

Francoise Forette, MD
President, ILC-France
Professor, University Paris V

France, as well as all western countries, is facing an extraordinary Longevity Revolution. The mean life expectancy is now 73 years for men and 82 years for women. Around 20% of the population is over sixty years of age. In 2015, 40% of the population will be over fifty. In 2025, 800 millions persons will be over 65 worldwide

Then the political issue we have to address is : How can we maintain equity and promote the quality of life of all generations living together in our countries.

Determinants of quality of life

The main determinants of quality of life over sixty are satisfactory health status, financial autonomy, family links, positive image, social role and personal responsibility. The ethical challenge of our societies is to guarantee that economical pressure does not compromise the rights of this expanding population to highly skilled medical care if necessary (particularly in preventive areas), to fair retirement pensions or access to work, to a political influence, to a social role including access to culture and entitlement to productive life In aging.

All medical data demonstrate that a vast majority of the aging population is going to grow older in remarkable conditions of health, autonomy and productivity. This rising tide of candidates for a bursting longevity will rapidly expand with the baby-boomer generation.

On the other hand, two critical issues must be considered: First, a minority of elderly people remain at risk of invalidating chronic diseases leading to a devastating dependence. Research and prevention should progressively decrease its proportion Ethics and morale require a particular vigilance towards this small minority of the elderly, victims of chronic diseases often associated with unfavorable sociological conditions which may lead to a "no care zone".

The second critical issue is that there is a growing number of persons who happily reach a very advanced age, ninety, ninety-five even a hundred years. There are around 6000 centenarians in France but they will be 150.000 in 2050. These nonagerians and centenarians, though often healthy, remain a frail population, the autonomy of which must be often assisted.

These two phenomena must find innovative answers but they are marginal when compared to the increasing number of dynamic, healthy and productive aging individuals.

Health status, research and prevention

Healthy aging may be enhanced by three approaches which are closely linked: Prevention of pathological aging, ie prevention of age-related diseases, promotion of an optimal physiological status and progress in basic research on cellular, molecular and genetic mechanisms of aging.

I will focus my presentation on the prevention of age-related diseases because the tools of prevention are already in our hands.

Indeed, the compression of morbidity into the last few years of life hypothesized by Fries is no longer out of reach. The disability-free life expectancy is increasing more rapidly than the mean life expectancy

as shown by Robine and Ritchie.

The self-reported prevalent morbidity is still high in elderly persons. In a recent French study run on a representative sample of people 65 and over, the mean number of self-reported diseases is 7.6 per person. The number is more important in women, 8.4 per person than in men 6.8 (Sermet).

But a declining incidence of most conditions leading to disability is observed in Europe as well as in the US (Manton) due to the fact that most of the age-associated invalidating diseases are accessible to prevention arthritis osteoporosis, orthopedic problems, particularly hip fractures, diminished or lost hearing or vision and cancers.

The example of strokes

Stroke represents a very good example of an invalidating disease the decline of which is multifactorial (Whisnant). However, it is clear that a better control of the identified risk factors, hypertension, arhythmias, smoking, dyslipidemia will strengthen this trend.

Control of hypertension has been highly effective as demonstrated by the controlled studies run since the seventies.

The most recent ones were dedicated to elderly patients and the SHEP trial has proven that the benefit was also observed in patients over 80 with isolated systolic hypertension.

The last European study, SYST-EUR published last September in the Lancet, has shown that the new classes of drugs calcium-channel inhibitors and ACE inhibitors were as effective as the older ones in preventing all cardiovascular events. The conclusions of SYST-EUR was that stepwise antihypertensive treatment starting with nitrendipine significantly reduces the incidence of strokes and cardiovascular complications in elderly patients with isolated systolic hypertension. Treating 1000 patients for five years may prevent 29 strokes and 53 major cardiovascular events.

