A. Michael Davies

Older populations, aging individuals and health for all

Family planning and reduced infant mortality have led to an explosion in the number of elderly people. There are already 300 million people aged 65 and over and by the year 2000 there will be over 400 million, two-thirds or more of them in the developing countries. Great gaps still exist in our knowledge of health and disease in the elderly, of how best to prevent or treat illness among them, and of how to care for those who become dependent. Although the precise impact of aging on societies awaits clarification, governments will undoubtedly have to develop social and health policies so as to adapt equitably to the forces of change.

There are more old people in the world than ever before and their special needs promise to have a major effect on public policy. The growth of elderly populations is favoured by the health-for-all strategy. The elderly of 2050 have already been born and have survived the hazards of infancy. As family planning becomes the norm and premature mortality is reduced, an increasing proportion of children born will survive to old age. Some old people will be healthier than their forebears but many will require health care and social support. The best ways to preserve health and treat disease in old age are by no means clear and we have not yet come to grips with the complex impact of aging on society.

Changes in fertility patterns in many countries have reduced the numbers of children and increased the proportion of older persons. Reductions in infant mortality have increased the proportion of people who reach adulthood, while reductions in mortality in middle age have improved the chances of achieving the oldest ages. In northern European countries this process started at least a century ago; today 15% of their populations are aged over 65. At the opposite extreme, the process is only just beginning in tropical Africa, where less than 3% of the people have reached that age (1).

In 1988 it was estimated that there were over 290 million persons in the world aged...
at least 65. By the year 2000 there will be 410 million in this age group, representing a growth of 2.4% annually. Today, more than half of the world’s elderly people are in developing countries. By 2020 there will be 470 million of them in these countries, twice as many as in the developed countries. China and India will have contributed greatly to the increase (2).

Not only is the proportion of elderly people increasing, but the elderly themselves are aging. The oldest of the old, those aged at least 80, are the fastest-growing section of the population in developing and industrialized countries alike. They currently constitute 14% of the world’s elderly people, the proportion being higher in developed countries and lower in those just starting to age (Fig. 1).

**Fig. 1. Elderly populations, 1985.**

The degree of aging of a population can be determined by measuring the proportion of it over a certain age, which ranges from 55 to 65 years, depending on the authority concerned. The age at which people are said to become old usually derives from administrative decisions, for example on the age of retirement. As the elderly have become more vigorous, some countries have raised the age of retirement. Chronological age is not a good measure of aging.

Alternatively, life expectancy can be assessed. This means predicting how long an individual of a given age will live, assuming that the probability of dying at each age in the future will remain constant. Life expectancy at birth is greatly affected by infant mortality and varies from 49 years in Bangladesh to 77 years in Japan (Fig. 2). In general, females can be expected to live 3–8 years longer than males. When life expectancy is calculated for people who
have passed the stage of early adulthood the differences between rich and poor countries are reduced. A woman aged 55 in Costa Rica, for instance, can expect to live to be 81, only 1.6 years less than a Japanese woman of the same age.

Female mortality is lower than that of males at nearly all ages. The only exceptions are in a few countries where the low status of females helps to neutralize their biological advantage. In the majority of populations there are more old women than old men, and the difference increases with advancing age.

Death rates at advanced ages are beginning to slow down in some countries. More persons over 80 live longer than would be the case if they had died at the same rate as younger people. This may be because people over 80 are biologically different from younger people.

**Death and illness**

As people age the commonly reported causes of death change from acute infectious and parasitic diseases to chronic diseases, mainly those of the heart, cancers and stroke. Infectious disease may, however, still be a major cause of death in older residents of the African tropics. Where the evidence is comparatively trustworthy, differences in the numbers of deaths from diseases of the circulatory system most closely explain differences in total mortality. Countries where the life-span is increasing beyond 65 have decreasing numbers of deaths caused by cardiovascular diseases. Where there is an increase in mortality in this category, as in countries of Eastern Europe, the life-span is stationary or decreasing. Differences in the numbers of deaths from cardiovascular disease also partly explain reported differences in mortality rates between men and women (1).

These comparisons are based mainly on data for people aged 65–74, the accuracy of death certification diminishing at the highest ages. In the very old, several diseases may co-exist with the normal physiological deterioration of old age, making clinical diagnosis difficult.

If a patient is to receive treatment, scientific medicine requires the finding of a condition that can be treated. However, among the afflictions of old people are some that do not fit into the ordinary classification of diseases. They cannot be treated in the usual ways and are of diminished interest to physicians and research workers. Senile dementia used to be considered uncommon or an inevitable manifestation of extreme old age. Only when it became Alzheimer’s disease did it attract the attention of research workers.

Whatever the causes of death, however, the fall in age-specific mortality has contributed to an increase in the sizes of elderly populations in several industrialized Western countries, among them France, Sweden, Switzerland, the United Kingdom, and the USA (3). The effect has been greater than would have been forecast in 1950 on the basis of contemporary mortality rates. The number of old people requiring assistance in the next century may prove to be greater than currently foreseen. For some,

**Chronological age is not a good measure of aging.**

increasing survival brings increased frailty and morbidity. Old people who are ill live longer than formerly, at least in the richer societies, and there are more cases of disease and disability that need to be cared for rather than cured.
Studies in Canada, Holland, Israel, Scotland, the USA and elsewhere show that visits to
the doctor increase with age and that
women make more visits than men. Admissions to acute hospitals increase even
more steeply with age and here, too, more

A lack of formal education may
limit the ability of old people to
compete for increasingly technical
jobs.

women are involved than men. Data from
the USA suggest that morbidity at advanced
age from cardiovascular diseases, cancer and
diabetes has increased even though mortality
has dropped (4).

