits of ADRD services as they apply to patients, family members, and other care providers and third-party payors.

The second major goal is to determine the optimal methods of <u>financing and managing the costs</u> of various health care and social services for ADRD patients and their families. There is a special need to evaluate potentially innovative financing mechanisms in the private sector.

CLINICAL LEVEL RESEARCH

Design of Services

Perhaps the least research has been done at the level of ascertaining the clinically critical components of ADRD service programs and of individually focused treatment strategies, and evaluating relevant outcomes for the individual recipients. The overall goal here is to evaluate which services <u>best and most efficiently meet the needs and expectations</u> of ADRD patients and their families.

High priority should be given to research that evaluates the efficacy of specific services -- in home, community and institutional settings -- and ascertains which features of programs are critical to achieving their stated goals. There is a particular need at present for such research on special care units (SCUs) or dedicated care units for ADRD patients. Although programs of this sort have increasingly been established throughout the Nation, these encompass wide variations in features and little systematic research has been accomplished to address the many questions about them, which range from the appropriate standards to be used for SCU care to its cost-effectiveness. In terms of their contribution to achieving a successful SCU program, research should evaluate such features as the critical elements of the physical plant and environmental design (e.g., attractive protected spaces, outdoors and indoors, for walking or wandering), the optimal level and type of staff, the programs or activities leading to positive patient outcomes, and the best ways that family members can support or assist with patients' continuing care within SCUs. Not to be forgotten, the impact of SCUs should be evaluated for families as well as for ADRD patients.

Another prime area for evaluative studies concerns programs that provide family-focused services, especially interventions that are developed primarily for the benefit of family caregivers, such as respite care programs, family support groups, traditional forms of family counseling and therapy, and other options. These programs should be evaluated both in terms of impact on the ADRD patient and in terms of caregiver relief, and should attend to the same issues of identifying the critical program features as discussed above for SCUs. Although the Health Care Financing Administration has recently funded a major study that includes attention to respite care, the Panel notes that this, and most other previous demonstrations as well, have typically had more of a focus on describing utilization patterns and costs than on investigating clinical care issues such as the design of service settings, staffing patterns, and the like.

Research should be encouraged that evaluates practical "consumer suggestions" and information on low-tech innovations that can enhance the quality and effectiveness of institutional and community-based care, or can ameliorate the burdensomeness of care for family caregivers. Methods of assembling and disseminating such information are also worthy of study.

Evaluating Clinical Outcomes

There is a pressing need to develop, test and evaluate improved strategies for clinical treatment or other forms of intervention with ADRD patients and their family members. In addition to research focused on potential treatments for the underlying disease process itself, clinical investigators should evaluate and refine techniques for managing the mental, emotional and behavioral problems and impairments characteristically seen with ADRD. A full range of approaches needs to be investigated, including psychopharmacological, psychotherapeutic, behavioral, educational, and environmental strategies. In addition to treatments carried out by health care professionals, interventions should be designed to assist caregivers in their efforts at maintaining ADRD patients at an optimal level of functioning, and to assist the caregivers themselves in coping with their own emotional strain and other stress-related responses (Buckwalter, 1989).

In order to develop the most effective clinical interventions for use with the ADRD population, more must be learned about the factors to be taken into account in targeting both patient and caregiver services so as to achieve maximum benefits. As a corollary, research must be directed towards determining the service implications of the personal characteristics of individual patients and caregivers. This will entail identifying problems specific to particular types of caregivers (e.g., which caregivers are at greatest risk of burn-out?), and evaluating mechanisms through which such problems may be ameliorated (e.g., can respite care or day care prevent, mitigate or delay burn-out? how important is the type of support provided and its timing during the course of caregiving?). More information is needed particularly about minorities, male caregivers, employed caregivers, and family caregivers living at a distance from the ADRD patient.

The process of providing services begins with appropriate assessment. Research should be advanced that is designed to establish the most effective methods for providing multidimensional assessments of the current functioning and care needs of individuals with ADRD. To be accepted for wide usage, assessment procedures should have a strong base in research data showing that they are comprehensive and systematic, targeted to the relevant issues for ADRD patients and their families, and capable of being applied consistently across various settings. The measures used should reflect patients' needs for specific services.

In terms of successfully accomplishing evaluative studies, there is a great methodological need for measuring more precisely and appropriately the clinically relevant outcomes of care to be expected for both patients and family caregivers. As a first step, service providers and researchers must develop better standards for assessing the quality of care received by ADRD patients, including means of assuring attention to quality of life issues, among them respect for dignity and privacy and the right to make decisions within one's capacity about both daily life and major care. As well, better measuring techniques should be developed and tested that can be applied across various types of clinical trials, whether the interventions be behavioral, clinical, pharmacologic, environmental, or other in nature.

The ascertainment of appropriate outcomes for those with progressively deteriorating conditions requires somewhat different approaches than used in studies on reversible conditions. Considerations of disease course and the timing of adverse changes need to be given priority over measures which assume an acute-care model of cure or symptom reversal. Improved strategies for evaluating outcomes of ADRD services should identify better ways to measure health status over time, and to compare whether the provision of services alters the actual course of the disease over time relative to the typical prognosis. Such efforts will be aided by doing longitudinal studies that use the natural history (or course) of dementing illness as a backdrop against which to learn more about the process or dynamics of family caregiving, or to assess the effectiveness over time of various types of interventions.

RECOMMENDATIONS

Clearly, more attention must be paid to, and funding provided for, ADRD health services research -- including both evaluation research linked to demonstration projects and other studies of existing ADRD services. The Panel recommends that the annual funding for ADRD services research and evaluation be increased over current levels by $25 million immediately, and by $50 million within three-to-five years. Evaluation research components, properly integrated into the design of demonstration projects, often cost as much as, or at least a substantial portion of, the costs of the demonstrations themselves. Though the initial expense of such research must be acknowledged, it is the only way to determine whether a model program achieved its purposes, and can often save substantial sums by shaping or curtailing a potential program of national scope before it is implemented.

Of the initial amount requested, $10 million would be used for evaluations linked to major demonstration efforts on ADRD services. Another $5 - 10 million should be used to support investigator-initiated studies and to strengthen the infrastructure for conducting ADRD services research -- through training grants for future services researchers and instrumentation grants to enhance the technological resources available for this type of research. In particular, it is essential that steps be taken to continue to enlarge the pool of new investigators trained in state-of-the-art scientific techniques for conducting high-quality health services and financing research, through appropriate training grants. Improved and sustained funding levels for ADRD services research are particularly important for attracting talented new investigators into this field. Under Title IX of P. L. 99-660 (the

"Alzheimer's Disease and Related Dementias Services Research Act of 1986"), $8 million per year was authorized over four years (FY88-91) for ADRD health services research to be conducted by four DHHS agencies. Since over the first two years of this legislation only $2 million of the authorized $16 million has actually been appropriated, implementation of the intent of the legislation has been limited.

Research on ADRD services should be better coordinated and focused on areas of agreed-upon importance. This process requires that the available information be identified and evaluated, and that research efforts be focused on those areas where prior research has failed to resolve the questions at issue. Interagency coordination of research funding is implied. The Panel recommends that funds for the conduct of research and evaluation focusing on how to design, deliver and finance optimal programs of clinical care and family services for ADRD victims should be coordinated among the member agencies of the DHHS Council on Alzheimer's Disease, building upon Part E, Sections 941-949, of Title IX of P.L. 99-660, thereby moving this legislation beyond authorization to implementation. A concerted effort is also necessary to ensure that the information gathered is promptly disseminated to caregivers and policy makers.

Perhaps one of the most productive means of developing an agenda of research to promote tested innovation in service delivery can be achieved through the establishment of ADRD health services research centers. This strategy applies the familiar concept of accelerating the advance of a research field by emphasizing growth through its existing "centers of excellence." Research initiatives thus do not require start-up funds, but can increase momentum by building upon institutions that already have a proven track record in the area of research. Relevant prototypes for utilizing such centers of excellence exist within the Public Health Service and other Federal agencies, in such programs as the Alzheimer's Disease Research Centers of the National Institute on Aging; the Clinical Research Centers on

Psychopathology of the Elderly of the National Institute of Mental Health; the Geriatric Education Centers of the Health Resources and Services Administration; and the Geriatric Research, Education, and Clinical Centers of the Veterans Administration.

In order to target research toward the most important issues, the ADRD health services research centers might be given mandates to develop differing areas of expertise, such as in design and evaluation of service programs, in identifying means of modifying and adapting appropriate existing services to meet the special needs of ADRD patients, in testing individual components of the service delivery system, in identifying services that effectively meet the needs of ADRD patients and their families and those that do not, or in policy analysis and synthesis of national data, including the monitoring of demographic trends and their implications for future service needs. Such centers might also play a critical role in terms of coordinating ADRD service delivery in the United States with the kind of plans and efforts enacted in other countries.

As part of the overall funding request, the Panel recommends that up to ten such centers be established, phased in over a three-to-five year period similar to that mentioned above, each with an annual budget of $1 million. Coordination and administration of the centers program should be accomplished through the agencies of the Council on Alzheimer's Disease, as suggested above for the overall funding request. In some cases the ADRD health services research centers might be closely identified with Alzheimer's Disease Research Centers, since the same institution may have a strong track record in both services research and basic science aspects of ADRD. In other cases in which these centers might be formed by institutions with outstanding records solely in the services research area, the center should demonstrate appropriate linkages and means of coordinating its efforts with other existing centers that are focused on basic and clinical biomedical ADRD research.

Such ADRD research centers, working in concert with other lines of scientific investigation, can provide effective and efficient conduits for accomplishing services research along multidisciplinary lines in a field which currently has more questions than answers -- and which has tended to be a neglected aspect of the overall research initiative on ADRD. Additionally, these centers would provide not only a basis for instituting and testing innovative interventions for ADRD patients and their families, but also a logical place for mounting multidisciplinary services-oriented training programs for health services researchers, clinical services providers, and family caregivers.

CONCLUSION

This report represents the attention given by the Advisory Panel on Alzheimer's Disease to the four areas of concern that it was charged to address, namely, biomedical research, health services research, health care and social services delivery, and the financing of health care and social services for ADRD patients and their families. Discussion of these areas has been organized in the report under the categories of biomedical research, organization and delivery of services and financing of care, and research on services and their financing. The report evaluates the state of the art and makes a series of recommendations in each category which suggest ways in which science policy and public policy regarding Alzheimer's disease and related disorders might be improved.

The Panel finds that the biomedical research field is poised for rapid advances and possible breakthroughs, but that Federal funding needs to be increased, that the number and current funding levels of the Alzheimer's Disease Research Centers should be expanded, and that construction and instrumentation funds should be made available to strengthen the research infrastructure of the field.

In terms of available services and mechanisms for the financing of care, the Panel finds that current programs are fragmented and woefully inadequate to meet present, much less future, needs of ADRD patients and their families, and therefore recommends that the Congress place a major priority on enacting publicly funded long-term care legislation. The report also contains a number of more specific recommendations about the features that should be incorporated so that the long-term care plan will adequately serve the needs of ADRD patients and their families, in such matters as the necessary components of the continuum of services, eligibility criteria, and cost-containment considerations. In support of the foregoing, the report urges the Secretary of Health and Human Services now to expand home and community-based waivers toward furthering State systems of home care, and calls on the Congress to act to encourage additional development of such systems.

With regard to resarch on services and their financing, the Panel finds that relatively little priority has been placed on research to find more effective and efficient means of delivering and financing services to ADRD victims and their families, and that service demonstrations rarely incorporate an adequate research and evaluation component. The Panel recommends a phased program of increasing funding support for such services research and evaluation, including the establishment of a group of ADRD health services research centers. Issues that deserve high-priority attention in the services research area are discussed.

The Panel believes that enactment of these recommendations will not only be beneficial to large numbers of ADRD patients and their families, but will be critical to the long-range well-being of the entire Nation. It calls upon the Congress and the Department of Health and Human Services, through its Secretary and the Council on Alzheimer's Disease, to join in a collaborative effort to address the pressing problems presented to American society by Alzheimer's disease and related dementias.

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NATIONAL INSTITUTES OF HEALTH

National Institute on Aging

ALZHEIMER'S DISEASE

Among the many disorders associated with growing older, one of the most devastating and most feared is Alzheimer's disease. From its onset, marked by subtle changes in memory, until the terminal stages when patients are totally dependent on their caregivers, Alzheimer's disease causes a variety of physical, psychological, and emotional changes. Although exact numbers are not known, it is estimated that between 2.5 and 3 million people in the United States have Alzheimer's disease, at a cost of $88 billion each year.

In 1988, many studies on Alzheimer's disease have focused on 1) why brain cells die, 2) what makes specific types of cells in particular regions of the brain vulnerable to cell death, and 3) whether or not such cell death can be averted by drugs or other therapies. This report describes some of the most promising leads scientists are exploring as they try to determine what causes the disease, how it progresses, and how we can treat, cure, and maybe someday prevent it.

NIH research on Alzheimer's disease is supported or conducted by the National Institute on Aging (NIA), the National Institute of Neurological Disorders and Stroke (NINDS), formerly the National Institute of Neurological and Communicative Disorders and Stroke, the National Institute of Allergy and Infectious Diseases (NIAID), the National Institute of Child Health and Human Development (NICHD), the National Eye Institute (NEI), the National Institute of Environmental Health Sciences (NIEHS), the Division of Research Resources (DRR), as well as the National Center for Nursing Research (NCNR).

Scientists Focus on the Role of Toxins in Alzheimer's Disease

For a number of years, scientists have focused on acetylcholine as the major neurotransmitter involved in memory, and therefore Alzheimer's disease. Now, they have found that a second neurotransmitter, glutamate, may play an equally important role. The difference is that while normal levels of glutamate in the cell stimulate memory, excess levels can have dire consequences. Research on glutamate may help to answer a critical question in the study of Alzheimer's disease: Why do brain cells die?

At the University of California at Irvine, Dr. Carl W. Cotman and his colleagues have found that there is a delicate balance between normal levels of glutamate in the central nervous system--which can play a role in brain growth and development, learning, and memory--and high levels of the neurotransmitter--which can be toxic to selected brain cells.

According to Dr. Cotman, the key to glutamate's effect on the life and functioning of the cell may be the receptors, or binding sites on the cell surface. There are many different types of receptors, each associated with a different chemical or neurotransmitter. One such type is the NMDA receptor, so called because it reacts with the chemical N-methyl-D-aspartate. NMDA receptors bind with glutamate after it is released across the junctions (or synapses) between cells. This in turn sets off a chain of reactions by which cell-to-cell communication is completed. NMDA receptors play an important role as gateways in the membrane, or outer layer of the cell, allowing the passage of vital nutrients and blocking the flow of harmful substances.

Dr. Cotman and his colleagues have found that if NMDA receptors are overstimulated by high levels of glutamate, brain cells die. High levels of glutamate can result when the brain is deprived of vital nutrients such as oxygen and glucose, a condition that some experts have suggested can be caused by age-related diseases or other conditions. In looking at the brains of Alzheimer patients, Dr. Cotman found a link between disruptions in the glutamatergic neurotransmitter system and extensive cell loss in parts of the hippocampus. The hippocampus and the cortex (brain structures associated with learning, memory, and reasoning) suffer serious damage in Alzheimer's disease.

At the University of Michigan, Ann Arbor, Dr. Anne Young has taken this research one step further by suggesting that extensive destruction caused by glutamate in the hippocampus and the cortex may cause Alzheimer's disease.

Dr. Young and her colleagues studied postmortem brains from Alzheimer patients and age-matched controls. In the cortex of the Alzheimer patients, they found that NMDA receptor density was decreased by approximately 60 percent. Changes in NMDA receptors also were apparent throughout the hippocampus of the patients, approaching 90 percent loss in certain sections.

According to the investigators, the profound loss of glutamate receptors in these parts of the brain, coupled with the overactivity of glutamate cells, is responsible for the learning and memory problems of Alzheimer patients and may precede other changes in the course of the disease.

Although this finding has yet to be confirmed by other scientists, a number of investigators have found that the glutamatergic system is one of many neurotransmitter systems that is disrupted in Alzheimer's disease.

Drs. Cotman, Young and others hope to continue to study glutamate and its receptors to develop a better understanding of their function in the healthy brain, their role in Alzheimer's and other diseases, and their potential as targets for future drug therapies.

Membrane Abnormalities Found in Alzheimer's Disease

While Drs. Cotman and Young examine the effects of glutamate on the cell membrane, investigators at two NIA-supported Alzheimer's Disease Research Centers (ADRCs) are pursuing leads that suggest other ways the cell's protective shell may be disrupted in Alzheimer's disease, thus leading to cell death.

In separate studies, Dr. Jay W. Pettegrew of the University of Pittsburgh ADRC in Pennsylvania and Dr. John H. Growdon of the Harvard Medical School/Massachusetts Institute of Technology/ Massachusetts General Hospital ADRC in Boston have both found elevated amounts of two substances in the postmortem brains of Alzheimer victims. The substances, phosphatidylcholine (PC) and phosphoethanolamine (PE), belong to a class of compounds known as phospholipids, which, along with sugar and cholesterol molecules, form the basis of cell membranes. The membrane and the proteins located within it play a critical role in a cell's ability to communicate with other cells and determines a cell's ability to thrive. These phospholipid membrane abnormalities indicate a basic defect in cell metabolism, the process by which a cell uses energy.