Moreover the **Syst-Eur Vascular Dementia Project** associated to the main trial has demonstrated that the treatment could also significantly reduce by 50% the incidence of vascular and Alzheimer's type dementias and that treating 1000 patients could prevent 19 cases. The potential reduction by half of the incidence of dementias may have important public health implications in view of the increasing longevity of populations worldwide.

The problem of dementias

Dementias of all causes still represent the most striking factor of impairment of quality of life after 60. There again, progress in research may radically change the painful fate of a number of elderly patients. Up to recently there was no treatment for AD; today, the patients may benefit of symptomatic treatments, such as the cholinergic drugs.

But a preventive approach is being developed. The preventive approach is linked to the identification of risk factors such as, besides age and gender, low level of education, genetic factors (family history of AD or genotypes as ApoE4), vascular factors such as hypertension and prior minor cognitive impairment which is highly predictive for the development of a dementia process years later. Checking these risk factors allows identification of high-risk patients.

The **preventive therapies** include estrogens, anti-inflammatory agents anti-oxydants, antihypertensive

agents, calcium-channel inhibitors, amyloid deposition suppressors and other innovative molecules. All the preventive approaches have to be confirmed by prospective, randomized large trials but they represent a serious hope for the future.

Prevention opens very large fields of progress in many conditions. Besides cardiovascular diseases and dementias, osteoporosis and fractures are a leading cause of death, disability and institutionalization. In women, one of the most effective preventive measures is estrogene replacement after menopause. In France the total percentage of treated women is less than 10%. But if you look at the recently menopausal women, the percentage rises up to 30%. Progress has been done but tremendous progress remains to be done. As underlined by Manton, "disease prevention, a delay in age at onset, or a disease cure all can cause morbidity prevalence to decline... For example, slowing the development of most diseases and increasing the age at which they appear by 10 years, would reduce their prevalence by half..."

Progress in Geriatric Care

The last point concerns the links between health status and highly skilled medical care. It is well known that health status depends on various factors : genetic and biological factors, socio-economic level, education, social security systems etc... But it has also been proven that access to specific care and quality of care are major determinants for improving the health status of older people and particularly, the frail elderly. Specific geriatric programs have been set up in the US and a number of countries. They are based on Specific Geriatric Assessment which may be performed in various types of units according to the personal needs of each patient. They have been evaluated and most of the studies have confirmed that they not only decrease early mortality but also improve the functional status of the frail elderly, reduce the frequency of discharge to institutions for long term care, decrease the rate of hospital readmission. This is probably the best way to promote quality of life.

While nearly all countries have to face increasing pressures for cost containment, it is interesting to point out that specific geriatric care does not inflate care cost and is proven cost-effective over the long term (Rub 95 Aging). It may even induce a significant reduction in the cost of hospitalization (Naughton). It is clear this is the key to better health for our aging population, therefore a key to a better quality of survival for the frail elderly.

Departments of geriatrics which associate comprehensive geriatric care, broad teaching activities and outstanding research programs remarkably fill the needs of the aging citizens and their expectation of healthy and productive aging. The Department of Geriatric and Adult Development founded by Robert Butler, former founder of the National Institute on Aging, has been a model for many countries to achieve our goals : the prevention of pathological aging, the promotion of an optimal physiological status and the development of basic research on the cellular, molecular and genetic mechanisms of aging.

In conclusion, we know, now, what to do and how to do the right thing. But we need a strong political will to promote the idea that healthy and productive aging is a challenge we can take up in our developed countries. This is the objective of the International Longevity Centers established by Doctor Robert Butler in the US, Japan and Europe and soon in Latin America.

But, on the other hand, we need to change our own attitude toward aging in order to drastically eradicate a sort of racial prejudice against the frail, handicapped, demented, incontinent, invalid elderly.

It is a human right to age well and healthy. It is also a human right to be taken care of with an

outstanding competency and a compassionate tenderness if, in spite of the fantastic progress which have been accomplished, a number of us are nevertheless victims of devastating conditions.

All human beings are equally important. They are all parts of our humanity.