Defects in sight and hearing are particularly
frequent in the elderly. Early detection and
treatment can prevent much misery and
avert a chain of undesirable consequences.
Diseases of the mouth, teeth and gums are
very common and usually neglected in the
elderly populations that have been studied.

Also prevalent among old people are
problems with the feet, varicose veins, aches
and pains in the joints and, of special
significance, lack of control of the
sphincters. To what degree distressing
conditions are inevitable in old age and to
what extent they result from treatable
pathology is still an open question.

However, there are some indications that
the health of the old may be improving.
Successive cohorts of 70-year-old Swedes,
only 5 years apart, have been shown to be
healthier than their predecessors, while
surveys in Japan show a higher proportion
of healthy old people than in Western
countries (5).

Conditions of the old

Since women live longer than men there are
more widows than widowers. In many
countries up to half of the women over 65
have lost their husbands and over three
quarters of women over 80 are widows.
Elderly widowers often remarry but the
probability of elderly widows doing so is
smaller.

In developing countries, few elderly people
live alone. For example, only 2% of those
aged 60 and over in Fiji, Korea and the
Philippines live apart from their families (2).
Nearly a third of elderly Americans,
however, live alone and nearly half of those
aged 75 and over do so. In the United
Kingdom, 80% of elderly people living
alone are women. These variations are
linked to cultural patterns, stages of
development, and social organization.

The elderly in developing countries are most
likely to live with their families in rural
areas and to continue to work in agriculture.
However, this traditional support of the
elderly by their families is being eroded in
many countries as urbanization takes place.
The migration of young adults to distant
cities can result in older relatives being left
with little social support.

Elderly people are often illiterate. Even
in developed countries, educational
opportunities 50–60 years ago were far fewer
than they are today, particularly for women.
In the Philippines, for instance, 84% of
young and middle-aged adults were literate
in 1980 but only 51% of people aged 65 and
above could read. For Singapore the
corresponding figures were 84% and 38%,
and for Bangladesh they were 28% and 19%
(2). Even in the USA, where 86% of adults
have completed high school, the proportion
for those over 65 is only 48%. And in
Greece, while 14% of elderly men have
completed high school, the figure for elderly women is only 6%.

In the future a lack of formal education may limit the ability of old people to compete for increasingly technical jobs. Already, indeed, physically less demanding work in production, sales and service is gaining importance as a source of employment for people over 65 in developed countries. Old people in countries undergoing rapid industrialization will be at a disadvantage.

To what extent will public policy support the elderly? In previous generations, proportionately fewer persons reached the age of 65 than do today and their subsequent survival was shorter, so that money could be found for their pensions. Today, when formal education delays entry into the workforce and the population of retired persons has increased, the number of people over 65 per 100 persons aged 20–64 has risen enormously. In Japan it was 10 in 1950 and will rise to 30 by the year 2010, when it will reach 34 in the Federal Republic of Germany. Some countries, such as Brazil and Singapore, are showing the same trend to a lesser extent. In China it is expected that the corresponding figure will reach 40 within the coming half-century as a result of fertility control.

What support will the elderly need? How can the cost be met? The answers will involve decisions on the age of retirement, pension policy, and priorities in social welfare.

Health and function

When asked “In general, how do you feel?” or “How do you rate your health?” most elderly people answer “Well” or “Very well”, or “Good” or “Very good”. In a WHO study covering eleven countries, most of them in Europe (6), 75% of men aged 60–64 rated their health as good, and although the percentage decreased with age it was still 58% at 85–89. The answers to such questions are, of course, coloured by the cultural framework (it may not be acceptable to complain), by experience (comparison with others), by objective functional status, and by what a doctor or other health professional has said.

In fact it is extremely difficult to define health in old age, let alone measure it, and there is little agreement as to the point when normal decline becomes disease. We can, however, define and measure function. The maintenance of a minimal level of autonomy — the ability to function within a given social setting — has been defined by a WHO scientific group as the goal of health and social services (5).

Functional ability

The measurement of functional ability is essential for the planning of services. It should cover physical, mental and psychological functioning, support available from family and community, economic resources, housing and the environment. Physical functioning includes the ability to be mobile, to cope with essential daily tasks,
from the USA show that two-thirds of individuals aged 75-84 have no difficulty in walking 400 metres, 80% can lift 5 kg easily, and 72% can climb 10 steps without difficulty or stopping (7). Men do better than women at all ages in both such objective matters and the more usual subjective ones. As women live longer, some are at greater risk of being disabled for a longer time than men: the majority of the disabled in old age are women.

The severity and consequences of disability can readily be assessed by old people and their families but determination of the underlying causes requires medical intervention. Thus difficulty in climbing stairs may be due to arthritis of the knees, disease of the lungs, or heart failure, for which the treatments are very different.

**Health promotion**

There is ample evidence that a healthy life-style before and during middle age can help promote a healthier old age. But it is never too late to stop smoking, to change to a prudent diet and to take moderate exercise, for these things induce a feeling of well-being and may diminish the risks of cardiovascular disease and cancer, although firm evidence about this is still lacking.

Much has been written on the need for screening and early detection of disease to prevent deterioration. Screening for problems of sight, hearing and chewing can be of considerable help when appropriate treatment is available. However, the value of other routine physical and biochemical check-ups and of routine prophylaxis by means of vitamins, minerals and hormones is still not proven and clinical trials will be needed before they can be widely recommended.

**Services for the elderly**

The old should have the same access to general health services, including primary care, as the young. But in the planning and provision of services they must be
recognized as a distinct group, with special needs for combinations of health services and social support for long periods, both in the community and in institutions.