The investigators attribute the phospholipid abnormalities to a chain reaction that begins with increased activity of enzymes that accelerate the coupling of phosphorous with other compounds in a process known as phosphorylation. While phosphorylation is needed for many cellular processes, excessive amounts of phosphorous can result in the derangement of proteins within the cell. An example might be the changes that lead to development of the classic neurofibrillary (nerve fiber) tangles or abnormal proteins found in nerve cells associated with Alzheimer's disease. Further, the researchers noted that the elevated PE and PC phospholipids were found in the same regions of the Alzheimer brain that show decreased glucose metabolism. Glucose utilization is an important measure of the brain's use of energy.

There is evidence to suggest that choline, a chemical necessary for the production of the neurotransmitter acetylcholine, is in short supply in the Alzheimer brain. (Acetylcholine is involved in learning and memory.) To compensate, the cell then extracts choline from PC in the cell membrane. This event, coupled with a basic defect in phospholipid metabolism, could leave cholinergic cells particularly vulnerable to damage and may account for the decreased activity of this important neurotransmitter in Alzheimer's disease. The investigators plan to continue their research to determine if phospholipid metabolism is impaired in membranes of cells outside of the central nervous system in

Alzheimer patients. If so, this finding might yield a diagnostic test for the disease, and may lead to new and more effective treatment.

Metabolic Abnormalities Found in Skin Cells

The search to discover why brain cells die in Alzheimer's disease has led scientists for some time to look at the intricate changes that take place within the walls of the cell.

At the Burke Rehabilitation Center in White Plains, New York, Dr. John P. Blass and his colleagues have found dramatic changes in the metabolic activity of skin cells taken from Alzheimer patients.

Several years ago, Dr. Blass suggested that the damage done by Alzheimer's disease may be most apparent in the brain, but can be seen in cells outside the brain as well. Skin tissue is easily accessible for research, and, if indeed Alzheimer's disease has a genetic element, it should be possible to see differences in the cells that make up the skin.

With this in mind, Dr. Blass and his colleagues took samples of skin fibroblasts (large cells common in developing or repairing tissue) from 18 Alzheimer patients and 18 age-matched controls. They then placed the cells in a special medium used to maintain and nourish nerve cells and looked at basic cell metabolism.

They found that skin cells grown in the specially developed culture began to look and behave like brain cells. Specifically, they began to produce proteins made by brain cells. Furthermore, those skin cells taken from the Alzheimer patients developed some of the abnormal tangled proteins that are characteristic of diseased brain tissue. They also found that addition of a chemical agent that blocked the cells' ability to use oxygen in metabolism could cause healthy skin cells to produce the Alzheimer-type abnormal proteins.

Dr. Blass and his colleagues speculate that such a change in brain cell metabolism may be occurring in Alzheimer's disease and may be due to abnormalities in the activities of the mitochondria, small units that play a critical role in all the metabolic activity that takes place within the cell. These abnormalities result in a loss of the cell's ability to function.

Scientists don't know whether the changes they see in the laboratory are similar to what might be happening in the living brain. Nonetheless, they are encouraged to find what may be an important clue to how Alzheimer's disease develops and, perhaps, a basis for future diagnostic tests.

Infectious Agent May Contribute to Alzheimer's Disease

After 20 years of research, evidence has emerged that Alzheimer's disease may be caused by an infectious agent. With grant support from NIA and the National Institute of Neurological Disorders and Stroke (NINDS), researchers at Yale University School of Medicine in New Haven, Connecticut appear to have successfully transmitted a blood-borne infectious substance from humans to laboratory animals. The agent, which results in a fatal brain disorder, produces brain pathology similar to that caused by Creutzfeldt-Jakob disease (CJD), a rare, progressive brain disease.

The research team, led by Dr. Elias E. Manuelidis, studied one known AD patient and 10 healthy members of families in which at least two close relatives had Alzheimer's disease. White blood cells drawn from these persons were specially prepared and then inoculated into the brains of hamsters.

Within one year of inoculation, material from five of these persons resulted in the development of characteristic CJD pathology in the hamsters. To verify the results, a second series of hamsters was reinoculated with material from the brains of the infected animals. In all instances, the animals who received the second series not only developed the disease, but contracted a more severe and rapidly progressive form.

According to Dr. Manuelidis, this study succeeded when all previous attempts to transmit Alzheimer's disease had failed because prior experiments were undertaken with tissue from persons in advanced stages of Alzheimer's disease. He has speculated that the titer (strength) of a virus can be very low or absent at the end stages of disease.

Because Alzheimer's disease is unique to humans, there is no animal that can serve as a suitable model for studying the disease. This may explain the lack of AD-type changes in the infected hamsters. If an infectious agent exists in the general population, the authors speculate that factors either in the environment or within the body (for example, the immune system or genes) could trigger the onset of dementing disease. NIA scientist Dr. Zaven Khachaturian and other leading experts in this field have proposed that several co-existing factors may be necessary to produce Alzheimer's disease. In the meantime, additional research will be necessary before we know for sure whether some cases of Alzheimer's disease have an infectious origin.

New Findings Focus on Genetic Markers In Alzheimer's Disease

A small percentage of persons with Alzheimer's disease have shown an autosomal dominant pattern of inheritance, meaning that children of a parent with the familial form of this disorder have a 50-50 chance of getting Alzheimer's disease. In 1987, scientists had identified a region on chromosome 21 in familial Alzheimer's disease that is responsible for production of the abnormal amyloid protein found in the Alzheimer brain. The risk to offspring of contracting the more common sporadic form of Alzheimer's disease is less clear. Onset for this form of the disease occurs later in life, typically after age 60.

Some investigators believe a genetic component also is present in the sporadic form because of the clusters of cases in families with late-onset disease. Using the gene location identified for familial Alzheimer's disease, Dr. Allen Roses and colleagues at the Duke University Alzheimer's Disease Research Center in Durham, North Carolina, attempted to establish a genetic linkage that would prove that most, if not all, cases of Alzheimer's disease are hereditary.

Examining the cells of affected members of 13 families with a familial pattern of inheritance, the investigators used the tools of molecular genetics to search for a chemical code to match this region of the suspect chromosome. In the 49 affected individuals tested, no linkage was found between sporadic cases and the genetic marker for familial Alzheimer's disease.

The Duke study suggests more than one cause of Alzheimer's disease; thus, the researchers will pursue their genetic linkage studies in hopes of locating the basic defect in the more common sporadic cases of Alzheimer's disease.

Genetic studies conducted at the University of Washington Alzheimer's Disease Research Center in Seattle not only confirmed the Duke results, but showed that the Alzheimer gene may not be on chromosome 21 after all. Dr. George Martin and colleagues at the University of Washington center found no linkage between familial Alzheimer's disease and the region of chromosome 21 that had been linked to the production of amyloid protein. Dr. Martin suggests that the earlier findings in this area may have resulted from misdiagnoses, which made familial Alzheimer's disease appear to be one homogeneous disease when in fact some disease process other than Alzheimer's may have been involved. They also suggest that Alzheimer's disease may involve more than one gene: In some cases the gene might be located on chromosomes 21, in other cases other chromosomes may be involved. Further research on autopsy-confirmed cases will greatly improve our ability to determine whether there are indeed subtypes of Alzheimer's disease and what their genetic origins are.

Investigations Continue on THA

Preliminary results soon will be available on the effect of the experimental drug THA, which may help control memory loss in some patients with Alzheimer's disease.

THA--or tetrahydroaminoacridine--is one of several drugs being tested as a treatment for Alzheimer patients. A study directed by Dr. Kenneth Davis of Mt. Sinai Medical Center in New York City and supported by the NIA, the Alzheimer's Disease and Related Disorders Association, and the Warner Lambert Company is taking place at 16 research facilities across the country. A total of 300 patients are being evaluated.

According to study co-director Dr. Leon Thal at the University of California in San Diego, preliminary results will be available as soon as the first 100 patients have completed the regimen, sometime in 1989. Depending on whether the drug proves to be clearly beneficial and safe in these 100 patients, the investigators will make recommendations to the NIA about whether to continue to the trial.

NIA-sponsored research on THA was temporarily suspended in the fall of 1987, when a review of records from the first 50 patients enrolled in the study revealed that 20 of them had developed toxic liver problems.

The NIA study was designed to learn more about the safety and the efficacy of THA. Early in the study, during the period when adverse effects were being assessed, the investigators found that elevated levels of liver enzymes were linked to high doses of the drug. The negative effect was reversed soon after the 20 patients stopped taking THA and the study was restarted in February 1988 with reduced dosages.

New Research Focuses on Growth and Repair in the Brain

The past two decades have been marked by major advances in the field of neuroscience. It was once thought that if the brain was damaged by disease or trauma, nothing could be done. Then scientists discovered that while brain cells may not be able to reproduce, they have the ability to repair themselves. Now scientists are beginning to find ways to treat brain injury by stimulating the brain to heal itself. Since Alzheimer's disease causes massive brain injury, such work has important implications for developing treatments, as well as future research in this field.

In the late 1970s, Dr. Carl W. Cotman demonstrated that nerve cells whose connections with other cells were severed could sprout new fibers so that the brain's circuitry was re-established. At about the same time, Dr. Paul Coleman and his colleagues at the University of Rochester in New York found that a similar recircuitry occurs in response to nerve cell loss in the aging brain. Dr. Cotman and his colleagues went on to discover that a number of changes take place in response to brain injury--blood vessels and glial cells that surround the nerve cells proliferate and small peptides--the building blocks of protein--accumulate at the site of the injury. These particular peptides, known as trophic factors, play an important role in the survival of injured cells.

At Georgetown University School of Medicine in Washington, D.C., Dr. Lawrence Kromer is conducting research on nerve growth factor (NGF), a peptide and one of several known trophic factors that works specifically on nerve cells. Scientists have demonstrated that NGF can influence the survival of a particular group of brain cells--the cholinergic cells--following injury. In a recent experiment, Dr. Kromer studied the possible benefit of injecting NGF directly into a damaged area of the brain.

Dr. Kromer took a group of rats and surgically cut the nerve cell projections that supplied acetylcholine to the brain's hippocampus. He then inserted a small tube into a cavity in the animals' brains and continuously injected NGF using a miniature pump.

In the control animals, only 20 percent of the injured cells were still alive two weeks after surgery. In the animals receiving NGF, on the other hand, 85 percent of the cells survived the trauma and had begun to form new connections within the hippocampus. According to Dr. Kromer, the nerve cells in the areas surrounding the infusion site were "rescued from cell death."

In a related study, Dr. Fred Gage and his colleagues at the University of California at San Diego used NGF to treat a group of animals suffering from age-associated memory impairment. In this study, infusion of NGF for four weeks resulted in a significant improvement in the animals' memory.

Scientists are optimistic that NGF or similar substances may someday be used to prevent cell loss in Alzheimer's and other degenerative diseases in which specific populations of brain cells are destroyed.

NIA Scientist Develops Procedure to Enhance Drug Delivery to the Brain

One obstacle to the treatment of Alzheimer's disease is the very effective blood-brain barrier, a system of tightly knit cells that forms a membrane around the blood vessels of the brain and permits only certain substances to cross from the blood into the brain. The passage of drugs into the brain is determined mainly by their "lipid solubility", or ability to dissolve in the fatty membrane covering the tiny blood vessels that nourish the brain. Water-soluble drugs and many large protein molecules cannot penetrate the blood-brain barrier.

NIA intramural investigators have been examining the structure and function of this protective barrier and have developed an osmotic procedure that temporarily modifies the barrier, enhancing delivery of drugs to the brain. This procedure is so named because it works through osmosis, the natural process by which a fluid passes through a membrane.

Reported by NIA's Dr. Stanley I. Rapoport in 1970, the osmotic procedure has been used to alter the blood-brain barrier in animals. While investigators have attempted to open the barrier using a variety of agents, Dr. Rapoport was one of the first to develop a safe and clinically useful method to gain access to the brain. In the procedure, a sugar solution is injected into one of the arteries that supplies blood to the brain. The solution disrupts the barrier for up to two hours during which time water-soluble and large protein molecules may gain access to the brain. The procedure, used in limited clinical trials by Dr. Edward A. Neuwelt at the Oregon Health Sciences University in Portland, has had dramatic success in the treatment of some malignant brain tumors that are normally resistant to chemotherapy. Use of chemotherapeutic agents in combination with the osmotic procedure has resulted in major tumor regression and prolonged patient survival. Dr. Rapoport's laboratory has also developed a method to estimate the accumulation of a drug in the brain. Because blood plasma and spinal fluid concentrations of drugs do not accurately represent their levels in the brain, this method is an important tool for evaluating the effectiveness of drugs used to treat central nervous system disorders, including Alzheimer's disease.

More recently, the NIA researchers have developed and patented a process to chemically modify drugs to increase their lipid solubility, and hence, their access to the brain.

While the investigators see their work as more immediately useful for the treatment of brain cancer and other fatal diseases that attack the central nervous system (for example, AIDS and rabies), they hope that these procedures will facilitate research on drugs for Alzheimer's disease, including those currently under investigation to restore lost neurotransmitter function.

Research Focuses on the Alzheimer Family

Research on Alzheimer's disease has shown that the patient is not the only victim. The disease places an often overlooked physical, financial, and emotional burden on the patient's spouse, child, or whoever provides day-to-day care. While a number of scientists are attempting to find out what causes Alzheimer's disease and how to treat it, others are looking for ways to help caregivers cope and to prevent caregiver "burnout."

At the Veterans Administration Medical Center in Palo Alto, California, NIA grantee Dr. Dolores Gallagher and her colleagues are conducting a 5-year study of the value of two different types of caregiver support groups.

Participants are asked to attend classes either in problem solving or life satisfaction, or are assigned to a control group. In the problem-solving classes, individuals are taught simple strategies for analyzing and resolving everyday problems. In the life-satisfaction classes, they learn to identify activities that they might enjoy and the means to do them. In both types of classes, they learn specific skills to help them cope with a variety of situations. Meetings are held weekly for two hours over 10 consecutive weeks.

To date, the investigators have worked with more than 100 individuals, more than half of whom care for people with Alzheimer's disease or some other brain impairment. In general, those who took either class were less depressed and felt better about themselves than those in the control group.

A variety of programs are becoming available to help the families of Alzheimer patients and frail older adults, but there is little information on relative merits of these. The programs include respite care (offering "time off" to caregivers on a temporary basis), formal counseling, support groups organized by caregivers, and support groups run by professionals, as in the Palo Alto program. Dr. Gallagher's approach is typical of the latter category in that participants receive emotional support as well as up-to-date medical information.

The investigators caution that their results are very preliminary. Future research may determine how the needs of Alzheimer families differ from others' needs and what type of support works best for an individual at various stages of disease.

New Treatment May Diminish Night Wandering

Finding ways to manage the symptoms of Alzheimer's disease is another way to help families cope. One of the most trying problems for Alzheimer patients and their families is nighttime wandering. Recently, clinical nurse researchers at the NIA may have found a way to help decrease this behavior.

In a pilot project, Sarah H. Young, R.N., and colleagues evaluated the use of "white noise" as a safe way to decrease night wandering in patients with moderate to advanced Alzheimer's disease. White noise is a slow, continuous, rhythmic, and monotonous sound of low intensity--such as that produced by a whirring fan or air conditioner--that can influence sleep patterns. For the past 18 years, white noise has been used successfully to induce sleep in research settings. In studies of newborn infants, investigators have used white noise to induce deeper, more stable sleep.

Ms. Young and her colleagues exposed eight Alzheimer patients to the sound of a slow, rolling surf for four nights over a 12-night observation period. From 9:00 p.m. until 7:00 a.m., the investigators watched the patients and made notes of their behavior every 30 minutes. They found that two of the eight subjects were significantly less agitated and restless during the treatment.

According to Ms. Young, this study needs to be replicated under more natural conditions (in the home or long-term care facility) to determine the usefulness of this technique. Since night wandering is a major contributor to caregiver fatigue, strategies for managing this problem might help delay institutionalization and enable persons with Alzheimer's disease to live longer in the community with their families.

Better Methods Needed to Detect Impaired Driving Ability Among Alzheimer Patients

Inevitably during the course of Alzheimer's disease families and patients ask the question: Should the patient drive?

A study conducted by NIA intramural scientist Dr. Robert Friedland showed that information is sorely lacking on Alzheimer patients as drivers. He found that while persons with Alzheimer's disease develop impaired judgment and may suffer vision and hearing loss related to the disease, this progression is gradual and varies markedly between individuals.

Dr. Friedland collected information through interviews with family members of 30 Alzheimer patients about the patients' driving abilities over a 5- to 10-year period. The scientist learned that although the rate of motor vehicle accidents was in fact higher among the patients, more than half of them had voluntarily surrendered their driving privileges, either on their own initiative or at the request of a relative. Neither the duration nor the severity of the disease was predictive of motor vehicle accidents in this group.

These preliminary findings, along with recent recommendations of the National Academy of Science's Transportation Research Board, suggest that much more information is needed on the driving abilities of older persons in general and Alzheimer patients in particular. The researchers recommended that specific tests be developed for screening older drivers to detect impairments in vision, hearing, cognition, and psychomotor skills that interfere with driving. Until the means are available to comprehensively assess each individual's abilities, the decision to stop driving--a very personal and far-reaching one--should be arrived at jointly by the individual and the family. The advice of a health professional can be invaluable when it becomes necessary to make that decision.

