

Editorial: The Five–Five, Ten–Ten Plan for Alzheimer’s Disease

THE crisis in health-care costs, the rapidly growing number of older people, and the devastating toll of Alzheimer’s disease (AD) have spurred me to suggest a public–private working proposal, a plan-in-progress, to ameliorate the crisis until we can solve the problem completely.

My initiative is *The Five–Five, Ten–Ten Plan to Defeat Alzheimer’s Disease*. The goal is to slow the rate of deterioration due to AD by 5 years during the next 5 years and by 10 years within 10 years. The overriding aim of this 10-year enterprise is to discover treatments that will allow AD patients to continue to function independently. However, this approach will target not only the cognitive dysfunction associated with AD but also the behavioral disturbances that are so difficult and which often lead families to institutionalize their loved ones. If we achieve these objectives, the family burden of caring for AD victims will be greatly reduced as well as the cost of institutionalization.

The time is ripe for the launch of a major national campaign to find a treatment for AD. The necessary components are in place. We must focus our attention and efforts on this target to relieve the horrible suffering resulting from AD. This country has a long tradition of mobilizing its resources, energy, will, and passion when faced with a national crisis—and AD is a national crisis. People of this country are willing to put their shoulders to the wheel when they see a noble cause, an injustice, or when there is a reasonable plan devised to overcome an almost insurmountable obstacle. The Manhattan Project, the Man on the Moon program, and Desert Storm are but a few examples of such efforts. Is the mission of finding a treatment for AD any less noble, any less realistic, or any more costly than these bold ventures? If we do not launch such an initiative now, when are we going to do it?

When we speak to families of AD victims, it has been very difficult, at least until recently, to be upbeat and to assert that potent treatments are close at hand. However, several events have occurred to convince me that a partnership of the Federal Government, academia, industry, and family groups would indeed be effective in providing the support that will lead to new treatments.

For the past 13 years, we have been preparing to wage war against AD. Initially, the work was very frustrating because the enemy was so enigmatic. We simply did not know the disease and did not have the material or resources or an adequate army—the scientific manpower—to fight the war.

All that has changed. It is no longer a lost or hopeless battle or a question of whether the war can be won, but when will it be won. It is a question of time, concentration of effort, and commitment of resources. The infrastructure to insure a victory in this war has been assembled. Some of the most gifted and productive scientists in the world are working to find treatments for AD and are willing to tackle the questions. Assess-

ment instruments have been developed, standardized, and constantly fine-tuned. We have a national and international research network comprised of outstanding clinical centers with well-trained staff ready to initiate tests of new compounds.

There have been several extremely important scientific advances within the past year that have given us new leads concerning the etiology of AD which provide targets for drug development. Recent studies from several laboratories on the involvement of specific amyloid precursor protein (APP) modifications associated with familial AD, other studies implicating APP in neurotoxicity, work on the processing and function of APP, and studies of the role of neurotrophic factors in cell function all lead me to believe that this is a scientifically propitious time to expect positive outcomes from such an initiative. Our ability to discover compounds that will slow the deterioration of nerve cells and eventually prevent cell death is no longer scientific wishful thinking or theoretical speculation.

I believe that the behavioral disorders associated with AD are an important target for pharmacological modification and for behavioral management approaches. My optimism stems from a number of initiatives that are developing and nurturing and have come to fruition. The National Institute on Aging (NIA) recently awarded six program projects, titled The Drug Discovery Groups. These groups will investigate a variety of approaches to the development of new compounds for AD including second messenger systems, neurotrophic factors, drug delivery systems, and the processing and functioning of neural proteins.

We now have the ability to enroll very large numbers of carefully diagnosed AD patients for clinical studies through the 28 NIA funded AD Centers and 19 Satellite Diagnostic and Treatment Clinics. The scientific strength and the network of the AD Centers subsequently led to the development and funding of a 30-site national consortium to undertake rapid clinical screening and study promising compounds for the treatment of the cognitive dysfunction and behavioral disorders of AD. The consortium is now operational and has attracted a great deal of attention from pharmaceutical companies, with 13 companies indicating their interest in using the consortium to test new compounds.

Thus, all the pieces are in place to launch *The Five–Five, Ten–Ten Plan to Defeat Alzheimer’s Disease*. We must rally the Federal Government, academia, the pharmaceutical industry, the general public, and family support groups behind a plan of expansion, extension, and integration of these efforts to discover treatments for victims of AD.

We are at the threshold of the 21st century, and we face one of the most critical periods in our history since the Industrial Revolution. The demographic revolution, *The Graying of America*, has begun to challenge our ability to adapt to a different mosaic of society and will require drastic changes in in-

dividual attitudes and institutional priorities. As a country, we have had a remarkable history of intellectual, scientific, and engineering achievements. The technical and scientific knowledge that we have gained in recent years has allowed us to conquer outer space, explore the dark depths of the seas, to expose the most tightly held secrets of particle physics, unravel the puzzle of genetic messages, and to virtually eliminate some killer diseases. Given this impressive array of accomplishments, is it not reasonable to conclude that we either have the necessary technical information at hand or have the potential to generate the needed scientific knowledge to solve the problems associated with AD? The critical question is whether we have the will, the courage, and the wisdom to allocate the necessary resources to address this problem.

We are running out of time. The epidemic of AD will completely overwhelm our ability to pay for long-term health-care costs as the baby-boom population approaches the age groups of accelerating the risk for dementia. The cost in human suffering and lost opportunities is simply incalculable and unthinkable. I believe we have the necessary scientific leads to launch a bold initiative. We know what the targets are, and we can find ways to correct the neurological mischief.

It is no longer a question of whether we can do it, but when will we do it? I hope this country has the resolve to face the sacrifices and the challenges of bringing about the changes necessary to create a new order of national priorities and a more humane society for dealing with the dementing disorders of an aging population.

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