Ideally, there should be a spectrum of care available to the elderly, ranging from health promotion and primary care to support for the sick and disabled, and their families, at home. For the relatively few who cannot be adequately maintained at home, institutions should be available. These should range from acceptable forms of congregate housing to nursing facilities of varying sophistication, depending on individual need. Community centres, day-care centres, and day hospitals should be included. Institutional care should be provided only after a trial of the alternatives and the elderly themselves should be given a voice in the use of all services.

Of course, in most countries such goals will be unobtainable for decades to come. In all cases, the maintenance of increasing numbers of frail elderly people in their homes will depend on continuing family support, and thus on support for families from the community, as well as on adequate primary care. Sooner or later, however, every government will have to allocate resources to the provision of these services.

Such services presuppose the training of health personnel in geriatrics, gerontology, communication, support and nursing. Progress in this direction has been very slow, especially in medical schools.

Research on aging

Comparatively little research has been done on the processes of aging and the characteristics of the elderly. Studies are needed on many subjects, ranging from the changes associated with the aging of cells and organs to the whole functioning of old persons and their responses to preventive and therapeutic regimens. And, because independent functioning requires social support and the right economic and environmental conditions, it is necessary to be aware of the interactions between these factors and the biomedical variables.

Much can be learned about the process of healthy aging by cross-national and longitudinal comparisons of representative populations of old people. The WHO programme for research on aging defined this as its first priority (8). Standardized population survey measures and instruments will be designed to ensure that the results are comparable across different countries and cultures. The findings from such surveys should provide many nations with the first objective appraisals of the situation of their elderly citizens. Health services research and studies of the cost-effectiveness of different treatments or preventive regimens are vital components of the programme.

The acquisition of such information and its application in health and social policy are difficult and slow. Specific priority needs for research and their adaptation to local situations have been listed by the WHO research programme on aging (8), and the WHO Expert Committee on the Health of the Elderly (9).

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The care and welfare of the elderly will become a test of the ability of both developing and developed countries to adapt equitably to changing circumstances.
The aging of populations brings so many problems that we are in danger of regarding longevity as a burden rather than a blessing. The needs of the old affect every aspect of social organization at a time when many national coffers are empty and industrialization and urbanization are exacerbating the disadvantages of the elderly. Support for the elderly is a social, moral and economic question and requires political will for an integrated solution. Health care, though vital for many, is only a part of what is required. Ways must be found within the health-for-all strategy to help the elderly to be active members of society. The care and welfare of the elderly will become a test of the ability of both developing and developed countries to adapt equitably to changing circumstances.

References


Discussion

Ryoichi Sasakawa

—To age or not to age: an attitude of mind?

I was born in 1899. Fortunately I am quite healthy and do not need glasses to read. I exercise every morning and work 365 days a year for the welfare of my brothers and sisters on Earth.

When people ask me about the secret of my good health, I say that aging is like being robbed of the precious gift of life. When I reached the age of 80 I decided to shed 60 years. So today, ten years on, I am a 30-year-old, feeling as vigorous as ever.

I pay great attention to food. There are many, many people in the world who do not have enough food to sustain healthy life, so when I eat I do so with gratitude and appreciation. I never spoil food and I chew it very carefully, inwardly thanking the farmers and all those who produce it for us. I do not eat the flesh of animals and birds because they are our friends.

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Moderation is vital. Regrettably, people tend to eat and drink too much and to behave aggressively. The importance of moderation and respect for others is often stressed in oriental proverbs. Moderate eating, drinking and social behaviour, and a keenness to help others, are basic ingredients needed for health in elderly people.

I applaud the efforts of WHO to achieve “Health for all by the year 2000”. It was in support of this goal that I established the WHO-Sasakawa Health Prize, awarded annually for outstanding innovative work in health development. An international conference on “Health in one world” was held in June 1989 on the occasion of the fifth anniversary of the founding of the prize.

I believe that health for all can become a reality through the active participation of everyone, including the elderly. I pray that prosperity, health and happiness will be granted to all people, especially the elderly, who have contributed so much to the development of each society.

Nana Apt

—Plight of the elderly in changing societies

Formerly, caring for the elderly was an accepted responsibility of the extended family in Africa. Families in most countries of sub-Saharan Africa were of this type. Relationships within the family were very strong and members of the family were closely-knit socially and economically. The extended family system was thus a kind of social security scheme whereby the young, widowed, old and infirm were all taken care of. The traditional African family was, in short, a self-sufficient and health-sustaining unit.

The elderly used to be an integral part of the family unit with clearly demarcated high-ranking positions. Their life-long experiences and roots in folklore, religion, tradition and culture led to them fulfilling important roles in ceremonies to do with birth, marriage and death. The elders’ words carried great weight in the decision-making process within the family.

Compared to those in Western industrialized societies, family relationships in Africa remain relatively strong, but the role of the larger family as a provider of welfare is diminishing. The family structure is becoming increasingly nuclear rather than extended, especially in urban areas. Almost everywhere in Africa the marriage pattern has become less precise than before. The anchorage of being married into a family has become less firm; African marriage is increasingly something between two people, rather than between two families. This has led to a destabilization of the values that used to sustain people of all ages in a closely-knit society. It is against this background of value change that the lives of old people in Africa should be viewed. Because of the rapidly changing situation, research on aging is urgently needed.