National Institute of Neurological Disorders and Stroke

As the principal supporter of neurological research in the United States, the National Institute of Neurological Disorders and Stroke is involved in the study of Alzheimer's disease. In laboratories, NINDS-supported scientists are pursuing basic studies of brain and brain cell abnormalities associated with this dementing illness; in clinical settings they are trying to improve the methods of diagnosis and treatment.

Studies Pursue Role of Neurotransmitters

NINDS grantee Dr. Joseph Coyle of The Johns Hopkins University School of Medicine in Baltimore, Maryland, is studying the mechanisms that regulate the production of acetylcholine, a brain chemical found at reduced levels in the brains of Alzheimer patients. Low levels of acetylcholine are linked to difficulties with memory, learning, attention span, and judgment--cognitive deficits that characterize Alzheimer's disease. Dr. Coyle tested the drug galanthamine, which inhibits an enzyme that breaks down acetylcholine, to see if it improved memory in mice. He found that the administration of galanthamine before a swimming maze test greatly improved the ability of the mice to remember how to solve the maze. Dr. Coyle's results suggest that galanthamine might be a useful agent for reversing certain cognitive deficits associated with the loss of acetylcholine-producing neurons.

Toward Improved Diagnosis

Alzheimer's disease is often difficult to distinguish from other cognition-impairing brain disorders. Yet early and accurate diagnosis is important in understanding and coping with the disease. NINDS grantee Dr. Miriam Aronson of Yeshiva University in New York City is addressing this problem by outlining behavioral profiles of older people with Alzheimer-type dementia. Dr. Aronson found that such patients have greater difficulty recalling objects than remembering locations. This finding, along with others that will complete the profile, may help clinicians differentiate Alzheimer's disease from other types of dementia.

Grantee Dr. W.H. Riege at the University of California, Los Angeles, and the Sepulveda Veterans Administration Hospital is studying patients whose diagnoses progressed from "questionable Alzheimer's" to "probable Alzheimer's" after one year. By following patients from suspected to more recognizable stages of Alzheimer's disease, and then comparing these patients with a group that did not progress to "probable Alzheimer's", Dr. Riege was able to document early, subtle differences in the two groups. He discovered that the first memory-related function to become impaired by Alzheimer's disease is the ability to answer questions decisively. Also, compared with healthy aged people, Alzheimer patients took longer to respond when asked to recognize words.

Another diagnostic tool may be developed from an already commonly used technology called the electroencephalogram (EEG), a non-invasive monitor of electrical activity in the brain. NINDS scientist Dr. Philip Sheridan reported that the EEG, which currently helps confirm the diagnosis of Alzheimer's disease by ruling out other causes of dementia, may also be useful in indicating which brain regions are affected by Alzheimer's disease in individual patients. Dr. Sheridan found a correlation among data on Alzheimer patients collected by three other NINDS intramural scientists: EEG recordings by Dr. Susumu Sato, positron emission tomography (PET) studies by Dr. Thomas Chase, and neuropsychological testing by Dr. Paul Fedio.

National Institute of Allergy and Infectious Diseases

Scientists from the National Institute of Allergy and Infectious Diseases are investigating whether Alzheimer's disease and scrapie, a rare, degenerative brain disease of sheep and goats, might be caused by a similar infectious agent or whether different agents might be acting in similar ways to destroy the brain.

Scientists Look at Scrapie as a Model of Alzheimer's Disease

For many years, intramural NIAID scientists Drs. Bruce Cheesebro, Richard Race and their colleagues have been carrying out some of the foremost research on scrapie. Scrapie is particularly important to researchers studying Alzheimer's disease because the latter disease has no true animal model.

Several years ago, the discovery in scrapie-infected tissue of large amounts of a particular protein, named prion protein (PrP), led some scientists to propose that PrP causes the animal disease. PrP is an unusual candidate for an infectious agent, however, because it is made up solely of protein and contains no genetic material. Since the PrP theory was proposed, NIAID's scientists have been designing experiments to help resolve this controversial question.

Accumulating evidence indicates that PrP probably is not the scrapie agent. Experiments have shown PrP to be a normal endogenous protein of brain and probably other tissues as well.

But scientists also have found that during scrapie infection, a modified form of PrP accumulates in the brain. It is not known whether the modification occurs as an insignificant result of the disease or the modification changes PrP from being harmless to being infectious. Some scientists have suggested that the alternate form of PrP may be the transmissible agent and the cause of scrapie.

Because it remains uncertain what role PrP plays in inducing scrapie disease, Drs. Cheesebro and Race and their colleagues in collaboration with NIAID grantee Dr. Michael Buchmeier of Scripps Clinic and Research Foundation in La Jolla, California, recently conducted the first direct experiment to test whether PrP is the agent of the disease. They transferred cloned (synthetic copies of) PrP DNA into mouse cells and then inoculated these cells into mice. The cells failed to transmit scrapie to susceptible mice, directly demonstrating that unmodified PrP is not the scrapie agent.

It is still possible, however, that a modified form of PrP is the disease agent or a component of it, or that PrP may be indirectly involved in causing the disease. Some evidence suggests that the observed aggregates of PrP might bind nonspecifically to a conventional infectious agent. If so, extensive clumping might change the apparent biophysical properties of the agent, thereby helping or hindering its infectivity.

Division of Research Resources

The Division of Research Resources' Biomedical Research Support (BRS) Program provides a pool of flexible funds to institutions heavily engaged in Public Health Service-funded research aimed at meeting particular research-related needs not usually covered by other grants.

In a study conducted at the University of California at Los Angeles Neuropsychiatric Institute with support from DRR and NIA, Dr. Gary Small found that the histocompatibility antigen HLA-A2 was present in a group of men who developed Alzheimer's disease before the age of 60. Histocompatibility antigens are proteins on the surface of cells. These proteins label the cells as being part of the body, distinguishing them from foreign materials. The HLA-A2 is a specific genetic marker found on the short arm of chromosome six. This chromosome is associated with a variety of neurological and immunological diseases.

Dr. Small's results indicate that blood tests for the presence of HLA-A2 may help identify men who are susceptible to early onset Alzheimer's disease. While the cause of Alzheimer's disease is unknown, some studies indicate that it progresses more rapidly in people who develop it before age 60.

The study involved 36 men and women with Alzheimer's disease some of whom began experiencing symptoms before age 60. Blood samples were analyzed for six different histocompatibility antigens associated with Alzheimer's disease in earler studies. Dr. Small and his colleagues found that HLA-A2 was present in all males with early onset Alzheimer's disease, a frequency significantly higher than that for the study's other groups.

The researchers believe that HLA-A2 may be helpful in identifying more homogenous subgroups of patients with Alzheimer's disease. This could help identify possible approaches to therapy that would lead to specific treatments.

Outlook

In 1988, the National Institutes of Health took a major step in support of Alzheimer's disease research with the formation of an NIH-wide Alzheimer's Disease Coordinating Committee, organized and chaired by the National Institute on Aging Office of Alzheimer's Disease Research.

In addition, the NIA announced the establishment of two new Alzheimer's Disease Research Centers, as well as a special group of awards for Leadership and Excellence in Alzheimer's Disease (LEAD). The LEAD awards, given this year to scientists at Duke University and Harvard Medical School, are designed to strengthen senior investigators' capabilities by providing up to 7 years of major funding support for their own research and for the development of outstanding junior investigators.

Also in 1988, the NIA and the Alzheimer's Disease and Related Disorders Association hosted a conference to discuss methods and problems in the development of patient registries for dementing diseases. The meeting brought together NIA-supported scientists, experts who have worked with other disease-related registries, and representatives of more than 15 state governments and special interest groups working on patient registries.

In the area of international research, the NIA and the World Health Organization Special Program for Research on Aging issued an announcement calling for cross-cultural investigations in the epidemiology of Alzheimer's disease and other dementias of later life. The announcement emphasized the need to examine the incidence, prevalence, and risk factors of Alzheimer's disease among various populations worldwide and to develop specialized tests to identify dementia in different cultures.

The Institute's Information Office laid the groundwork to establish a national Alzheimer's Disease Education Center in FY 89 by: 1) conducting a comprehensive search of lay literature on Alzheimer's disease; 2) developing a directory of organizations providing services to patients and families; and 3) developing a strategy plan for a national clearinghouse that will provide information on the disease, its consequences, potential treatments, and new research.

New research initiatives for the coming year include a major drive, in cooperation with the National Center for Nursing Research, to support research on the burden of Alzheimer caregivers; development of a tissue bank as a resource to scientists studying the biology and genetics of the disease; expansion of the NIA's ADRC program by three new centers; and expansion of NIH-supported research into the causes, diagnosis, and treatment of Alzheimer's disease.

These and other NIH programs on Alzheimer's disease are aimed at understanding the basic nature and causes of this disease and at better diagnosis, care, and treatment for the estimated 3 million Americans who suffer from it. The long-term reward may be a way to cure and possibly prevent Alzheimer's disease. The immediate payoff will be better care for patients and more hope for families.

ALZHEIMER DISEASE
Obligations

	1986	1987	1988	Estimate 1989	Estimate 1990
Public Health Service:					
National Institutes of Health:					
National Institute on Aging............	$32,938,000	$42,038,000	$47,734,000	$79,908,000	$82,764,000
National Heart, Lung and Blood Institute..	44,000	---	---	---	---
National Institute of Neurological Disorders and Stroke............	15,028,000	18,611,000	18,779,000	19,637,000	20,426,000
National Institute of Allergy and Infectious Diseases........	1,184,000	1,446,000	1,041,000	1,091,000	1,139,000
National Institute of Child Health and Human Development.....	91,000	583,000	671,000	715,000	750,000
National Eye Institute.............	490,000	---	---	---	---
National Institute of Environmental Health Sciences..............	312,000	327,000	575,000	596,000	616,000
Division of Research Resources.............	1,720,000	2,010,000	1,211,000	1,243,000	1,077,000
National Center for Nursing Research......	---	229,000	230,000	2,100,000	2,100,000
Office of the Director, NIH....... 1/	---	---	66,000	91,000	94,000
TOTAL, NIH...........	51,807,000	65,244,000	70,607,000	105,381,000	108,966,000

	1986	1987	1988	Estimate 1989	Estimate 1990
Health Care Financing Administration	---	523,308	77,904	4,200,000	12,200,0002/
Alcohol, Drug Abuse and Mental Health Administration	8,600,000	10,102,000	14,031,000	16,500,000	17,100,000
TOTAL, PHS..........	60,407,000	75,869,308	84,715,904	126,081,000	138,266,000
Office of Human Development Administration on Aging	627,021	1,240,431	1,899,874	600,000	600,000
TOTAL, DHHS..........	61,034,021	77,109,739	86,615,778	126,681,000	138,866,000

1/ Represents funds awarded through BIDs for the Research Centers and Minority Institutions program.

2/ Includes funds for the national demonstration project.

f age must submit to be

Letter to Fanny Burney.

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pistle to Simpson: Postscript.

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rs they knowed sunthin', tu.
The Biglow Papers: Ser. ii,
dell.

-tide standeth still; in Man-
th soft and slow;
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TON, *The Kasîdah.* Pt. iii, st.

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heir sweetness.
L, *A Thought Suggested by*

age to rail at the pleasures

VRE, *The Basset Table.* Act i.

old men are fools; but old
en are fools.
All Fools. Act v, sc. 1, l. 292.
CAMDEN (*Remains,* 1605)
slightly different form, as a
etcalf.

sweet, if it is made like
s burdensome if it be like
ectus homini, quæ parilis
ta est gravior, quæ similis

s [?], *Septem Sapientum*

ty of the budding-time of
the harvest-time of old
florentis ætatis, prudentia

te. Ch. vi, sec. 20.

uth to ruminating age.
ress of Error, l. 24.

t has not been lived youth
n battle, old age in medita-

BLUNT, *The Perfect Life.*

, but true;—
d Youth should do.
, *Sales Attici.*

1
For just as I approve of a young man in whom there is a touch of age, so I approve of the old man in whom there is some of the flavor of youth. He who strives thus to mingle youthfulness and age may grow old in body, but old in spirit he will never be. (Ut enim adulescentem in quo est senile aliquid, sic senem in quo est aliquid adulescentis probo, quod qui sequitur, corpore senex esse poterit, animo numquam erit.)
CICERO, *De Senectute.* Ch. xi, sec. 38.

The true way to render age vigorous is to prolong the youth of the mind.
MORTIMER COLLINS, *The Village Comedy,* i. 56.

If within the old man there is not a young man, —within the sophisticated, one unsophisticated, —then he is but one of the devil's angels.
H. D. THOREAU, *Journal,* 26 Oct., 1853.

2
Age, out of heart, impatient, sighed:—
"I ask what will the *Future* be?"
Youth laughed contentedly, and cried:—
"The future leave to me!"
FLORENCE EARLE COATES, *Youth and Age.*

3
Youth beholds happiness gleaming in the prospect. Age looks back on the happiness of youth, and, instead of hopes, seeks its enjoyment in the recollections of hope.
S. T. COLERIDGE, *Table Talk: Youth and Age.*

Youth with swift feet walks onward in the way;
The land of joy lies all before his eyes;
Age, stumbling, lingers slowly day by day,
Still looking back, for it behind him lies.
Fail not for sorrow, falter not for sin,
But onward, upward, till the goal ye win!
FRANCES ANNE KEMBLE, *Lines to the Young Gentlemen Leaving Lenox Academy.*

4
'Tis well to give honour and glory to Age,
With its lessons of wisdom and truth;
Yet who would not go back to the fanciful page,
And the fairy tale read but in youth?
ELIZA COOK, *Stanzas,* l. 1.

5
Read, ye that run, the awful truth,
With which I charge my page;
A worm is in the bud of youth,
And at the root of age.
COWPER, *Stanzas Subjoined to the Yearly Bill of Mortality of the Parish of All Saints, Northampton, A. D. 1787.*

6
When youth is fallen, there's hope the young may rise,
But fallen age for ever hopeless lies.
GEORGE CRABBE, *The Borough.* Letter 21.

7
The spring, like youth, fresh blossoms doth produce,
But autumn makes them ripe and fit for use:
So Age a mature mellowness doth set
On the green promises of youthful heat.
SIR JOHN DENHAM, *Cato Major.* Pt. iv, l. 47.

8
Youth is a blunder; Manhood a struggle; Old Age a regret.
BENJAMIN DISRAELI, *Coningsby.* Bk. iii, ch. 1.

The blunders of youth are preferable to the triumphs of manhood, or the success of old age.
BENJAMIN DISRAELI, *Lothair.* Ch. 31.

The disappointment of Manhood succeeds to the delusion of Youth; let us hope that the heritage of Old Age is not despair.
BENJAMIN DISRAELI, *Vivian Grey.* Bk. viii, ch. 4.

9
O Youth must bleed and measure
The days that span the sea—
But Age will keep for pleasure
What Youth thought misery.
GLENN WARD DRESBACH, *Youth and Age.*

10
For all their courteous words they are not one,
This Youth and Age, but civil strangers still;
Age with the best of all his seasons done,
Youth with his face towards the upland hill.
JOHN DRINKWATER, *Olton Pools: Dedication.*

11
When youth is spent, a penny at a fair,
The old men tell of the bargains there.
There was this and that for a price and a wage,
But when they came away they had all bought age.
LOUISE DRISCOLL, *Bargain.*

12
In youth, we clothe ourselves with rainbows, and go as brave as the zodiac. In age, we put out another sort of perspiration,—gout, fever, rheumatism, caprice, doubt, fretting, avarice.
EMERSON, *Conduct of Life: Fate.*

Youth is everywhere in place. Age, like woman, requires fit surroundings.
EMERSON, *Society and Solitude: Old Age.*

13
An angelic boyhood becomes a satanic old age. (Angelicus juvenis senibus satanizat in annis.)
ERASMUS, *Adagia.* Quoted as a proverb invented by Satan.

It is a common proverb, young saint old devil.
UNKNOWN, *Dives et Pauper.* Fo. 34. (1493)

Fie upon such as say, young saints, old devils: it is no doubt a devilish and damnable saying.
ROBERT GREENE, *Works.* Vol. x, p. 239. (1592)

Of a young hermit, an old devil. (De jeune hermite, vieil diable.)
RABELAIS, *Works.* Vol. ii. Quoted as a proverb.

14
If youth but knew; if old age could! (Si jeunesse savoit, si vieillesse pouvoit.)
HENRI ÉTIENNE, *Les Prémices.*

For the affection of young ladies is of as rapid growth as Jack's beanstalk, and reaches up to the sky in a night.
THACKERAY, *Vanity Fair*. Ch. iv.

1
Yet would I not be of such wintry bareness
But that some leaf of your regard should hang
Upon my naked branches.
WORDSWORTH, *The Excursion*. Bk. iii, l. 491.

AFFLICTION, see Adversity

AGE

I—AGE: Age and Youth

2
Young men soon give, and soon forget, affronts;
Old age is slow in both.
ADDISON, *Cato*. Act ii, sc. 5.

3
Age is more just than youth. (*Γῆρας γὰρ ἥβης ἐστὶν ἐνδικώτερον.*)
ÆSCHYLUS, *Fragments*. Frag. 228.

4
He carries an old mind with a youthful body. (*Γέροντα τὸν νοῦν, σάρκα δ' ἡβῶσαν φύει.*)
ÆSCHYLUS, *Seven Against Thebes*, l. 622.