As Professor Davies says, chronological age is not a good measure of aging. It is perhaps

The extended family system was a kind of social security scheme whereby the young, widowed, old and infirm were all taken care of.

noteworthy that the dates of birth of many elderly people in Africa are not known. This creates special difficulties for researchers into aging if chronological age is one of the
things they wish to relate it to. At the first 
African conference on gerontology held in 
Dakar in 1984, it was recommended that 
gerontological studies should rely on 
concepts and methods relevant to Africa, 
with particular regard to the determination 
of age and the use of specified age groups. 
This was considered necessary to avoid 
pitfalls resulting from undigested imitation 
of Western models and from a failure to 
explore the potentials and limitations of 
African cultural values.

M. Thangavelu

—Family, community and state 
should work together for the 
welfare of the elderly in 
developing countries

As has happened in developed countries, the 
numbers of old people in developing 
countries are rapidly rising and heavy 
demands are consequently being made on 
families, communities, social services, and 
scarce resources in general. Urbanization, 
migration and the reluctance of nuclear 
families to look after the elderly are 

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happiness.

emerging as social challenges. The 
traditional system, with its capacity to 
manage the needs of the elderly in the 
family context, is under stress. Governments 
in developing countries are becoming 
increasingly aware of this and are concerned 

to formulate policies and programmes for 
the health and welfare of the elderly.

Age discrimination occurs in organized 
sectors but not in the unorganized sector in 
rural areas, where old people continue to 
work as long as they wish. Serious 
economic, social and emotional upheavals 
may be experienced by people subjected to 
an artificial cut-off date for retirement. Yet 
prudent fiscal policy could guarantee an 
income equal to that earned at the time of 
retirement, indexed to the cost of living. 
Employees could contribute a little more 
towards pensions and life insurance. 
Governments could subsidize families and 
communities to care for the elderly.

Under a government-aided scheme in 
Indonesia, the provision of food, clothing 
and health care to the elderly in the precise 
locations where they have lived all their 
lives has significantly contributed to their 
health, welfare and happiness. They are not 
transplanted to old people’s homes but 
integrated into the community. Their needs 
are met without any economic or other 
stress on families or neighbours.

In Thailand the Buddhist temples in the 
villages offer excellent day-care services. A 
pleasant environment is provided for the old 
people, who sing hymns, read, talk about the 
past, perform physical exercises, share meals, 
and return home to join their families at 
night. Urban centres have well-organized 
senior citizens’ associations, clubs and 
cooperatives, where consumer goods are 
available at discount prices. Religious talks, 
entertainment, holiday trips, and picnics are 
organized and the taking up of hobbies is 
encouraged. In some centres the old people 
are trained for new occupations. On the 
basis of periodic reviews of welfare measures 
provided by voluntary and governmental 
agencies, group discussions are held, training 
of old people is promoted, and activists 
among them make draft proposals for

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programmes and policy changes relating to the health and welfare of the elderly. These suggestions are submitted for consideration by the government.

Efforts of the elderly to achieve self-reliance and integration into the community are highly commendable. Through lifelong self-discipline and the adoption of appropriate life-styles, old people in any society can be independent, creative and productive, and can contribute to the socioeconomic development of the community.

The individual, family, community and government should collaborate to promote intergenerational solidarity, employ the talents and resources of people in all age groups, and, in particular, render help to the aged. Human rights should be guaranteed to all, irrespective of age, sex, religion, race, and social or economic status. The family and community offer a proven foundation for the happiness and welfare of people. The state should urge each new generation to look to its responsibilities for the welfare of the old.

The basic responsibility for the care of the elderly should lie with family and community. Social policies should underpin cultural and traditional values that induce harmony between the generations and lead to caring for the old by the young. State care for the elderly is no substitute for filial kindness. The state, however, should promote family relationships and encourage people to take responsibility for the welfare of others. Furthermore, governments should promote social harmony through planning, education, training, services and research.

Professor Davies touches on the need to re-educate people as they grow older in order that they may continue to work in an increasingly technical world. Preparation for a useful role in old age should begin not later than the middle period of an individual's career. Opportunities should be available for education and training leading to desired retirement activities.

Certain afflictions of old age result from lifelong habits. Corrective action is possible during middle age when education could help people to retain good health. Improvement of housing and environmental conditions could considerably reduce the incidence of accidents. Nevertheless, individuals and families should have some ability in self-care and the care of others, and government support in achieving this is desirable.

The management of degenerative disorders and the rehabilitation of the disabled needs institutional care, which should be made available as an integral part of primary health care, with adequate referral services. The economic burden of transport, treatment and rehabilitation should be taken away from old people and their families. Government initiatives in community-based health services are essential to guarantee human dignity and the fundamental rights of old people.

The talents and wisdom of the elderly are essential if humanity is to achieve peace, prosperity and happiness.

Hans Peter Rhomberg

—Special attention should be given to the training of care-givers

As Professor Davies points out, services for the elderly need well-trained personnel. Even in some highly developed countries,

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medical schools have failed to adapt to the specific needs of the growing number of old people: medical students, doctors at the postgraduate level, and nurses commonly lack geriatric know-how.

In the Austrian Tyrol the number of people aged 65 and over has grown by a third in the past twenty years; that of people over 70 has increased by half, while there have been two-thirds and almost threefold increases for people aged over 80 and 90, respectively. In this situation there is an obvious need for the medical curriculum to include special lectures and teaching sessions on geriatric medicine and gerontology.

On a wider scale, the International Society and Federation of Cardiology, in association with WHO, has organized ten-day teaching seminars on cardiovascular epidemiology and prevention, which could serve as a model for the training of postgraduates from all over the world. These seminars have created a network of some 700 highly qualified young researchers who have, to a great extent, brought about the successes in the prevention of cardiovascular diseases which have occurred during the past 20 years.

It is equally important to have sufficient specially trained nurses. This might mean creating a separate diploma to attract young people with a vocation for work with the elderly. Alternatively, a supplementary course for registered nurses might be offered. In this connection not only hospitals need highly qualified personnel, but also residential homes, nursing homes and the home care sector of public health nursing.

In order to allocate limited resources and manpower for the elderly in the best possible way, planning is clearly necessary. It has proved better to plan at district level than at county or national level, areas of some 100 000 inhabitants allowing relatively specific and flexible planning. A district in a big town might have different problems to those of a mountainous area with widely scattered small villages. Even the age distribution might vary between areas, in some cases because of retirement migration. Areas that attract concentrations of retired people need well-adjusted infrastructures to cope with them.

WHO's Copenhagen office collects information on norms for services for the elderly in different health care systems from collaborating centres throughout the Organization's European Region. These centres should provide new ideas and should become valuable models. The norms should give guidelines on requirements for community services, such as home-helps, public health nurses, day centres, and nursing homes. There is also a great need for data on short-term care units for the relief of carers in families, and on the feasibility of using mobile day hospitals. Furthermore, information on general hospital and geronto-psychiatric services, consultants in geriatric medicine, rehabilitation and long-stay wards, and places in day hospitals is of interest in this connection.

When planning services for the elderly it should be remembered that, in most cultures, the older generation used to be part of the family. Urbanization, the double role of women at home and in the workplace, the smaller size of dwellings and the
increase in life expectancy, have resulted in more and more elderly people entering institutions.

Far too many hospital beds are occupied by elderly patients, who, after acute illness, may require nursing beds if their condition requires more than home care. Unfortunately, many old people suffer if they are isolated from home and family. It is beneficial to have relatively young people in the same wards as the elderly, because this makes it easier to motivate the old people than would otherwise be the case; moreover, they are less depressed and improve more quickly. Sometimes younger patients help to care for older ones. This relieves the workload of nurses and might even reduce the number required. No less important is the relief from psychological stress experienced by nursing staff working exclusively in geriatric wards or terminal care units. This affects younger nurses in particular, who frequently decide to seek different employment. Older staff sometimes wear themselves out. Physical stress also occurs: elderly patients may have to be lifted out of bed, and this, particularly for women, is a strain on the spine, joints and muscles, sometimes leading to early retirement.

The training of sufficient staff to care for old people should receive high priority in all of those countries where there is a great shortage of qualified nurses.

**José Manuel Borgoño**

*Old people should be seen as a distinct group with special social, cultural and health needs*

I agree with Professor Davies about the main causes of the increases in numbers of elderly people. However, intensive urbanization, especially in Latin America, has increased the impact of the phenomenon. Furthermore, urbanization leads to the concentration of old people in central areas of cities.

Although people live longer on average than formerly, many of the elderly are not in good health, do not enjoy themselves, and do not have access to facilities for recreation and welfare. These are important elements to consider when devising policies and programmes for health activities among old people.

There is a need to study in more detail the life expectancy of people over 60 as a basis for improving health programmes for the elderly. In Latin America the principal causes of death in the elderly are very similar to those in the developed countries, but there is also a high percentage of ill-defined causes.

The lower mortality of females than males in all age groups in most countries and the higher incidence among females of mental disease should be investigated and taken into account when health activities for the

Although people live longer on average than formerly, many of the elderly are not in good health, do not enjoy themselves, and do not have access to facilities for recreation and welfare.

elderly are programmed. Elderly males should be seen as a high-risk group.

Defective sight and hearing, dental problems, and undernutrition have a tremendous impact on the functional...
capabilities of old people, yet corrective measures are not difficult to apply. As Professor Davies says, these matters are often neglected.

Defining health in old age is not easy, and depends on our knowledge of the functional level of autonomy in various social and cultural settings. The planning and provision of services should take account of old people as a distinct group with special social, cultural and health needs. Community participation is vital, as is the involvement of nongovernmental organizations.

Teamwork is essential if integration, efficiency and a wide range of activities are to be achieved. Nursing personnel are very important in caring for, advising and referring the elderly, while psychologists, occupational therapists and physiotherapists also have key roles to play. The doctor is head of the multiprofessional, multidisciplinary team. For many years to come in the developing countries there are not going to be sufficient geriatricians, and therefore general practitioners will have to be capable of handling old people's problems. The training of specialists in this field will have to be planned. Many health problems of the old could be prevented if younger people were encouraged to adopt healthy life-styles and if preventive measures and, where available, early diagnosis were used.

Recreational activities are important for old people, helping them to enjoy life and to endure morbidity.

As Professor Davies says, there are many gaps in our knowledge. What, for instance, is normal functioning in old people? What is their capacity to react against stress and disease? Studies on these and related matters are in progress in Canada, the USA, and various European countries, and the World Health Organization has its special programme on the health of the elderly, in which certain problems, e.g., senile dementia, are given particular attention.

Sven Thiberg

—Confront the differences in life expectancy between peoples of rich and poor countries

Professor Davies dramatically illustrates the global inequalities in life expectancy. On average a person born in Bangladesh has 28 fewer years of life than someone born in Sweden. The idea that this can be explained by genetic differences is controverted by the fact that life expectancy can vary in any ethnic group over time; thus it took some two hundred years for Sweden's population to become 30 years older in the statistical sense. Furthermore, the difference in expected length of life varies greatly between social strata in a population with a given genetic base.