A man that is young in years may be old in hours, if he have lost no time.
FRANCIS BACON, *Essays: Of Youth and Age*.

Nature is full of freaks, and now puts an old head on young shoulders, and then a young heart beating under fourscore winters.
EMERSON, *Society and Solitude: Old Age*.

Young in limbs, in judgement old.
SHAKESPEARE, *The Merchant of Venice*. Act ii, sc. 7, l. 71.

I never knew so young a body with so old a head.
SHAKESPEARE, *The Merchant of Venice*. Act iv, sc. 1, l. 163.

5
Old age is more suspicious than the free
And valiant heart of youth, or manhood's firm,
Unclouded reason.
MATTHEW ARNOLD, *Merope*, l. 156.

6
The child's toys and the old man's reasons
Are the fruits of the two seasons.
WILLIAM BLAKE, *Auguries of Innocence*.

7
Young, all lay in dispute; I shall know, being old.
ROBERT BROWNING, *Rabbi Ben Ezra*. St. 15.

8
Let age approve of youth, and death complete the same!
ROBERT BROWNING, *Rabbi Ben Ezra*. Last line.

9
It was an old, old, old, old lady,
And a boy who was half-past three.
H. C. BUNNER, *One, Two, Three*.

10
The arrogance of age must submit to be taught by youth.
EDMUND BURKE, *Letter to Fanny Burney*.

The rev'rend grey-beards rav'd and storm'd,
That beardless laddies
Should think they better were inform'd
Than their auld daddies.
ROBERT BURNS, *Epistle to Simpson: Postscript*.

Young folks are smart, but all ain't good thet's new,
I guess the gran'thers they knowed sunthin', tu.
J. R. LOWELL, *The Biglow Papers:* Ser. ii, *Mason and Slidell*.

11
Yes, Life in Youth-tide standeth still; in Manhood streameth soft and slow;
See, as it nears th' abysmal goal how fleet the waters flash and flow!
SIR RICHARD BURTON, *The Kasîdah*. Pt. iii, st. 28.

The more we live, more brief appear
Our life's succeeding stages;
A day to childhood seems a year,
And years like passing ages. . . .
Heaven gives our years of fading strength
Indemnifying fleetness;
And those of Youth, a seeming length,
Proportioned to their sweetness.
THOMAS CAMPBELL, *A Thought Suggested by the New Year*.

12
'Tis the defect of age to rail at the pleasures of youth.
SUSANNAH CENTLIVRE, *The Basset Table*. Act i.

13
Young men think old men are fools; but old men *know* young men are fools.
GEORGE CHAPMAN, *All Fools*. Act v, sc. 1, l. 292. (1605) WILLIAM CAMDEN (*Remains*, 1605) quotes this, in slightly different form, as a saying of Dr. Metcalf.

14
Old age may be sweet, if it is made like youth; but youth is burdensome if it be like old age. (Grata senectus homini, quæ parilis juventæ; Illa juventa est gravior, quæ similis senectæ.)
CHILON. (AUSONIUS [?], *Septem Sapientum Sententiæ*, l. 41.)

15
Rashness is a quality of the budding-time of youth, prudence of the harvest-time of old age. (Temeritas est florentis ætatis, prudentia senescentis.)
CICERO, *De Senectute*. Ch. vi, sec. 20.

From thoughtless youth to ruminating age.
COWPER, *The Progress of Error*, l. 24.

No life is perfect that has not been lived youth in feeling, manhood in battle, old age in meditation.
WILFRID SCAWEN BLUNT, *The Perfect Life*.

Old the proverb, old, but true;—
Age should think, and Youth should do.
D'ARCY THOMPSON, *Sales Attici*.

If I were a man and a young man,
And knew what I know today.
Ella Wheeler Wilcox.

1
If youth knew what age would crave,
It would both get and save.
Thomas Fuller, *Gnomologia*. No. 6085.

While strength and years permit, endure labor; soon bent old age will come with silent foot. (Dum vires annique sinunt, tolerate labores. Jam veniet tacito curva senecta pede.)
Ovid, *Ars Amatoria*. Bk. ii, l. 669.

When we are young we lay up for old age; when we are old we save for death.
La Bruyère, *Les Caractères: Des Biens de Fortune*.

2
Old men have in some degree their reprisals upon younger, by making nicer observations upon them.
Lord Halifax, *Works*, p. 256.

3
Struggle and turmoil, revel and brawl—
Youth is the sign of them, one and all.
A smoldering hearth and a silent stage—
These are a type of the world of Age.
W. E. Henley, *Ballad of Youth and Age: Envoy*.

4
Boys must not have th' ambitious care of men,
Nor men the weak anxieties of age.
Horace, *Ars Poetica*. l. 176. (Dillon, tr.)

5
'Tis time for thee to be gone, lest, when you have drunk too freely, youth mock and jostle you off the stage, playing the wanton with better grace. (Tempus abire tibi est, ne potum largius æquo Rideat et pulset lasciva decentius ætas.)
Horace, *Epistles*. Bk. ii, epis. 2, l. 215.

"Let me not live," quoth he,
"After my flame lacks oil, to be the snuff
Of younger spirits."
Shakespeare, *All's Well that Ends Well*. Act. i, sc. 2, l. 58.

The luck will turn. . . . Presently the younger generation will come knocking at my door.
Ibsen, *The Master Builder*. Act i.

As newer comers crowd the fore,
We drop behind—
We who have laboured long and sore
Times out of mind,
And keen are yet, must not regret
To drop behind.
Thomas Hardy, *The Superseded*.

6
All the world's a mass of folly,
Youth is gay, age melancholy:
Youth is spending, age is thrifty,
Mad at twenty, cold at fifty;
Man is nought but folly's slave,
From the cradle to the grave.
W. H. Ireland, *Of the Folly of all the World*.

7
Your old men shall dream dreams, your young men shall see visions.
Old Testament: Joel, ii, 28.

Youth lives on hope, old age on remembrance. (La jeunesse vit d'espérance, la vieillesse de souvenir.)
Unknown. A French proverb.

8
The conversation of the old and the young ends generally with contempt or pity on either side.
Samuel Johnson, *The Rambler*. No. 69.

9
Power pleases the violent and proud; wealth delights the placid and the timorous. Youth therefore flies at power, and age grovels after riches.
Samuel Johnson, *Works*. Vol. x, p. 431.

10
Young men differ in various ways, but old men all look alike. (Plurima sunt juvenum discrimina, . . . una senum facies.)
Juvenal, *Satires*. Sat. x, l. 196.

11
Around the child bend all the three
Sweet Graces—Faith, Hope, Charity.
Around the man bend other faces—
Pride, Envy, Malice are his Graces.
Walter Savage Landor, *Around the Child*.

12
He who hath braved Youth's dizzy heat
Dreads not the frost of Age.
Walter Savage Landor, *To Age*.

13
And boasting youth, and narrative old age,
Their pleas were diff'rent, their request the same;
For good and bad alike are fond of fame.
Pope, *The Temple of Fame*, l. 291.

14
Where the older age sins, the younger is led astray. (Quod ætas vitium posuit, ætas auferet.)
Publilius Syrus, *Sententiæ*. No. 557.

Where old age is evil, youth can learn no good.
John Ray, *English Proverbs*.

15
To love is natural in a young man, a crime in an old one. (Amare juveni fructus est, crimen seni.)
Publilius Syrus, *Sententiæ*. No. 29.

Who early loves, though young, is wise—
Who old, though grey, a fool.
Cowper, *Upon a Venerable Rival*.

Youth is the proper time for love,
And age is virtue's season.
George Granville, *Corinna*.

16
They who would be young when they are old, must be old when they are young.
John Ray, *English Proverbs*.

17
Of young men die many; of old escape not any.
John Ray, *English Proverbs*.

1
O, roses for the flush of youth,
And laurel for the perfect prime;
But pluck an ivy branch for me,
Grown old before my time.
Christina Rossetti, *Song*.

2
The young man who has not wept is a savage, and the old man who will not laugh is a fool.
George Santayana, *Dialogues in Limbo*.

3
A very riband in the cap of youth,
Yet needful too; for youth no less becomes
The light and careless livery that it wears
Than settled age his sables and his weeds,
Importing health and graveness.
Shakespeare, *Hamlet*. Act iv, sc. 7, l. 78.

4
Thou art thy mother's glass, and she in thee
Calls back the lovely April of her prime:
So thou through windows of thine age shall see,
Despite of wrinkles this thy golden time.
Shakespeare, *Sonnets*. No. iii.

5
Crabbed age and youth cannot live together:
Youth is full of pleasance, age is full of care;
Youth like summer morn, age like winter weather;
Youth like summer brave, age like winter bare.
Youth is full of sport, age's breath is short;
Youth is nimble, age is lame;
Youth is hot and bold, age is weak and cold;
Youth is wild, and age is tame.
Age, I do abhor thee; youth, I do adore thee.
Shakespeare [?], *The Passionate Pilgrim*, l. 157.

6
Youth is the time for the adventures of the body, but age for the triumphs of the mind.
Logan Pearsall Smith, *On Reading Shakespeare*, p. 36.

7
In the days of my youth I remembered my God,
And He hath not forgotten my age.
Southey, *The Old Man's Comforts*.

8
All sorts of allowances are made for the illusions of youth; and none, or almost none, for the disenchantments of age.
R. L. Stevenson, *Virginibus Puerisque: Crabbed Age and Youth*.

When an old gentleman waggles his head and says: "Ah, so I thought when I was your age," it is not thought an answer at all if the young man retorts: "My venerable sir, so shall I most probably think when I am yours." And yet the one is as good as the other.
R. L. Stevenson, *Virginibus Puerisque: Crabbed Age and Youth*.

Age may have one side, but assuredly Youth has the other. There is nothing more certain than that both are right, except perhaps that both are wrong.
R. L. Stevenson, *Virginibus Puerisque: Crabbed Age and Youth*.

9
A full, busy youth is your only prelude to a self-contained and independent age; and the muff inevitably develops into the bore.
R. L. Stevenson, *Virginibus Puerisque. Crabbed Age and Youth*.

10
A young man will be wiser by and by;
An old man's wit may wander ere he die.
Tennyson, *The Coming of Arthur*, l. 403.

11
The tears of the young who go their way,
Last a day;
But the grief is long of the old who stay.
J. T. Trowbridge, *A Home Idyll* Pt. xv.

12
Youth is confident, manhood wary, and old age confident again.
Martin Farquhar Tupper, *Proverbial Philosophy: Of Experience*.

13
Youth, large, lusty, loving—youth full of grace, force, fascination,
Do you know that Old Age may come after you with equal grace, force, fascination?
Walt Whitman, *Youth, Day, Old Age and Night*.

14
A happy youth, and their old age
Is beautiful and free.
Wordsworth, *The Fountain*, l. 43.

II—Age: Middle Age

See also Birth: Birthday

15
Of all the barbarous middle ages, that
Which is most barbarous is the middle age
Of man; it is—I really scarce know what;
But when we hover between fool and sage.
Byron, *Don Juan*. Canto xii, st. 1.

16
Since more than half my hopes came true
And more than half my fears
Are but the pleasant laughing-stock
Of these my middle years:— . . .
Shall I not bless the middle years?
Not I for youth repine
While warmly round me cluster lives
More dear to me than mine.
Sarah N. Cleghorn, *Contented at Forty*.

17
In the middle of the journey of our life. (Nel mezzo del cammin di nostra vita.)
Dante, *Inferno*. Canto i, l. 1.

Thyself no more deceive, thy youth hath fled.
Petrarch, *To Laura in Death*. Sonnet 82.

18
So take the hint, the hands of Time
Are pointing, not unkindly,
Back to the hills we used to climb

While prospects beckoned blindly.
LAURENCE HOUSMAN, *Farewell to Town.*

The pools of art and memory keep
Reflections of our fallen towers,
And every princess there asleep,
Whom once we kissed, is always ours.
E. B. C. JONES, *Middle-Age.*

1 Sweet is the infant's waking smile,
And sweet the old man's rest—
But middle age by no fond wile,
No soothing calm is blest.
JOHN KEBLE, *The Christian Year: St. Philip and St. James.* St. 3.

I may not be Meethosalem, but I am not a child in arms.
DICKENS, *Dombey and Son.* Bk. i, ch. 44.

2 Of middle age the best that can be said is that a middle-aged person has likely learned how to have a little fun in spite of his troubles.
DON MARQUIS, *The Almost Perfect State.*

3 Let us, then, love the perfect day,
The twelve o'clock of life, and stop
The two hands pointing to the top,
And hold them tightly while we may.
JOAQUIN MILLER, *The Sea of Fire.* Canto xxiii.

4 Thou'lt find thy Manhood all too fast—
Soon come, soon gone! and age at last
A sorry *breaking-up!*
THOMAS MOORE, *Ode: Clapham Academy.*

5 To be interested in the changing seasons is, in this middling zone, a happier state of mind than to be hopelessly in love with spring.
GEORGE SANTAYANA, *Little Essays,* p. 277.

6 On his bold visage middle age
Had slightly press'd its signet sage,
Yet had not quench'd the open truth
And fiery vehemence of youth;
Forward and frolic glee was there,
The will to do, the soul to dare.
SCOTT, *Lady of The Lake.* Canto i, st. 21. (1810)

Age has now
Stamped with its signet that ingenuous brow.
SAMUEL ROGERS, *Human Life.* (1819)

7 Your lordship, though not clean past your youth, hath yet some smack of age in you, some relish of the saltness of time.
SHAKESPEARE, *II Henry IV.* Act i, sc. 2, l. 108.

8 Pass, thou wild heart,
Wild heart of youth that still
Hast half a will
To stay.
I grow too old a comrade, let us part:
Once he sang of summer,
Nothing but the summer;
Now he sings of winter,
Of winter bleak and drear;
Just because there's fallen
A snowflake on his forehead
He must go and fancy
'Tis winter all the year!
THOMAS BAILEY ALDRICH, *A Snowflake.*

9 Among the peaceful harvest days,
An Indian Summer comes at last!
ADELINE D. T. WHITNEY, *Equinoctial.*

10 Ho, pretty page with the dimpled chin
That never has known the barber's shear,
All your wish is woman to win,
This is the way that boys begin,—
Wait till you come to Forty Year.

Forty times over let Michaelmas pass,
Grizzling hair the brain doth clear,—
Then you know a boy is an ass,
Then you know the worth of a lass,
Once you have come to Forty Year.
THACKERAY, *The Age of Wisdom.*

Forty years on, growing older and older,
Shorter in wind and in memory long,
Feeble of foot and rheumatic of shoulder,
What will it help you that once you were young?
UNKNOWN, *Harrow School Song.*

11 Be wise with speed;
A fool at forty is a fool indeed.
YOUNG, *Love of Fame.* Satire ii, l. 281.

He who at fifty is a fool
Is far too stubborn grown for school.
NATHANIEL COTTON, *Slander.*

12 A boy may still detest age,
But as for me I know
A man has reached his best age
At forty-two or so.
R. C. LEHMANN, *Middle Age.*

III—Age: Old Age

13 To know how to grow old is the master-work of wisdom, and one of the most difficult chapters in the great art of living.
AMIEL, *Journal,* 21 Sept., 1874.

Few people know how to be old. (Peu de gens savent être vieux.)
LA ROCHEFOUCAULD, *Maximes.* No. 423.

14 Age has crept upon thee unperceived, nor canst thou call back the days that are gone. (Obrepsit non intellecta senectus Nec revocare potes, qui periere, dies.)
AUSONIUS, *Epigrams.* No. xxxiv, l. 3.

Whilst we drink, and call for garlands, for perfumes, and for maidens,

(Dum bibimus, dum serta unguenta puellas
Poscimus, obrepit non intellecta senectus.)
JUVENAL, *Satires.* Sat. ix, l. 128.

But on us both did haggish age steal on.
SHAKESPEARE, *All's Well that Ends Well.* Act i, sc. 2, l. 29.

For Age, with stealing steps,
Hath clawed me with his clutch.
THOMAS VAUX, *The Aged Lover Renounceth Love* (c. 1550). Quoted by Shakespeare, *Hamlet.* Act v, sc. 1, l. 79.

Old age comes on apace to ravage all the clime.
JAMES BEATTIE, *The Minstrel.* Bk. i, st. 25.

1 I am too old, and the seas are too long, for me to double the Cape of Good Hope.
FRANCIS BACON, *Memorial of Access.*

Age will not be defied.
BACON, *Essays: Of Regimen of Health.*

2 What's a man's age? He must hurry more, that's all;
Cram in a day what his youth took a year to hold.
ROBERT BROWNING, *The Flight of the Duchess.*

I am long on ideas, but short on time. I expect to live to be only about a hundred.
THOMAS A. EDISON. (*Golden Book,* April, 1931.)