Physical environmental factors affecting life expectancy may be natural or man-made. Man's destruction of the environment is increasingly important. Access to clean water, hygiene, protection from adverse climatic conditions, and security from violence involve a delicate interplay between nature and "culture". In many societies this fails to happen, with the result that life is endangered. Water shortages and desertification compete with political conflicts in undermining conditions for life in vast regions of the world. Eskimos and aboriginal populations of rain forests face significantly different conditions of climate.
and economy but share similar life panoramas. In contrast, squatter life in urban chaos and organized rural life in primary village communities in the same region have completely different relations to the same macroenvironment.

Access to sufficient food of the right composition is clearly essential if longevity is to be achieved. However, economic prosperity may not be fully reflected by improved nutrition, and diseases of development may confound the picture.

There is no doubt that medical advances have greatly enhanced the prospects for long life. Good hygiene and competent medical care result in improved survival at all ages.

Loneliness and isolation are threats to health. Family structure, the degree of social and cultural continuity, and the spatial organization of society govern the opportunities for social integration in different age strata.

The way in which different age groups are integrated into working life, political life and cultural activities varies between societies. The elderly have perhaps the greatest diversity of roles. Children and young people are allowed to take part in society in very different conditions in different countries. It might well be asked how these variations affect life and death.

What social structures and systems give the best conditions for a long and rich life and how are they generated and maintained? If there is a fundamental human right to long life and if it can only be realized through an interplay between a number of factors over and above material conditions, then it is important that these factors be taken into account.

Gary R. Andrews

—Progress requires the effective generation and use of information

People who have long been concerned about the health of the elderly often ask why so much time has elapsed before this has been confronted as a priority issue. Furthermore, the question arises as to whether the

Innovative approaches should be explored so as to ensure the translation of data into terms that are meaningful to policy-makers, educators, planners and practitioners.

responses to it are appropriate, soundly based and adequate.

Professor Davies clearly sets out the main problems to be addressed, providing a reasoned and informed approach. His proposals, if implemented now, would lead to great improvements in health and well-being for elderly people in the future. He also poses key questions on research, education and practice which should be addressed urgently. It is vital to consider how to generate information that is essential for policy-making, education and the planning of services, and how to ensure that data are appropriately analysed and effectively applied to policy development.

Most countries have shown little desire to invest in major research efforts so as to link the generation of data, an improved understanding of aging, and the needs of the

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elderly with the processes of policy formulation and review and the planning and evaluation of services.

A high priority should be given to applying modern technology to the gathering, analysis and reporting of information. Aging is a long-term process for both individuals and populations. Data are needed which are sensitive to the processes of change in health and functional states as people grow older and to the nature of the transitions they experience on passing from one state to another. These processes and their manifestations vary widely between individuals, groups and generations, as well as between geographical, social and cultural settings. Attention needs to be paid to establishing research, information and evaluation capacities wherever population aging occurs. Choices will have to be made between various options for responding to emerging health and social needs. Professor Davies correctly notes that standardized methods of data collection and research are needed to facilitate cross-national and cross-cultural comparisons.

Some potentially valuable work has been initiated in this area, including the WHO research programme on aging, referred to by Professor Davies, and the international collaborative project on the measurement of healthy life expectancy. The findings of such projects should be applied to the basic information needs of communities, nations and regions at every level of demographic transition and socioeconomic development. Although information needs and resources vary in extent and sophistication and have to be adapted to local circumstances, a minimum essential requirement should apply universally. Increased coordination between nations, research institutions and international agencies is desirable in order to ensure that efforts and resources are used to the greatest possible advantage.

It is not enough merely to collect and report information. Innovative approaches should be explored so as to ensure the translation of data into terms that are meaningful to policy-makers, educators, planners and practitioners. In studies in the Western Pacific, South-East Asia and Eastern

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**Table 1. Relationship of data to policy and programme development**

<table>
<thead>
<tr>
<th>Issue/problem</th>
<th>Information/data</th>
<th>Policy</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of dementia and depression</td>
<td>Mental status and change with age</td>
<td>Promotion of mental health of the aging</td>
<td>Counselling and community care mental health care</td>
</tr>
<tr>
<td>Poverty</td>
<td>Economic resources of the elderly</td>
<td>Minimum income and social support</td>
<td>Financial supplementation assistance</td>
</tr>
<tr>
<td>Relationship of health and the aging</td>
<td>Physical and mental health status and change over time by the elderly</td>
<td>Health care of the aging</td>
<td>Provision of primary health care and coordination of care</td>
</tr>
<tr>
<td>Relationship of health services utilization and aging</td>
<td>Utilization of health services</td>
<td>Health planning for the aged health services</td>
<td>Provision of comprehensive care</td>
</tr>
<tr>
<td>Relationship of life-style and health</td>
<td>Life-style, risk factors and age</td>
<td>Prevention of disability and dependence</td>
<td>Health education and promotion</td>
</tr>
<tr>
<td>Relationship of disability and aging</td>
<td>Disabilities/activities of daily living and performance</td>
<td>Minimization of handicap</td>
<td>Provision of aids and community assistance</td>
</tr>
<tr>
<td>Mobility and aging</td>
<td>Transport use and problems encountered</td>
<td>Access for the elderly</td>
<td>Provision of special transport</td>
</tr>
<tr>
<td>Accommodation problems and aging</td>
<td>Accommodation patterns and needs</td>
<td>Housing and accommodation</td>
<td>Alternative accommodation provisions</td>
</tr>
<tr>
<td>Family and community roles and aging</td>
<td>Social resource and support; intergenerational exchange</td>
<td>Family and community responsibility</td>
<td>Family support services</td>
</tr>
</tbody>
</table>

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Mediterranean Regions of WHO, a simple but useful schema has been adopted for relating data collection and research activities to policies and programmes (see table). However, this represents only a starting point in the development of protocols and algorithms that can help policy-makers to assimilate and use data.

Increased attention is now being paid to the issues associated with population aging. The lag between knowledge and action can be at least partly explained by the lack of timely, relevant and accurate information. Information has rarely been presented in ways appropriate for use in policy-making, programme-planning, evaluation, education and training. The shortage of information is now being tackled more effectively. A great effort will be needed globally to ensure an improved understanding of how data can be used with more effect. The achievement of the goals set out by Professor Davies will depend to a considerable extent on how committed we are to addressing these basic concerns and on the resources allocated to relatively long-term efforts rather than to shorter-term political agendas.

**Sally Greengross**

*Health promotion should be given greater prominence*

Professor Davies makes it clear that there are going to be many more, longer-living elderly people than exist today, but does not take account of the trend for older people to be increasingly healthy and active. These positive changes will undoubtedly have a bearing on policy. It seems reasonable to expect that there will be greater numbers of older carers and that older workers will be encouraged to remain on the labour market, thus compensating for shortages of personnel that may occur among younger people. In this connection, functional ability should certainly be measured and the results used in the planning of services.

Current problems stem less from gaps in our knowledge of how to care for the dependent elderly than from a lack of political will to use the knowledge we possess.

Professor Davies makes very little of health promotion and the prevention of illness, whereas he gives considerable attention to the treatment of disease. For older people to be healthy in the future, the whole population has to be made health-conscious now. Healthy habits, such as the taking of adequate exercise, may not increase the length of life but can be expected to raise its quality. And the quality of life should surely be a main consideration in any medical development that tends to prolong life.

Efforts should be made internationally to curb the extension of typically Western diseases in developing countries, where the promotion of junk foods and other unhealthy products reflects poorly on Western influence. It should be possible for the healthier aspects of diet and life-style in the Third World to be promoted, rather than abandoned at the first opportunity.

**For older people to be healthy in the future, the whole population has to be made health-conscious now.**

I feel that the main article would have benefited from a more rounded approach, embracing lifetime education, good housing, social integration, religious or spiritual comfort, and health promotion, in addition to the treatment of disease.

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Juan C. Rocabr uno

—Functional ability is a reasonable indicator of health in old people

Clearly, the health of old people is influenced to a considerable degree by factors operating earlier in their lives, among them nutrition, life-style, and sociocultural, economic and technological conditions. It therefore seems risky to try to measure health in old people by using the customary indicators, e.g., morbidity. It has to be borne in mind that, depending on their history, old people may display a range of deficiencies and disabilities capable of limiting their activities.

In Cuba a group of gerontologists, geriatricians and psychologists is studying the ability of old people to solve the problems of daily life. An attempt is being made to evaluate functional status, which we regard as a reasonable measure of health, through a questionnaire that makes it possible to explore degrees of personal autonomy or dependence and endeavours to identify major difficulties and their impact on life patterns.

Efforts to measure health through the evaluation of personal autonomy have similar objectives to those proposed by gerontologists in studies on the epidemiology of aging:
— to learn more about the causes of aging;
— to discover the distribution and extent of pathological problems affecting old people;
— to determine the interactions that occur during aging;
— to obtain essential data for the planning, implementation and evaluation of medicosocial action and services for old people.

It is vital to define these objectives clearly, particularly in view of the large number of difficulties that have to be tackled during operational work. It should be noted that various definitions of autonomy are in use. For some people it means the ability to act and determine one’s pattern of life; others relate it more to self-determination and mobility; and still others, including ourselves, consider autonomy to be a measure of health and well-being.

As Professor Davies points out, the measurement of health in terms of functional ability permits rational planning of health services on a basis of felt and unfelt needs. Epidemiological studies on autonomy can provide the information needed for this purpose. At the individual level, professionals obtain specific information on each patient on which to base their decisions and actions. Finally, studies on personal autonomy can be used to assess the impact of social and health actions, both individually and collectively. In the city of Havana the validity of the above criteria has been demonstrated, and solutions are being sought for the problems affecting the elderly with a view to preserving a satisfactory quality of life for these people and helping them to remain in their families and communities for as long as possible.
Edit Beregi

--Much depends on our ability to improve life-style and environment for all age groups

As Professor Davies demonstrates, a wide range of factors can influence life span and health. In old age, response and adaptation to environmental challenges decrease, some physiological functions can slow down, and the lack of reserve physiological capacity increases susceptibility to many pathological processes. Epidemiological data are necessary to identify high-risk groups and the most common causes of morbidity and mortality, and to measure the efficacy of preventive measures.

Professor Davies draws attention to the particular significance of cardiovascular diseases. Ischaemic heart disease, cerebrovascular disease and pulmonary heart diseases are the main ones causing death in the elderly; hypertensive disease plays a key role as a predisposing factor for the first two. In Finland, Ireland, the Nordic countries and the United Kingdom, ischaemic heart disease is a particularly prominent cause of death, whereas in East European countries cerebrovascular disease is relatively more important. Mortality from ischaemic heart disease is relatively low in France and Japan; that caused by cardiovascular disease is relatively low in Canada, the Nordic countries and the USA.

In the majority of industrialized countries, mortality from cardiovascular disease has declined in the last 10–15 years in both the elderly and the younger age groups. This trend has been especially marked in Australia, Canada, Japan, Malta and the USA. In most East European countries, however, mortality from this cause is high and still increasing (1).