3 This I know without being told,
'Tis time to live as I grow old.
'Tis time short pleasures now to take,
Of little Life the best to make,
And manage wisely the last stake.
ABRAHAM COWLEY, *Age.*

4 Age is like love, it cannot be hid.
THOMAS DEKKER, *Fortunatus.* Act ii, sc. 1.

5 Few envy the consideration enjoyed by the oldest inhabitant.
EMERSON, *Society and Solitude: Old Age.*

We do not count a man's years, until he has nothing else to count.
EMERSON, *Society and Solitude: Old Age.*

6 It is time to be old, To take in sail.
EMERSON, *Terminus.*

7 Sir, you shall taste my *anno domini.*
FARQUHAR, *The Beaux' Stratagem.* Act i, sc. 1.

8 Old and well stricken in age.
Old Testament: Genesis, xviii, 11.

9 And if I should live to be
The last leaf upon the tree
In the spring,
Let them smile, as I do now,
At the old forsaken bough
Where I cling.
OLIVER WENDELL HOLMES, *The Last Leaf.*

10 Age is rarely despised but when it is contemptible.
SAMUEL JOHNSON, *The Rambler.* No. 50.

11 Is age a sorrow, then, too great to share?
Or to be old, perhaps, is not to care.
EDWARD D. KENNEDY, *Strange, Is It Not?*

12 We dread old age, yet how few attain it! . . . We hope to grow old and we dread old age; that is to say, we love life and flee from death. (L'on espère de vieillir, et l'on craint la vieillesse.)
LA BRUYÈRE, *Les Caractères.* Pt. xi.

Every man desires to live long; but no man would be old.
SWIFT, *Thoughts on Various Subjects.*

All would live long, but none would be old.
BENJAMIN FRANKLIN, *Poor Richard,* 1749.

13 Age loves to give good precepts to console itself for being no longer able to give bad examples. (Les vieillards aiment à donner de bons préceptes, pour se consoler de n'être plus en état de donner de mauvais exemples.)
LA ROCHEFOUCAULD, *Maximes.* No. 93.

14 In growing old, one grows more foolish and more wise. (En vieillissant, on devient plus fou et plus sage.)
LA ROCHEFOUCAULD, *Maximes.* No. 210. The shorter proverbial form is, "Old age makes us wiser and more foolish."

15 For we are old, and on our quick'st decrees
The inaudible and noiseless foot of Time
Steals ere we can effect them.
SHAKESPEARE, *All's Well that Ends Well.* Act v, sc. 3, l. 40.

16 I confess that I am old; Age is unnecessary.
SHAKESPEARE, *King Lear.* Act ii, sc. 4, l. 156.

I am declined Into the vale of years.
SHAKESPEARE, *Othello.* Act iii, sc. 3, l. 265.

17 Give me a staff of honour for mine age,
But not a sceptre to control the world.
SHAKESPEARE, *Titus Andronicus.* Act i, sc. 1, l. 198.

18 Old men and comets have been reverenced for the same reason: their long beards, and pretences to foretell events.
JONATHAN SWIFT, *Works.* Vol. iii, p. 409.

The older I grow the more I distrust the familiar doctrine that age brings wisdom.
H. L. MENCKEN, *Prejudices.* Ser. iii, p. 311.

IV—Age: Senility

19 Everyone knows that old men are twice boys. (*Ἐγὼ δέ γ' ἀντείποιμ' ἂν ὡς δὶς παῖδες οἱ γέροντες.*)
ARISTOPHANES, *The Clouds,* l. 1417.

Old men are children for the second time. (Δὶς παῖδες οἱ γέροντες.)
Menander, *Xera: Fragment.*

Once a man reaches the witless stage, without senses or mentality, they say that he has grown a child again. (Senex quom extemplo est, jam nec sentit nec sapit, Aiunt solere eum rusum repuerascere.)
Plautus, *Mercator,* l. 295. (Act ii, sc. 2.)

Old men are twice children.
Thomas Randolph, *Jealous Lovers,* iii, 6.

An old man is twice a child.
Shakespeare, *Hamlet.* Act ii, sc. 2, l. 404. Taylor, *The Old, Old, Very Old Man.*

1
Old Age, a second child, by Nature curst,
With more and greater evils than the first:
Weak, sickly, full of pains, in every breath
Railing at life and yet afraid of death.
Charles Churchill, *Gotham.* Bk. i, l. 215.

2
Senile debility, usually called "dotage," is a characteristic, not of all old men, but only of those who are weak in mind and will. (Ista senilis stultitia, quæ deliratio appelari solet, senum levium est, non omnium.)
Cicero, *De Senectute.* Ch. xi, sec. 36.

3
The ruins of himself! now worn away
With age, yet still majestic in decay.
Homer, *Odyssey.* Bk. xxiv, l. 271. (Pope, tr.)

And a crook is in his back,
And a melancholy crack
In his laugh.
Oliver Wendell Holmes, *The Last Leaf.*

A poor, weak, palsy-stricken, churchyard thing.
Keats, *The Eve of St. Agnes.* St. 18.

4
On his last legs.
Thomas Middleton, *The Old Law.* Act v, sc. 1.

Went on three feet, and sometimes crept on four,
His withered fist still knocking at death's door.
Thomas Randolph, *Mirror for Magistrates: Old Age.*

5
Last scene of all,
That ends this strange, eventful history,
Is second childishness and mere oblivion,
Sans teeth, sans eyes, sans taste, sans everything.
Shakespeare, *As You Like It.* Act ii, sc. 7, l. 163.

6
Nature in you stands on the very verge
Of her confine.
Shakespeare, *King Lear.* Act ii, sc. 4, l. 149.

A poor, infirm, weak, and despised old man.
Shakespeare, *King Lear.* Act iii, sc. 2, l. 20.

Palsied eld.
Shakespeare, *Measure for Measure.* Act iii, sc. 1, l. 36.

The lean and slippered pantaloon.
Shakespeare, *As You Like It.* Act ii, sc. 7, l.

The oldest man he seemed that ever wore grey hairs.
Wordsworth, *Resolution and Independence.*

V—Age: Facing the Sunset

7
Beyond the ever and the never,
I shall be soon.
Love, rest, and home!
Sweet hope!
Lord, tarry not, but come.
Horatius Bonar, *Beyond the Smiling and the Weeping.*

Abide with me, fast falls the eventide;
The darkness deepens; Lord, with me abide.
Henry Francis Lyte, *Eventide.*

8
I stand upon the summit of my years;
Behind, the toil, the camp, the march, the strife,
The wandering and the desert; vast, afar,
Beyond this weary way, behold! the Sea!
Joseph Brownlee Brown, *Thalatta! Thalatta!*

9
And he died in a good old age, full of days, riches, and honour.
Old Testament: I Chronicles, xxix, 28.

10
Drawing near her death, she sent most pious thoughts as harbingers to heaven; and her soul saw a glimpse of happiness through the chinks of her sickness-broken body.
Thomas Fuller, *Life of Monica.* Bk. i, ch. 2.

To vanish in the chinks that Time has made.
Samuel Rogers, *Italy: Pæstum,* l. 59. (c. 1820)

No, no; he cannot long hold out these pangs;
The incessant care and labour of his mind
Hath wrought the mure, that should confine it in,
So thin that life looks through and will break out.
Shakespeare, *II Henry IV.* Act iv, sc. 4, l. 117. (1597)

The soul's dark cottage, batter'd and decay'd,
Lets in new light through chinks that Time hath made;
Stronger by weakness, wiser men become,
As they draw near to their eternal home.
Leaving the old, both worlds at once they view,
That stand upon the threshold of the new.
Edmund Waller, *Of the Last Verses in the Book.* (1645)

The robe of flesh wears thin, and with the years
God shines through all things.
John Buchan, *The Wise Years.*

11
So peaceful shalt thou end thy blissful days,
And steal thyself from life by slow decays.
Homer, *Odyssey.* Bk. xi, l. 164. (Pope, tr.)

An age that melts with unperceiv'd decay,
And glides in modest innocence away.
Samuel Johnson, *Vanity of Human Wishes,* l. 293.

Bends to the grave with unperceiv'd decay,
While Resignation gently slopes the way;

And, all his prospects bright'ning to the last,
His Heaven commences ere the world be pass'd.
Goldsmith, *The Deserted Village,* l. 109.

1
When he's forsaken, Wither'd and shaken,
What can an old man do but die?
Thomas Hood, *Ballad: Spring It Is Cheery.*

2
Superfluous lags the vet'ran on the stage,
Till pitying Nature signs the last release,
And bids afflicted worth retire to peace.
Samuel Johnson, *Vanity of Human Wishes,* l. 308.

3
I strove with none, for none was worth my strife.
Nature I loved, and, next to Nature, Art;
I warmed both hands before the fire of Life;
It sinks, and I am ready to depart.
W. S. Landor, *The Last Fruit of an Old Tree: Dedication.*

4
For you the To-come,
But for me the Gone-by;
You are panting to live,
I am waiting to die.
Richard Le Gallienne, *An Old Man's Song.*

5
The course of my long life hath reached at last,
In fragile bark o'er a tempestuous sea,
The common harbor, where must rendered be,
Account of all the actions of the past.
Longfellow, *Old Age.*

6
Youth having passed, there is nothing to lose but memory. Cherishing the past without regrets and viewing the future without misgivings, we wait, then, for the nightfall when one may rest and call it a life.
George E. Macdonald, *Fifty Years of Freethought.* Vol. ii, p. 635.

7
So mays't thou live till, like ripe fruit, thou drop
Into thy mother's lap, or be with ease
Gather'd, not harshly pluck'd, for death mature:
This is old age.
Milton, *Paradise Lost.* Bk. xi, l. 532.

8
Would that by no disease, no cares opprest,
I in my sixtieth year were laid to rest.
Mimnermus. (Diogenes Laertius, *Solon.* Sec. 17.)

Surely a wiser wish were thus expressed,
At eighty years let me be laid to rest.
Solon, *Fragments.* Frag. 20.

9
I'm wearin' awa', John,
Like snaw-wreaths in thaw, John,
I'm wearin' awa'
To the land o' the leal.
Carolina Nairne, *The Land o' the Leal.*

11
Old age hath yet his honour and his toil;
Death closes all.
Alfred Tennyson, *Ulysses,* l. 50.

12
For my eightieth year warns me to pack up my baggage before I leave life. (Annus enim octogesimus admonet me, ut sarcinas colligam, antequam proficiscare vita.)
Varro, *De Re Rustica,* i, 1.

At seventy-seven it is time to be earnest.
Samuel Johnson. (Boswell, *Life,* v, 288.)

13
A little more tired at close of day,
A little less anxious to have our way;
A little less ready to scold and blame;
A little more care of a brother's name;
And so we are nearing the journey's end,
Where time and eternity meet and blend.
Rollin J. Wells, *Growing Old.*

14
Then Old Age and Experience, hand in hand,
Lead him to Death, and make him understand,
After a search so painful and so long,
That all his life he has been in the wrong.
John Wilmot, Earl of Rochester, *A Satire Against Mankind,* l. 25.

VI—Age: Its Love of Life

15
No one is so old as to think he cannot live one more year. (Nemo est tam senex qui se annum non putet posse vivere.)
Cicero, *De Senectute.* Ch. vii, sec. 24.

For never any man was yet so old
But hoped his life one winter more might hold.
Sir John Denham, *Of Old Age.* Pt. i, l. 135.

16
With lying lips prays eld for death's release,
Plaining of age and weary-wearing time.
Let death draw near—who hails his coming?
None:
No more is age a burden.
Euripides, *Alcestis,* l. 669.

17
Yet we hope and hope, and fancy that he who has lived to-day may live to-morrow.
Samuel Johnson. (Boswell, *Life.* Vol. iv, p. 270.)

18
There is no man so decrepit, whilst he has Methuselah before him, who does not think he has still twenty years of life in his body. (N'est homme si decrepite, tant qu'il veoid Mathusalem devant, qui ne pense avoir encores vingt ans dans le corps.)
Montaigne, *Essays.* Bk. i, ch. 19.

19
The tree of deepest root is found
Least willing still to quit the ground;
'Twas therefore said by ancient sages
That love of life increased with years,
So much that in our later stages,

When pains grow sharp, and sickness rages,
  The greatest love of life appears.
Hester Lynch Piozzi, *The Three Warnings.*

1
No man is so old that it is improper for him to hope for another day of existence. And one day, mind you, is a stage on life's journey. (Deinde nemo tam senex est, ut inprobe unum diem speret. Unus autem dies gradus vitæ est.)
Seneca, *Epistulæ ad Lucilium.* Epis. xii, sec. 6.

2
They that went on crutches ere he was born, desire yet their life to see him a man.
Shakespeare, *Winter's Tale.* Act i, sc. 1, l. 44.

3
Since, my last moments to assuage,
  Your Majesty's humane decree
  Has deign'd to leave the choice to me,
I'll die, so please you, of old age.
Horace Smith, *Jester Condemned to Death.*

4
Nobody loves life like an old man.
Sophocles, *Acrisius.* Frag. 63.

5
O! why do wretched men so much desire
To draw their days unto the utmost date?
Spenser, *Faerie Queene.* Bk. iv, canto iii, st. 1.

VII—Age: Its Compensations

6
In seventy or eighty years, a man may have a deep gust of the world; know what it is, what it can afford, and what 'tis to have been a man.
Sir Thomas Browne, *Christian Morals.* Pt. iii, sec. 22.

7
Grow old along with me!
The best is yet to be,
The last of life, for which the first was made:
Our times are in his hand
Who saith, "A whole I planned,
Youth shows but half; trust God: see all,
  nor be afraid!"
Robert Browning, *Rabbi Ben Ezra.* St. 1.

8
For out of old fields, as men saith,
Cometh all this new corn fro year to year.
Chaucer, *The Parlement of Foules,* l. 22.

Though summer goes, remember
  The harvest fields;
The color-work of autumn
  And what it yields.
Frederick Herbert Adler, *To One Who Fears Old Age.*

9
Old age lacks the heavy banquet, the loaded table, and the oft-filled cup; therefore it also lacks drunkenness, indigestion, and loss of sleep.
Cicero, *De Senectute.* Ch. xiii, sec. 44.

I am profoundly grateful to old age, which has increased my eagerness for conversation and taken away that for food and drink. (Habeoque senectuti magnam gratiam, quæ mihi sermonis aviditatem auxit, potionis et cibi sustulit.)
Cicero, *De Senectute.* Ch. xiv, sec. 46.

10
Old age, especially when crowned with honor, enjoys an authority which is of more value than all the sensual pleasures of youth. (Habet senectus, honorata præsertim, tantem auctoritatem, ut ea pluris sit quam omnes adulescentiæ voluptates.)
Cicero, *De Senectute.* Ch. xvii, sec. 61.

It is in old men that reason and judgment are found, and had it not been for old men no state would have existed at all. (Mens enim et ratio et consilium in senibus est, qui si nulli fuissent, nullæ omnino civitates fuissent.
Cicero, *De Senectute.* Ch. xix, sec. 67.

The fruit of old age is the memory of abundant blessings previously acquired. (Fructus autem senectutis est, ante partorum bonorum memoria et copia.)
Cicero, *De Senectute.* Ch. xix, sec. 71.

11
We come now to the third ground for abusing old age, and that is, that it is devoid of sensual pleasures. O glorious boon of age, if it does indeed free us from youth's most vicious fault!
Cicero, *De Senectute.* Ch. xii, sec. 39.

If age had no other pleasure than this, . . . it were a great one to have left all my painful and troublesome lusts behind me.
Seneca, *Epistulæ ad Lucilium.* Epis. xii, sec. 5.

Heaven forbid! I have fled from them as from a harsh and cruel master! (Di melioral ego vero istinc sicut a domino agresti ac furioso profugi.)
Sophocles, when asked if he indulged in the delights of love in his old age. (Cicero, *De Senectute.* Ch. xiv, sec. 47.)

The seas are quiet when the winds give o'er:
So, calm are we when passions are no more!
Edmund Waller, *Of the Last Verses in the Book.*

12
Come, Captain Age,
With your great sea-chest full of treasure!
Under the yellow and wrinkled tarpaulin
Disclose the carved ivory
And the sandalwood inlaid with pearl:
Riches of wisdom and years.
Sarah N. Cleghorn, *Come, Captain Age.*

Then welcome age, and fear not sorrow;
Today's no better than tomorrow. . . .
I know we grow more lovely
Growing wise.
Alice Corbin, *Two Voices.*

13
And not by eastern windows only,
  When daylight comes, comes in the light;
In front, the sun climbs slow, how slowly,
  But westward, look, the land is bright.
Arthur Hugh Clough, *Say Not the Struggle Nought Availeth.*

Suffer, O silent one, that I remind thee
Of the great hills that stormed the sky behind
  thee,
Of the wild winds of power that have resigned
  thee.
Alice Meynell, *Letter from a Girl to Her Old Age.*

1
The year grows rich as it groweth old,
And life's latest sands are its sands of gold!
Julia C. R. Dorr, *To the "Bouquet Club."*

2
[Age] has weathered the perilous capes and shoals in the sea whereon we sail, and the chief evil of life is taken away in removing the grounds of fear. . . . At every stage we lose a foe. At fifty years, 'tis said, afflicted citizens lose their sick-headaches.
Emerson, *Society and Solitude: Old Age.*

Old age brings along with its ugliness the comfort that you will soon be out of it. . . . To be out of the war, out of debt, out of the drouth, out of the blues, out of the dentist's hands, out of the second thoughts, mortifications, and remorses that inflict such twinges and shooting pains,—out of the next winter, and the high prices!
Emerson, *Journals.* Vol. x, p. 51.

3
O blest retirement, friend to life's decline,
Retreats from care, that never must be mine,
How blest is he who crowns in shades like
  these,
A youth of labour with an age of ease;
Who quits a world where strong temptations
  try,
And, since 'tis hard to combat, learns to fly!
Goldsmith, *The Deserted Village,* l. 97.

4
God on our Youth bestows but little ease,
But on our Age most sweet indulgences.
Robert Herrick, *Youth and Age.*

5
Many blessings do the advancing years bring with them; many, as they retire, they take away. (Multa ferunt anni venientes commoda secum, Multa recedentes adimunt.)
Horace, *Ars Poetica,* l. 175.

6
Light heart, light foot, light food, and slumber light,
These lights shall light us to old age's gate,
While monarchs, whom rebellious dreams
  affright,
Heavy with fear, death's fearful summons
  wait.
Edward Hovell-Thurlow, *When In the Woods I Wander All Alone.*

7
With the ancient is wisdom; and in length of days understanding.
Old Testament: Job, xii, 12.

The essence of age is intellect.
Emerson, *Society and Solitude: Old Age.*

Old age takes from the man of intellect no qualities save those which are useless to wisdom. (La vieillesse n'ôte à l'homme d'esprit que des qualités inutiles à la sagesse.)
Joubert, *Pensées.* No. 87.

As you are old and reverend, you should be wise.
Shakespeare, *King Lear.* Act i, sc. 4, l. 262.

8
In the decline of life, shame and grief are of short duration.
Samuel Johnson, *Rasselas.* Ch. 4.

We grow with years more fragile in body, but morally stouter, and we can throw off the chill of a bad conscience almost at once.
Logan Pearsall Smith, *Afterthoughts.*

9
It is too late! Ah, nothing is too late
Till the tired heart shall cease to palpitate.
Cato learned Greek at eighty; Sophocles
Wrote his grand Œdipus, and Simonides
Bore off the prize of verse from his compeers,
When each had numbered more than four-
  score years, . . .
Chaucer, at Woodstock with the nightingales,
At sixty wrote the Canterbury Tales;
Goethe at Weimar, toiling to the last,
Completed Faust when eighty years were
  past.
These are indeed exceptions; but they show
How far the gulf-stream of our youth may
  flow
Into the arctic regions of our lives. . . .
For age is opportunity no less
Than youth itself, though in another dress,
And as the evening twilight fades away
The sky is filled with stars, invisible by day.
Longfellow, *Morituri Salutamus,* l. 238.

10
Age is not all decay; it is the ripening, the swelling, of the fresh life within, that withers and bursts the husk.
George Macdonald, *The Marquis of Lossie.* Ch. 40.

11
Not till the fire is dying in the grate,
Look we for any kinship with the stars.
George Meredith, *Modern Love.* St. 4.

12
We age inevitably:
  The old joys fade and are gone:
And at last comes equanimity and the flame
  burning clear.
James Oppenheim, *New Year's Eve.*

13
Certainly old age has a great sense of calm and freedom; when the passions relax their hold, then, as Sophocles says, you have escaped from the control not of one master, but of many.
Plato, *The Republic.* Bk. i, sec. 329.

14
Why will you break the Sabbath of my days,
Now sick alike of Envy and of Praise?
Pope, *Imitations of Horace: Epistles.* Bk. i, epis. 1. l. 3.

In life's cool ev'ning, satiate of applause.
POPE, *Imitations of Horace: Epistles*. Bk. i, epis. 1, l. 9.

1
Life is most delightful when it is on the downward slope. (Jucundissima est ætas devexa jam.)
SENECA, *Epistulæ ad Lucilium*. Epis. xii, sec. 5.

2
Let us cherish and love old age; for it is full of pleasure, if one knows how to use it. . . . The best morsel is reserved to the last. (Complectamur illam at amemus; plena est voluptatis, si illa scias uti. . . . Quod in se jucundissimum omnis voluptas habet, in finem sui differt.)
SENECA, *Epistulæ ad Lucilium*. Epis. xii, sec. 4.

Of earthly blessing age is not the least,
Serene its twilight sky, the journey past;
Like that rare draught at Cana's marriage feast,
Life's best wine is the last.
FRANCES E. POPE, *The End of the Road*.

The daintiest last, to make the end most sweet.
SHAKESPEARE, *Richard II*. Act i, sc. 3, l. 68.

3
More are men's ends mark'd than their lives before:
The setting sun, and music at the close,
As the last taste of sweets, is sweetest last,
Writ in remembrance more than things long past.
SHAKESPEARE, *Richard II*. Act ii, sc. 1, l. 11.

4
The day becomes more solemn and serene
When noon is past: there is a harmony
In Autumn, and a lustre in its sky
Which through the Summer is not heard or seen,
As if it could not be, as if it had not been!
SHELLEY, *Hymn to Intellectual Beauty*. St. 7.

5
Old age and the wear of time teach many things. (Γῆρας διδάσκει πολλὰ καὶ χρόνου τριβή.)
SOPHOCLES, *Tyro*. Frag. 586.

6
No wise man ever wished to be younger.
SWIFT, *Thoughts on Various Subjects*.

7
Old men view best at a distance, with the eyes of understanding, as well as with those of nature.
SWIFT, *Thoughts on Various Subjects*.

Observation is an old man's memory.
SWIFT, *Thoughts on Various Subjects*.

8
I shall grow old, but never lose life's zest,
Because the road's last turn will be the best.
HENRY VAN DYKE, *The Zest of Life*.

9
Old age is no such uncomfortable thing, if one gives oneself up to it with a good grace, and don't drag it about "To midnight dances and the public show."
HORACE WALPOLE, *Letter to the Countess of*

10
I see in you the estuary that enlarges and spreads itself grandly as it pours in the great sea.
WALT WHITMAN, *To Old Age*.

The lights indeed from them—old age's lambent peaks.
WALT WHITMAN, *Old Age's Lambent Peaks*.

11
Honorable age is not that which standeth in length of time, nor that is measured by number of years. But wisdom is the gray hair unto men, and an unspotted life is old age.
Apocrypha: Wisdom of Solomon, iv, 8, 9.

VIII—Age: Its Penalties

12
What is it to grow old? . . .
Ah, 'tis not what in youth we dreamed 'twould be!
'Tis not to have our life
Mellowed and softened as with sunset glow,
A golden day's decline. . . .
It is to spend long days
And not once feel that we were ever young; . . .
It is—last stage of all!— . . .
To hear the world applaud the hollow ghost
Which blamed the living man.
MATTHEW ARNOLD, *Growing Old*.

The foot less prompt to meet the morning dew,
The heart less bounding at emotion new,
And hope, once crushed, less quick to spring again.
MATTHEW ARNOLD, *Thyrsis*. St. 14.

The slow dull sinking into withered age.
SIR EDWIN ARNOLD, *The Light of Asia*. Bk. iv.

13
Men of age object too much, consult too long, adventure too little, repent too soon.
FRANCIS BACON, *Essays: Of Youth and Age*.

14
Remember age, and thou canst not be proud,
For age pulls down the pride of every man.
RICHARD BARNFIELD, *The Affectionate Shepherd*. St. 31.

15
Old age doth in sharp pains abound;
We are belabored by the gout,
Our blindness is a dark profound,
Our deafness each one laughs about.
Then reason's light with falling ray
Doth but a trembling flicker cast.
Honor to age, ye children pay!
Alas! my fifty years are past!
BÉRANGER, *Cinquante Ans*. (C. L. Betts, tr.)

16
Old age is the harbor of all ills. (Τὸ γῆρας ἔλεγεν ὅρμον εἶναι τῶν κακῶν.)
BION. (DIOGENES LAERTIUS, *Bion*. Bk. iv, sec. 48.)

17
When ance life's day draws near the gloamin'

Then fareweel vacant, careless roamin';
An' fareweel cheerfu' tankards foamin';
An' social noise;
An' fareweel dear, deluding Woman,
The joy of joys!
BURNS, *Epistle to James Smith*. St. 14.

1
I've seen sae monie changefu' years,
On earth I am a stranger grown;
I wander in the ways of men,
Alike unknowing and unknown.
BURNS, *Lament for James, Earl of Glencairn*.

What is the worst of woes that wait on age?
What stamps the wrinkle deeper on the brow?
To view each loved one blotted from life's page,
And be alone on earth, as I am now.
BYRON, *Childe Harold*. Canto ii, st. 98.

How strange it seems, with so much gone
Of life and love, to still live on!
WHITTIER, *Snow-Bound*, l. 181.

2
He, who grown aged in this world of woe,
In deeds, not years, piercing the depths of life.
BYRON, *Childe Harold*. Canto iii, st. 5.

3
Years steal
Fire from the mind as vigour from the limb,
And life's enchanted cup but sparkles near the brim.
BYRON, *Childe Harold*. Canto iii, st. 8.

4
Just as old age is creeping on apace,
And clouds come o'er the sunset of our day,
They kindly leave us, though not quite alone,
But in good company—the gout or stone.
BYRON, *Don Juan*. Canto iii, st. 59.

My days are in the yellow leaf;
The flowers and fruits of love are gone;
The worm, the canker, and the grief
Are mine alone!
BYRON, *On This Day I Complete My Thirty-sixth Year*.

Though the night was made for loving,
And the day returns too soon,
Yet we'll go no more a roving
By the light of the moon.
BYRON, *So We'll Go No More A Roving*.

5
Old age has disgraces of its own; do not add to them the shame of vice. (Πολλὰ ἔχοντι τῷ γήρᾳ τὰ αἰσχρὰ μὴ προστίθει τὴν ἀπὸ τῆς κακίας αἰσχύνην.)
MARCUS CATO. (PLUTARCH, *Lives: Marcus Cato*. Ch. ix, sec. 6.)

'Tis unseemly for the old man to love. (Turpe senilis amor.)
OVID, *Amores*. Bk. i, eleg. 9, l. 4.

6
Old boys have their playthings as well as young ones; the difference is only in the price.
BENJAMIN FRANKLIN, *Poor Richard*, 1752.

There are few things that we so unwillingly give up, even in advanced age, as the supposition that we have still the power of ingratiating ourselves with the fair sex.
SAMUEL JOHNSON, *Miscellanies*. Vol. ii, p. 326.

A head that's white
To maids brings no delight.
UNKNOWN. (*Berkeley MSS.*, iii, 30.)

7
Ah, that I might strip off again this old age!
(Ἆ πάντως ἵνα γῆρας αὖθι τόδ' ἐκδύοιμι.)
CALLIMACHUS, *Fragmenta Incertæ*. No. 106.

8
Statesmen and beauties are very rarely sensible of the gradations of their decay; and, too sanguinely hoping to shine on in their meridian, often set with contempt and ridicule.
LORD CHESTERFIELD, *Letters*, 26 Feb., 1754.

9
The heart never grows better by age; I fear rather worse; always harder. A young liar will be an old one; and a young knave will only be a greater knave as he grows older.
LORD CHESTERFIELD, *Letters*, 17 May, 1750.

Many foxes grow gray, but few grow good.
BENJAMIN FRANKLIN, *Poor Richard*, 1749.

Men become old but they never become good.
OSCAR WILDE, *Lady Windermere's Fan*. Act i.

10
Old age makes me sour. (Amariorem enim me senectus facit.)
CICERO, *Epistulæ ad Atticum*. Bk. xiv, epis. 21.

11
Age and wedlock bring a man to his night-cap.
JOHN CLARKE, *Parœmiologia A.-L.*, 279.

Age and wedlock tame man and beast.
WILLIAM CAMDEN, *Remains*, 317.

Age and wedlock we all desire and repent of.
THOMAS FULLER, *Gnomologia*. No. 780.

12
When I was young?—Ah, woeful When!
Ah! for the change 'twixt Now and Then!
This breathing house not built with hands,
This body that does me grievous wrong,
O'er aery cliffs and glittering sands,
How lightly then it flashed along:—
Like those trim skiffs, unknown of yore,
On winding lakes and rivers wide,
That ask no aid of sail or oar,
That fear no spite of wind or tide!
S. T. COLERIDGE, *Youth and Age*, l. 6.

Flowers are lovely; Love is flower-like;
Friendship is a sheltering tree;
O! the joys that came down shower-like,
Of Friendship, Love, and Liberty,
Ere I was old!
S. T. COLERIDGE, *Youth and Age*, l. 18.

Like some poor nigh-related guest,
That may not rudely be dismissed,
Yet hath outstay'd his welcome while,
And tells the jest without the smile.
S. T. COLERIDGE, *Youth and Age*, l. 46.

Oh! better, then, to die and give
The grave its kindred dust,

Than live to see Time's bitter change
In those we love and trust.
Eliza Cook, *Time's Changes.*

1
But age is froward, uneasy, scrutinous,
Hard to be pleased, and parsimonious.
Sir John Denham, *Of Old Age.* Pt. iii, l. 235.

Old men are testy, and will have their way.
Shelley, *The Cenci.* Act i, sc. 2.

2
Nature abhors the old.
Emerson, *Essays, First Series: Circles.*

3
What else is an old man but voice and shadow?
Euripides, *Melanippe.* Frag. 18.

An old man is a bed full of bones.
John Ray, *English Proverbs.*

4
Slow-consuming Age.
Thomas Gray, *On a Distant Prospect of Eton College.* St. 9.

5
That age is best which is the first,
When youth and blood are warmer;
But being spent, the worse, and worst
Times still succeed the former.
Robert Herrick, *To the Virgins, to Make Much of Time.* St. 3.

6
Youth longs and manhood strives, but age remembers,
Sits by the raked-up ashes of the past,
Spreads its thin hands above the whitening embers
That warm its creeping life-blood till the last.
Oliver Wendell Holmes, *The Iron Gate.*

7
Nay, and thou too, old man, in former days wast as we hear, happy. (*Καὶ σέ γέρον, τὸπρὶν μὲν ἀκσύομεν ὄλβιον ἔιναι.*)
Homer, *Iliad.* Bk. xxiv, 1, 543.

How rare to find old age and happiness in one! (Rarum est felix idemque senex.)
Seneca, *Hercules Œtæus,* l. 643.

8
And bended Age, whose rusted sickle lies
In the scant harvest of remembered days.
R. U. Johnson, *Youth and the Sea.*

9
Hides from himself his state, and shuns to know
That life protracted is protracted woe.
Time hovers o'er, impatient to destroy,
And shuts up all the passages of joy.
Samuel Johnson, *Vanity of Human Wishes,* l. 257.

10
There is a wicked inclination in most people to suppose an old man decayed in his intellects. If a young or middle-aged man, when leaving a company, does not recollect where he laid his hat, it is nothing; but if the same inattention is discovered in an old man, people will shrug up their shoulders, and say "His memory is going."
Samuel Johnson. (Boswell, *Life,* iv, 181.)

11
Young men have more virtue than old men; they have more generous sentiments in every respect.
Samuel Johnson. (Boswell, *Life,* i, 445.)

I hope our young men will not grow into such dodgers as these old men are.
Benjamin Jowett, *Letters.* No. 250.

Every man over forty is a scoundrel.
Bernard Shaw, *Maxims for Revolutionists.*

12
How great and unceasing are the miseries of age! (Quam continuis et quantis longa senectus Plena malis!)
Juvenal, *Satires.* Sat. x, l. 190.

Such are the penalties of the old man: he sees calamity after calamity befall his house, he lives in a world of sorrow, he grows old amid continual lamentation and in the garb of woe. (Hæc data poena diu viventibus, ut renovata Semper clade domus multis in luctibus inque Perpetuo mærore et nigra veste senescant.)
Juvenal, *Satires.* Sat. x, l. 243.

13
Old age, more to be feared than death. (Morte magis metuenda senectus.)
Juvenal, *Satires.* Sat. xi, l. 45.

O what a thing is age! Death without death's quiet.
Landor, *Imaginary Conversations: Epicurus, Leontion, and Ternissa.*

14
When all the world is old, lad,
And all the trees are brown;
And all the sport is stale, lad,
And all the wheels run down:
Creep home, and take your place there,
The spent and maimed among:
God grant you find one face there
You loved when all was young.
Charles Kingsley, *Young and Old.* (*The Water-Babies.* Ch. 2.)

15
Old age is a tyrant who forbids, upon pain of death, all the pleasures of youth. (La vieillesse est un tyran qui défend, sur peine de la vie, tous les plaisirs de la jeunesse.)
La Rochefoucauld, *Maximes.* No. 461.

16
Whatever poet, orator, or sage
May say of it, old age is still old age.
It is the waning, not the crescent moon;
The dusk of evening, not the blaze of noon;
It is not strength, but weakness; not desire,
But its surcease; not the fierce heat of fire,
The burning and consuming element,
But that of ashes and of embers spent.
Longfellow, *Morituri Salutamus,* l. 262.

The sunshine fails, the shadows grow more dreary.
Longfellow, *Canzone.*

1
As life runs on, the road grows strange
With faces new, and near the end
The milestones into headstones change,
'Neath every one a friend.
J. R. Lowell, *Sixty-eighth Birthday.*

The days grow shorter, the nights grow longer,
The headstones thicken along the way;
And life grows sadder, but love grows stronger
For those who walk with us day by day.
Ella Wheeler Wilcox, *Interlude.*

Men drop so fast, ere life's mid stage we tread,
Few know so many friends alive, as dead.
Young, *Love of Fame.* Sat. v, l. 97.

After a certain distance, every step we take in life we find the ice growing thinner below our feet, and all around us and behind us we see our contemporaries going through.
Stevenson, *Virginibus Puerisque: Æs Triplex.*

2
When the body is assailed by the force of time,
And the limbs weaken from exhausted strength,
The mind breaks down, and thought and speech fail.
(Ubi jam validis quassatum est viribus ævi
Corpus et obtusis ceciderunt viribus artus,
Claudicat ingenium delirat lingua, labat mens.)
Lucretius, *De Rerum Natura.* Bk. iii, l. 451.

3
Old age, thou enemy of mortal frames, 'tis thou dost plunder all that's fair from shapes of loveliness.
Menander, *Fragments.* No. 552.

O burdensome old age, thou dost bring never a blessing, but, while life lasts, many an annoyance and sorrow!
Menander, *Fragments.* No. 555.

4
Set is the sun of my years,
And over a few poor ashes,
I sit in darkness and tears.
Gerald Massey, *A Wail.*

5
Old age plants more wrinkles in the mind than in the face. (La vieillesse nous attache plus des rides en l'esprit qu'en visage.)
Montaigne, *Essays.* Bk. i, ch. 57.

6
The uselessness of men above sixty years of age and the incalculable benefit it would be in commercial, in political, and in professional life, if as a matter of course, men stopped work at this age.
William Osler, *Address,* Johns Hopkins University, 22 Feb., 1905. It was this statement, together with a jesting quotation from Anthony Trollope's *The Fixed Period,* that "it might be a good thing if all were peacefully chloroformed at sixty," which caused Dr. Osler to be headlined throughout the country as the advocate of chloroform after sixty and the enemy of old age. (See *Medical Record,* 4 March, 1905; Cushing, *Life of Osler,* vol. i, ch. 29; Reid, *The Great Physician,* p. 173.)

7
And oh! I shall find how, day by day,
All thoughts and things look older;
How the laugh of pleasure grows less gay,
And the heart of friendship colder.
W. M. Praed, *Twenty-eight and Twenty-nine*

8
Now Time has fled—the world is strange,
Something there is of pain and change;
My books lie closed upon the shelf;
I miss the old heart in myself.
Adelaide Ann Procter, *A Student.*

9
What makes old age so sad is, not that our joys but that our hopes cease. (Das Alter ist nicht trübe weil darin unsere Freuden, sondern weil unsere Hoffnungen aufhören.)
Jean Paul Richter, *Titan.* Zykel 34.

10
I'm growing fonder of my staff;
I'm growing dimmer in the eyes;
I'm growing fainter in my laugh;
I'm growing deeper in my sighs;
I'm growing careless of my dress;
I'm growing frugal of my gold;
I'm growing wise, I'm growing—yes,
I'm growing old.
John G. Saxe, *I'm Growing Old.*

11
Thus pleasures fade away;
Youth, talents, beauty, thus decay,
And leave us dark, forlorn, and grey.
Scott, *Marmion:* Canto ii, *Introduction.* St. 7.

12
Thus aged men, full loth and slow,
The vanities of life forego,
And count their youthful follies o'er,
Till Memory lends her light no more.
Scott, *Rokeby.* Canto v, st. 1.

13
Old age is an incurable disease. (Senectus insanabilis morbus est.)
Seneca, *Epistulæ ad Lucilium.* Epis. cviii, 28.

Old age in itself is a disease. (Senectus ipsast morbus.)
Terence, *Phormio,* l. 575. (Act iv, sc. 1.)

Old age itself is a disease.
Ben Jonson, *Explorata: Sed Seculi Morbus.*

Old age is sickness enough of itself.
Walker, *Paræmiologia,* 33.

14
And so, from hour to hour, we ripe and ripe,
And then, from hour to hour, we rot and rot.
Shakespeare, *As You Like It.* Act ii, sc. 7, l. 26.

15 There is an old poor man, . . .
Oppress'd with two weak evils, age and hunger.
Shakespeare, *As You Like It.* Act ii, sc. 7, l. 129.

These tedious old fools!
Shakespeare, *Hamlet.* Act ii, sc. 2, l. 223.

No fool like an old fool, *see under* Fool.

16
The satirical rogue says here, that old men have grey beards; that their faces are wrinkled; their eyes purging thick amber and

plum-tree gum; and that they have a plentiful lack of wit, together with most weak hams: all which, sir, though I most powerfully and potently believe, yet I hold it not honesty to have it thus set down; for you yourself, sir, should be old as I am, if, like a crab, you could go backward.
SHAKESPEARE, *Hamlet*. Act ii, sc. 2, l. 198.

At your age,
The hey-day in the blood is tame, it's humble,
And waits upon the judgement.
SHAKESPEARE, *Hamlet*. Act iii, sc. 4, l. 68.

And 'tis not hard, I think,
For men so old as we to keep the peace.
SHAKESPEARE, *Romeo and Juliet*. Act i, sc. 2, l. 3.

1
Falstaff: You that are old consider not the capacities of us that are young; you do measure the heat of our livers with the bitterness of your galls; and we that are in the vaward of our youth, I must confess, are wags too.
Chief Justice: Do you set down your name in the scroll of youth, that are written down old with all the characters of age? Have you not a moist eye? a dry hand? a yellow cheek? a white beard? a decreasing leg? an increasing belly? is not your voice broken? your wind short? your chin double? your wit single? and every part about you blasted with antiquity? and will you yet call yourself young? Fie, fie!
SHAKESPEARE, *II Henry IV*. Act i, sc. 2, l. 197.

2
Pray, do not mock me:
I am a very foolish fond old man,
Fourscore and upward; not an hour more nor less,
And, to deal plainly,
I fear I am not in my perfect mind.
SHAKESPEARE, *King Lear*. Act iv, sc. 7, l. 59.

3
I have lived long enough; my way of life
Is fall'n into the sear, the yellow leaf;
And that which should accompany old age,
As honour, love, obedience, troops of friends,
I must not look to have; but in their stead,
Curses, not loud but deep; mouth-honour, breath,
Which the poor heart would fain deny, and dare not.
SHAKESPEARE, *Macbeth*. Act v, sc. 3, l. 24.

That time of year thou mayst in me behold
When yellow leaves, or none, or few, do hang
Upon those boughs which shake against the cold,—
Bare ruin'd choirs, where late the sweet birds sang.
SHAKESPEARE, *Sonnets*. No. lxxiii.

4
When thou art old and rich,
Thou hast neither heat, affection, limb, nor beauty,
To make thy riches pleasant

5
When the age is in, the wit is out.
SHAKESPEARE, *Much Ado About Nothing*. Act iii, sc. 5, l. 37. A play upon the proverb, "When the wine is in, the wit is out."

6
The eternal dawn, beyond a doubt,
Shall break on hill and plain,
And put all stars and candles out
Ere we be young again.
R. L. STEVENSON, *To Minnie*.

7
When men grow virtuous in their old age they are merely making a sacrifice to God of the devil's leavings.
SWIFT, *Thoughts on Various Occasions*.

8
Fires that shook me once, but now to silent ashes fall'n away.
Cold upon the dead volcano sleeps the gleam of dying day.
TENNYSON, *Locksley Hall Sixty Years After*. St. 21.

9
Old age brings this one vice to mankind, that we all think too much of money. (Solum unum hoc vitium adfert senectus hominibus: adtentiores sumus ad rem omnes, quam sat est.)
TERENCE, *Adelphi*, l. 833. (Act v, sc. 3.)

A man can no more separate age and covetousness than a' can part young limbs and lechery.
SHAKESPEARE, *II Henry IV*. Act i, sc. 2, l. 256.

That disease
Of which all old men sicken,—avarice.
MIDDLETON, *The Roaring Girl*. Act i, sc. 1.

So for a good old-gentlemanly vice,
I think I must take up with avarice.
BYRON, *Don Juan*. Canto i, st. 216.

Avarice is the vice of declining years.
GEORGE BANCROFT, *History of U. S.* Ch. 17.

Generally money lies nearest them that are nearest their graves.
WILLIAM PENN, *Fruits of Solitude*, p. 151.

The avaricious man will show his avarice as he gets into years, because avarice is a passion compatible with old age,—and will become more avaricious as his other passions fall off from him.
ANTHONY TROLLOPE, *Ralph the Heir*. Ch. 1.

10
How earthy old people become,—mouldy as the grave! Their wisdom smacks of the earth. There is no foretaste of immortality in it. They remind me of earthworms and mole crickets.
H. D. THOREAU, *Journal*, 16 Aug., 1853.

11
Age steals away all things, even the mind. (Omnia fert ætas, animum quoque.)
VERGIL, *Eclogues*. No. ix, l. 51.

12
The choicest days of hapless human life

And toil, till harsh death rudely snatches all.
(Optima quæque dies miseris mortalibus ævi
Prima fugit; subeunt morbi tristisque senectus
Et labor, et duræ rapit inclementia mortis.)
VERGIL, *Georgics*. Bk. iii, l. 66.

There dwelleth pale disease and bitter eld.
(Pallentesque habitant morbi tristisque senectus.)
VERGIL, *Æneid*. Bk. vi, l. 275.

1
The loss of youth is melancholy enough, but to enter into old age through the gate of infirmity most disheartening.
WALPOLE, *Letters: To George Montagu*, 28 July, 1765.

2
Nothing is so ridiculous as an antique face in a juvenile drawing-room.
WALPOLE, *Letter to Sir Horace Mann*, 31 Dec., 1780.

3
Thus fares it still in our decay,
And yet the wiser mind
Mourns less for what age takes away
Than what it leaves behind.
WORDSWORTH, *The Fountain*. St. 9.

4
Waters on a starry night
Are beautiful and fair;
The sunshine is a glorious birth:
But yet I know, where'er I go,
That there hath passed away a glory from the earth.
WORDSWORTH, *Intimations of Immortality*, l. 14.

5
O Man, that from thy fair and shining youth
Age might but take the things Youth needed not!
WORDSWORTH, *The Small Celandine*.

6
I heard the old, old men say,
"All that's beautiful drifts away
Like the waters."
W. B. YEATS, *The Old Men Admiring Themselves in the Water*.

IX—Age: Green and Lusty

7
His head,
Not yet by time completely silver'd o'er,
Bespoke him past the bounds of freakish youth,
But strong for service still, and unimpair'd.
COWPER, *The Task*. Bk. ii, l. 702.

8
His eye was not dim, nor his natural force abated.
Old Testament: Deuteronomy, xxxiv, 7.

9
Father Time is not always a hard parent, and, though he tarries for none of his children, often lays his hand lightly on those who have used him well.
DICKENS, *Barnaby Rudge*. Ch. 2.

10
Spring still makes spring in the mind
When sixty years are told;
Love makes anew this throbbing heart,
And we are never old.
Over the winter glaciers
I see the summer glow,
And through the wild-piled snowdrift,
The warm rosebuds below.
EMERSON, *The World-Soul*. St. 14.

11
In a good old age.
Old Testament: Genesis, xv, 15.

12
Alike all ages. Dames of ancient days
Have led their children through the mirthful maze;
And the gay grandsire, skill'd in gestic lore,
Has frisk'd beneath the burthen of threescore.
GOLDSMITH, *The Traveller*, l. 251.

When age is jocund it makes sport for death.
GEORGE HERBERT, *Jacula Prudentum*.

13
To be seventy years young is sometimes far more cheerful and hopeful than to be forty years old.
O. W. HOLMES, *Letter to Julia Ward Howe*, on her 70th birthday, 27 May, 1889.

14
Call him not old whose visionary brain
Holds o'er the past its undivided reign.
For him in vain the envious seasons roll
Who bears eternal summer in his soul.
O. W. HOLMES, *The Old Player*.

15
A green old age, unconscious of decays,
That proves the hero born in better days.
HOMER, *Iliad*. Bk. xxiii, l. 929. (Pope, tr.)

His hair just grizzled As in a green old age.
DRYDEN, *Œdipus*. Act iii, sc. 1.

That in my age as cheerful I might be
As the green winter of the Holly Tree.
ROBERT SOUTHEY, *The Holly Tree*.

His old age was still fresh and green. (Cruda deo viridisque senectus.)
VERGIL, *Æneid*. Bk. vi, l. 304. Vergil is speaking of Charon, the ferryman of the nether regions. In describing the Britons preparing to give battle to the Roman legions at the foot of the Grampians, Cæsar uses the same phrase: "Quibus cruda ac viridis senectus."

16
Our hearts are young 'neath wrinkled rind:
Life's more amusing than we thought.
ANDREW LANG, *Ballade of Middle Age*.

17
His leaf also shall not wither.
Old Testament: Psalms, i, 3.

18
Though I look old, yet I am strong and lusty;
For in my youth I never did apply
Hot and rebellious liquors in my blood,
Nor did not with unbashful forehead woo

The means of weakness and debility;
Therefore my age is as a lusty winter,
Frosty, but kindly.
Shakespeare, *As You Like It*. Act ii, sc. 3, l. 47.

1
You are old, Father William, the young man cried,
The few locks which are left you are grey;
You are hale, Father William, a hearty old man,
Now tell me the reason, I pray.

In the days of my youth, Father William replied,
I remember'd that youth would fly fast,
And abused not my health and my vigour at first,
That I never might need them at last.
Robert Southey, *The Old Man's Comforts*.

"You are old, Father William," the young man said,
"And your hair has become very white;
And yet you incessantly stand on your head—
Do you think, at your age, it is right?"
"In my youth," Father William replied to his son,
"I feared it might injure the brain;
But, now that I'm perfectly sure I have none,
Why, I do it again and again."
Lewis Carroll, *Alice's Adventures in Wonderland*. Ch. 5.

2
Grave was the man in years, in looks, in word,
His locks were gray, yet was his courage green.
(Ei di virilità grave e maturo,
Mostra in fresco vigor chiome canute.)
Tasso, *Jerusalem Delivered*. Bk. i, st. 53.

I'll out a while, an' see the young anes play.
My heart's still light, albeit my locks be grey.
Allan Ramsay, *The Gentle Shepherd*. Act iii, sc. 2.

3
You have seen the old age of an eagle, as the saying is. (Visa verost, quod dici solet, Aquilæ senectus.)
Terence, *Heauton Timorumenos*, l. 520. (Act iii, sc. 2.)

The old age of an eagle is better than the youth of a sparrow. (Ἀετοῦ γῆράς, κορύδου νεότης.)
Unknown. A Greek proverbial saying.

4
Venerable men! you have come down to us from a former generation. Heaven has bounteously lengthened out your lives, that you might behold this joyous day.
Daniel Webster, *Address, at Laying the Corner-stone of the Bunker Hill Monument*, 17 June, 1825.

5
But an old age serene and bright,
And lovely as a Lapland night,
Shall lead thee to thy grave.
Wordsworth, *To a Young Lady*.

6
The monumental pomp of age
Was with this goodly Personage;
A stature undepressed in size,
Unbent, which rather seemed to rise,
In open victory o'er the weight
Of seventy years, to loftier height.
Wordsworth, *The White Doe of Rylstone*. Canto iii, l. 737.

7
Age . . . is a matter of feeling, not of years.
George William Curtis, *Prue and I*. Ch. vi.

O wherefore our age be revealing?
Leave that to the registry books!
A man is as old as he's feeling,
A woman as old as she looks.
Mortimer Collins, *How Old Are You?*

One is as old as one's heart. (On a l'age de son cœur.)
Alfred d'Houdetot, *Age*.

A man is as old as his arteries.
Dr. Pierre J. G. Cabanis, *Epigram*. (a. 1800) Frequently quoted.

X—Age: Its Crown of Glory

See also Hair: Gray

8
The hoary head is a crown of glory, if it be found in the way of righteousness.
Old Testament: Proverbs, xvi, 31.

The beauty of old men is the gray head.
Old Testament: Proverbs, xx, 29.

Thy white locks, the blossom of old age.
Sophocles, *Electra*, l. 42.

9
But now your brow is beld, John,
Your locks are like the snow;
But blessings on your frosty pow,
John Anderson my jo.
Robert Burns, *John Anderson My Jo*.

Nor can the snow, which now cold Age does shed
Upon thy reverend head,
Quench or allay the noble fires within.
Abraham Cowley, *To Mr. Hobs*. St. 6.

10
A little more toward the light;—
Me miserable! Here's one that's white;
And one that's turning;
Adieu to song and "salad days";
My Muse, let's go at once to Jay's,
And order mourning.
Austin Dobson, *Growing Gray*.

Come let me pluck that silver hair
Which 'mid thy clustering curls I see;
The withering type of time or care
Has nothing, sure, to do with thee.
Alaric Alex Watts, *The Grey Hair*.

11
We grizzle every day. I see no need of it.
Emerson, *Essays, First Series: Circles*.

He is more than halfway
On the road from Grizzle to Grey.
Robert Southey, *Robert the Rhymer's Account of Himself*.

1
"Gray temples at twenty?"—Yes! *white* if we please!
Where the snow-flakes fall thickest there's nothing can freeze!
Oliver Wendell Holmes, *The Boys*.

2
Though Time has touched it in his flight,
And changed the auburn hair to white.
Longfellow, *The Golden Legend*. Pt. iv, l. 388.

3
Remote from cities liv'd a Swain,
Unvex'd with all the cares of gain;
His head was silver'd o'er with age,
And long experience made him sage.
John Gay, *Fables: Pt. i, Introduction*.

4
My whitening hair softens a spirit prone to strife and wanton brawling; I had not brooked such insult when hot with youth, in the consulship of Plancus. (Lenit albescens animos capillus Litium et rixæ cupidos protervæ; Non ego hoc ferrem calidus juventa Consule Planco.)
Horace, *Odes*. Bk. ii, ode 14, l. 25.

5
The snows of the head. (Capitis nives.)
Horace, *Odes*. Bk. iv, ode 13, l. 12.

6
Consider my gray hairs. (Meum caput contemples.)
Plautus, *Asinaria*, l. 539. (Act iii, sc. 1.)

7
Darling, I am growing old,
Silver threads among the gold
Shine upon my brow today;
Life is fading fast away.
Eben E. Rexford, *Silver Threads Among the Gold*. (1873)

8
The silver livery of advised age.
Shakespeare, *II Henry VI*. Act v, sc. 2, l. 47.

How ill white hairs become a fool and jester!
Shakespeare, *II Henry IV*. Act v, sc. 5, l. 52.

9
When white hairs thatch the furrowed brow
Crowns come too late!
Richard Henry Stoddard, *Threescore and Ten*.

XI—Age and Learning

10
It is always in season for the old to learn. (Καλὸν δὲ καὶ γέροντα μανθάνειν σοφά.)
Æschylus, *Fragments*. Frag. 224.

11
Nor does age prevent our persisting in the study of other matters, and especially agriculture, even to the latest period of old age. (Nec ætas impedit quo minus et ceterarum rerum, et in primis agri colendi studia teneamus, usque ad ultimum tempus senectutis.)
Cicero. *De Senectute*. Ch. 17. sec. 60.

12
If I were running in the stadium, ought I to slacken my pace when approaching the goal? ought I not rather to put on speed?
Diogenes, when told that he should take a rest, since he was an old man. (Diogenes Laertius, *Diogenes*. Sec. 34.)

The riders in a race do not stop short when they reach the goal. There is a little finishing canter before coming to a standstill. There is time to hear the kind voice of friends and to say to one's self: "The work is done."
Justice Oliver Wendell Holmes, *Radio Address* on his 90th birthday, 8 March, 1931.

13
Nothing is more dishonorable than an old man, heavy with years, who has no other evidence of having lived long except his age.
Seneca, *De Tranquillitate*. Ch. iii, sec. 7.

An old man learning his A B C is a disgraceful and absurd object; the young man must store up, the old man must use. (Turpis et ridicula res est elementarius senex; juveni parandum, seni utendum est.)
Seneca, *Epistulæ ad Lucilium*. Epis. xxxvi, 4.

What a stupid thing is an old man learning an alphabet! (La sotte chose qu'un vieillard abecedaire!)
Montaigne, *Essays*. Bk. ii, ch. 28.

14
The head grey, and no brains yet.
Thomas Fuller, *Gnomologia*. No. 4587.

15
But I grow old ever learning many things. (Γηράσκω δ' αἰεὶ πολλὰ διδασκόμενος.)
Solon. (Plutarch, *Lives: Solon*. Sec. 31.)

I am still learning. (Ancora imparo.)
Michelangelo. His motto.

16
The latter part of a wise man's life is taken up in curing the follies, prejudices, and false opinions he had contracted in the former.
Swift, *Thoughts on Various Subjects*.

XII—Age: Its Garrulity

17
When a man fell into his anecdotage it was a sign for him to retire from the world.
Benjamin Disraeli, *Lothair*. Ch. 28. "The world in its anecdotage" is referred to in the preface to Isaac D'Israeli's *Curiosities of Literature*.

But oh! the biggest muff afloat
Is he who takes to anecdote.
Henry Sambrooke Leigh, *Men I Dislike*.

18
Miss not the discourse of the elders.
Apocrypha: Ecclesiasticus, viii, 9.

19
Talking age.
Goldsmith, *The Deserted Village*, l. 14.

Narrative old age.
Pope, *The Temple of Fame*, l. 291.

20
Chiefs who no more in bloody fights engage,
But, wise thro' time, and narrative with age,

In summer-days like grasshoppers rejoice,
A bloodless race, that send a feeble voice.
HOMER, *Iliad*. Bk. iii, l. 199. (Pope, tr.)

As ancient Priam at the Scæan gate
Sat on the walls of Troy in regal state
With the old men, too old and weak to fight,
Chirping like grasshoppers in their delight
To see the embattled hosts, with spear and shield,
Of Trojans and Achaians in the field.
LONGFELLOW, *Morituri Salutamus*, l. 78.

1 It was near a miracle to see an old man silent, since talking is the disease of age.
BEN JONSON, *Explorata: Homeri Ulysses.*

A fond old man is often as full of words as a woman.
SIR THOMAS MORE, *English Works*, p. 1169.

A good old man, sir; he will be talking.
SHAKESPEARE, *Much Ado About Nothing*, iii, 5, 36.

2 What should we speak of
When we are old as you? When we shall hear
The rain and wind beat dark December.
SHAKESPEARE, *Cymbeline*. Act iii, sc. 3, l. 36.

3 Age too shines out: and, garrulous, recounts
The feats of youth.
THOMSON, *The Seasons: Autumn*, l. 1231.

XIII—Age: In Women: Its Beauty

4 The autumn of the beautiful is beautiful. (Pulchrorum autumnus pulcher.)
FRANCIS BACON, *Essays: Of Beauty*. Quoted.

5 And there is healing in old trees,
Old streets a glamour hold;
Why may not I, as well as these,
Grow lovely, growing old?
KARLE WILSON BAKER, *Let Me Grow Lovely.*

6 Laura was blooming still, had made the best
Of time, and time return'd the compliment.
BYRON, *Beppo*. St. 23.

7 As a white candle in a holy place,
So is the beauty of an aged face.
JOSEPH CAMPBELL, *The Old Woman.*

As the clear light is upon the holy candlestick; so is the beauty of the face in ripe age.
Apocrypha: Ecclesiasticus, xxvi, 17.

8 No Spring nor Summer Beauty hath such grace
As I have seen in one Autumnal face.
JOHN DONNE, *Elegies:* No. 9, *Autumnal.*

9 It may be, old age is gentle and fair . . .
Still I shall tremble at a gray hair.
DOROTHY DOW, *Unbeliever.*

10 The dear old ladies whose cheeks are pink
In spite of the years of Winter's chill,
Are like the Autumn leaves, I think,
A little crumpled, but lovely still.

11 You are beautiful and faded,
Like an old opera tune
Played upon a harpsichord.
AMY LOWELL, *A Lady.*

12 To me, fair friend, you never can be old,
For as you were when first your eye I eyed,
Such seems your beauty still.
SHAKESPEARE, *Sonnets*. No. civ.

But spite of Heaven's fell rage,
Some beauty peep'd through lattice of sear'd age.
SHAKESPEARE, *A Lover's Complaint*, l. 13.

13 Women sit or move to and fro, some old, some young,
The young are beautiful—but the old are more beautiful than the young.
WALT WHITMAN, *Beautiful Women.*

XIV—Age: In Women: Its Ugliness

14 By candle-light nobody would have taken you for above five-and-twenty.
ISAAC BICKERSTAFFE, *Maid of the Mill*. Act i, sc. 2. (c. 1760)

And a very nice girl you'll find her!
She may pass very well for forty-three
In the dusk, with a light behind her.
W. S. GILBERT, *Trial by Jury.*

15 A lady of a "certain age," which means
Certainly agèd.
BYRON, *Don Juan*. Canto vi, st. 69.

She was not old, nor young, nor at the years
Which certain people call a *"certain age,"*
Which yet the most uncertain age appears.
BYRON, *Beppo*. St. 22.

16 There are three classes into which all elderly women that I ever knew were to be divided: first, that dear old soul; second, that old woman; third, that old witch.
S. T. COLERIDGE, *Table-Talk.*

17 She might be young, some forty years ago.
COWPER, *Truth*, l. 132.

18 Old women sit, stiffly, mosaics of pain, . . .
Their memories: a heap of tumbling stones,
Once builded stronger than a city wall.
BABETTE DEUTSCH, *Old Women.*

Once they were flowers, and flame, and living bread;
Now they are old and brown and all but dead!
MARYA ZATURENSKA, *Spinners at Willowsleigh.*

19 Phyllis! 'tis true thy glass does run,
But since mine too keeps equal pace,
My silver hair may trouble thee,
As much as me thy ruined face.
THOMAS FLATMAN, *The Resolve.*

20 To everybody's prejudice I know a thing or two:

I can tell a woman's age in half a minute—and I do.
W. S. GILBERT, *Princess Ida*. Act i.

One should never trust a woman who tells one her real age. A woman who would tell one that would tell one anything.
OSCAR WILDE, *A Woman of No Importance.* Act i.

1 What though she be toothless and bald as a coote?
JOHN HEYWOOD, *Proverbs*. Bk. i, ch. v.

2 Ladies, stock and tend your hive,
Trifle not at thirty-five;
For howe'er we boast and strive,
Life declines from thirty-five.
SAMUEL JOHNSON, *To Mrs. Thrale, When Thirty-five*, l. 11.

3 The hell of women is old age. (L'enfer des femmes, c'est la vieillesse.)
LA ROCHEFOUCAULD, *Maximes Posthumes*. No. 562. Said to have been addressed by La Rochefoucauld to his former mistress, Ninon de l'Enclos, who died in 1705 at the age of 90.

4 When you try to conceal your wrinkles, Polla, by the use of bean-meal, you deceive yourself, not me. Let a blemish, which perhaps is small, be undisguised. A fault which is hidden is deemed greater than it is. (Lomento rugas uteri quod condere temptas, Polla, tibi ventrem, non mihi labra linis. Simpliciter pateat vitium fortasse pusillum: Quod tegitur, majus creditur esse malum.)
MARTIAL, *Epigrams*. Bk. iii, ep. 42.

Double we see those faults which art would mend.
MARTIAL, *Epigrams*, iii, 42. (Sedley, tr.)

Sovereigns may sway materials, but not matter,
And wrinkles, the d——d democrats, won't flatter.
BYRON, *Don Juan*. Canto x, st. 24.

My aunt! my poor deluded aunt!
Her hair is almost gray;
Why will she train that winter curl
In such a spring-like way?
O. W. HOLMES, *My Aunt.*

5 The time will come when it will vex you to look at a mirror, and grief will prove a second cause of wrinkles. (Tempus erit, quo vos speculum videsse pigebit, Et veniet rugis altera causa dolor.)
OVID, *De Medicamine Faciei*, l. 47.

Here, Cyprian, is my jeweled looking-glass,
My final gift to bind my final vow:
I cannot see myself as I once was;
I would not see myself as I am now.
ALINE KILMER, *To Aphrodite: With a Mirror.*

6 She's six-and-forty, and I wish nothing worse to happen to any woman.
PINERO, *The Second Mrs. Tanqueray*. Act ii.

7 Fat, fair and forty.
SCOTT, *St. Ronan's Well*. Ch. 7. The Prince Regent's description of what a wife should be.

A fat, fair and fifty card-playing resident of the Crescent.
MELESINA TRENCH, *Letter*, 18 Feb., 1816.

I am resolved to grow fat and look young till forty, and then slip out of the world with the first wrinkle and the reputation of five-and-twenty.
DRYDEN, *The Maiden Queen*. Act iii, sc. 1.

8 Even in the afternoon of her best days.
SHAKESPEARE, *Richard III*. Act iii, sc. 7, l. 186.

By the sharp tooth of cankering eld defaced.
WILLIAM SHENSTONE, *The Schoolmistress*. St. 16.

9 I swear she's no chicken; she's on the wrong side of thirty, if she be a day.
SWIFT, *Polite Conversation*. Dial. 1.

10 So grieve not, Ladies, if at night
You wake to feel the cold December;
Rather recall the early light,
And in your loved one's arms, remember.
ANNA HEMPSTEAD BRANCH, *Grieve Not Ladies.*

XV—Age: Old Things Are Best

11 Alonso of Aragon was wont to say in commendation of age, that age appears to be best in four things,—old wood best to burn, old wine to drink, old friends to trust, and old authors to read.
FRANCIS BACON, *Apothegms*. No. 97.

Old wood to burn! Old wine to drink! Old friends to trust! Old authors to read!—Alonso of Aragon was wont to say in commendation of age, that age appeared to be best in these four things.
MELCHIOR, *Floresta Española de Apothegmas o Sentencias*, ii, 1, 20.

One who professes the maxim of King Alphonso of Castille—old wood to burn—old books to read—old wine to drink—and old friends . . . to converse with.
SCOTT, *The Antiquary*. Ch. 6.

12 Our nature here is not unlike our wine;
Some sorts when old continue brisk and fine.
SIR JOHN DENHAM, *Of Old Age*. Pt. iii, l. 245.

As for age, what that's worth depends on the quality of the liquor.
GEORGE ELIOT, *Adam Bede*. Bk. ii, ch. 21.

13 I love everything that's old: old friends, old times, old manners, old books, old wine.
GOLDSMITH, *She Stoops to Conquer*. Act i, sc. 1.

Old loves, old aspirations, and old dreams,
More beautiful for being old and gone.
J. R. LOWELL, *The Parting of the Ways.*

Cyna - 860-0314
409-8212
8200

Alzheimer's + related disorder assoc - 652-6446
in D.C. - 986-0777
- 352-5822

Nat'l institute of aging - 483-4258
" " of Health - 496-4000
1752

A.A.H.A. - 296-5960

AARP. - 872-4700

Nexis - Alzheimers

Marianne Emr
- 496-1752
Federal Building
7550 Wisconsin Ave
Bethesda Md.
Rm 6C12
South of NIH Campus

- Examples of Volunteerism - Eg Jewish Way
  - Information Board
  - Health Care - wheeling wheel chairs
  - Activities - favors for
    - Make Table Decorations
  - Boutique - Run to help raise money

Alzheimer's patients

Vols from Church - St. Marks Lutheran.
- Not very many - 6 people

- Entertainment event.

- Activities Director - ~~B~~ Cheryl Downing - x1500

Alzheimers

- Anecdote - Inspirational Story - age.
- Joke - Old Age - Mark Twain
- Event Info.

- Biliarakis office

Rep Bilirakis - 224-3121 Cap.
- elected in 82 225-5755

Bob Meyers. -
- 856-6218
- History?
- Funding?
- Background?

- 500 residents
$ 20 beds

- Private Funding
- Assoc. w/ Lutheran Church.
- Not for Profit
Residents pay - monthly.
- No Gov. Funding

Clearwater -
been there never.

- Will not fish
Spring either

Wyoming

- Ted Williams - Fishing Jokes

Herbert Hoover.
God does not take from man's life
the time he spends fishing.

Dave Lockman

~~A throbbing rod is better than a
limp stick.~~

- Outdoor Magazines - joke sessions

Spider Andresin
Saltwater Sportsman
(617) 439-9977 - Boston
Rep Cunningham

A guy catching lots of fish
Game Warden knew it was illegal
- Went out together
Stick of dynamite

- "Are you going to argue or go fishing!!

: older Americans' month" - may 1989 4

Article 2 sec 1 last ¶ ((so help me god))

May is older American's month

special programs

Belevue Biltmore tour

cruise

13th may Mother's day tea

Palm

Peggy Patore
586-6976
6476

- Dep Sec

2226

586-7573

- Hospitals - BLS - 523-1327

Thomas Nardone
523-1944

- *

—Fishing Joke

"A democrat goes ice fishing
gets ready - gets tackle
starts drilling
voice "There's no fish in there."
again
"Ey, stupid this is a hockey rink"

April 27, 1989

INFORMATION

MEMORANDUM FOR THE PRESIDENT

THROUGH: CHRISS WINSTON CW

FROM: MARK LANGE ML

SUBJECT: REMARKS FOR THE DEDICATION OF THE MICHAEL BILIRAKIS ALZHEIMER'S CENTER

I. SUMMARY

Attached are brief remarks to be given at the dedication of the Michael Bilirakis Alzheimer's Center in Palm Harbor, Florida, on Thursday, April 27, at 2:00 p.m.

II. DISCUSSION

You will deliver these remarks to an audience of roughly 1,000 people, after the dedication ceremony for the new Alzheimer's Disease center. In the audience will be Congressman Michael Bilirakis, who has been very active in this field.

These remarks emphasize two areas: 1) the threat posed to older Americans by Alzheimer's Disease, and the need for a cure, and 2) the value of volunteer efforts made by older Americans.

Isle of Milada

Alzheimer's
- Volunteers in the unit
- Can't leave the unit to volunteer

Isabelle Andrews x 743

Vol. outside of St. Marks
after 1:00

Nancy - Activities.

Lourie
Pat ~~Lowrie~~

Mike Spong

- Hospitals - Candy Stripe
- Rotary - Lions Club
- Mazons Kiwanis
- Sheriff's Youth Ranch
  - for boys in trouble
  - Run by Sheriff's dept.
- Zoo - Sponsored - 3 animals.
  - Collection to sponsor.
- Residents in house - telephone
  - Wheel Chairs
  - ~~Res~~ Shopping - trips supervision
  - Activities

Outside People + Residents.

- Kitchen in Alzheimer's unit
- Sewing curtains - decorating
- Personal Ministry
- Limited - Craft
  - Entertainment
  - ~~ind~~ endependent living
  - assisted living

MEMORANDUM OF CALL

Previous editions usable

TO: Rett

☐ YOU WERE CALLED BY— ☐ YOU WERE VISITED BY—

Dr. Gregory Spenser

OF (Organization) Census Bureau

☐ PLEASE PHONE ▶ ☐ FTS ☐ AUTOVON

763-7950

☐ WILL CALL AGAIN ☐ IS WAITING TO SEE YOU

☐ RETURNED YOUR CALL ☐ WISHES AN APPOINTMENT

MESSAGE

#'s are correct:

~~76 million~~

76,378,000 people 50+ in 2000

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