In Hungary the five main causes of death in 1986 were cardiovascular diseases (54% of total mortality), neoplasms (19.6%), accidents, poisoning and violence (9%), chronic respiratory disease (5.5%), and diseases of the digestive organs and liver cirrhosis (5.1%). Longitudinal studies at the Gerontology Centre of the Medical School in Budapest have revealed a significant increase in cerebrovascular disease, ischaemic heart disease and pulmonary emphysema over the past 20 years. It seems clear that there is considerable scope for improving the quality of life through the control and management of certain chronic diseases.

The most commonly examined life-style factor is the smoking habit. Epidemiological data clearly show that mortality rates are higher for smokers than for nonsmokers in all age groups. The association of smoking with a number of cardiorespiratory diseases has been well documented.

Gerontological research has shown that aging and life-span are determined by basic biological mechanisms that can be modified by environmental factors. It is not yet possible to change the genetic programme of aging.

In the USA it has been demonstrated that morbidity can be diminished by
interventions affecting life-style. Reduced cigarette smoking, cholesterol levels and body weight decreased morbidity, but had only a small effect on death rates (2).

Illnesses attributable to life-style factors usually have a long latency time. To avoid illness in old age, therefore, preventive measures must be initiated in younger people.

There are examples of the prevalence of morbidity increasing while disability is delayed, as in cases of diabetes mellitus and hypertension. Our future depends on our ability to improve both life-style and environment so as to benefit the health of the elderly and extend their productive years.


Peter C. Plett

—Old people should be given the chance to lead active and useful lives

In the present context, “occupation” should be understood as referring not only to activity in the labour force, but also to the ability to meet wider social challenges in accordance with the potential of each elderly individual. My experiences make me believe in the healing power of being needed, of playing an active and useful role, whether for remuneration or not. No medical or other care will be able to cure the ills of idleness among old people. Of course, these people have to learn to retain and develop their potential and to offer it to society. And society has to re-learn to call for the contributions of active older people.

Recent research shows that there is no age limit above which people cannot learn and contribute. As Professor Davies says, many elderly people today seem to be much younger in spirit than their parents were at the same age. Due to their improved vitality and health, they are more flexible, better informed and more interested in the world around them. They are willing to learn, are a lot more active, and their life expectancy is greater than was their parents’.

Professor Davies says that chronological age is not a good measure of aging. He is perfectly right, but no other useful definition is available. Perhaps we should regard aging as the accumulation of experience, wisdom, knowledge, survival skills, understanding, social consciousness, relaxation and contemplation. These attributes are not diminished if they are accompanied by some physical impairments.

In the main article, reference is made to a survey showing a higher proportion of healthy old people in Japan than in Western countries. Could this be related to the fact that Japan has the highest activity rate in the world for the age group 55–64 (64%, as opposed to about 40% in Europe)? This is also true for people aged 65 and over (26% as opposed to 3–11% in Europe). Furthermore, the hours worked per year are higher in Japan than in Western industrialized countries. This, of course, is not a plea for Japanese working conditions, which are related to social and financial circumstances and could not be adopted in Western
countries. Lastly, the proportion of older people undergoing training appears to be significantly higher in Japan than in other industrialized countries.

Professor Davies raises the questions of the support needed by the elderly and of its cost, and points out that the answers involve decisions on the age of retirement, pension policy, and priorities in social welfare. If mandatory retirement and pension regulations could be made much more flexible, and if flexible working hours, voluntary work, self-employment, part-time work, and so on, became much more common, part of the cost of supporting the elderly either would not accrue or could be borne indirectly by their own incomes. This does not imply a weakening of welfare services or compulsory working beyond a certain age. I feel that a lot of elderly people would welcome such a change.

The assertion in the main article that the physical functioning of men is better than that of women prompts the question as to whether this difference, and, indeed, the differing life expectancies of men and women, are linked to differences in working conditions. Concerning services, I should like to add training to those mentioned by Professor Davies, with a view to enabling old people to lead active lives. Research on aging should cover matters related to interactions between work and training. Our knowledge of trainability, training techniques, workability and working conditions in respect of the elderly is already adequate.

Professor Davies’ views on helping the elderly to be active members of society are to be commended. Of particular importance is the relationship between work, health, and the prevention of premature decline. Training and education are the essential prerequisites for this relationship to be consolidated.

Julia Tavares de Alvarez
— The elderly are a potential resource

The dramatic increase in the number of elderly people is an inevitable consequence of development. As Professor Davies indicates, higher standards of living, better nutrition and improved health care produce a decline in mortality: fewer children die in infancy and more people reach old age. As development proceeds, moreover, couples tend to have fewer children. Ironically, the consequent aging of populations is often seen as a problem instead of a triumph of development. Sadly, the new life-styles and values that come with development may cause the generation of people aged 60 and over to be devalued. The elderly frequently become victims of development through, inter alia, mandatory retirement, inadequate provision for their education in new technologies, and the breakdown of traditional family structures.

Development may transform the elderly from useful, respected, and autonomous citizens into burdens, dependent on their families or the state. This can be seen in many large cities in developing countries, such as Mexico City, São Paulo, and Buenos Aires.

The International Plan of Action on Aging foresaw this problem. A recent review and appraisal of the Plan’s implementation brings out the need for a radical change of perspective, whereby governments, nongovernmental organizations, and communities would work together to carry out policies and programmes committed to

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integrating, rather than isolating, the elderly, increasing their participation in development, and reducing their dependence (1).

The view that the increasing number of older people constitutes a problem is based on the notion that the elderly cannot make social and economic contributions to their societies. Responses to the aging phenomenon have tended to involve humanitarian, rather than practical, considerations. If this continues, governments may be faced with growing segments of their populations becoming steadily more passive and disenchanted while tension between the generations mounts. A greater effort should be made to create conditions for the participation of the elderly in development, so as to avert this destructive scenario.

More dynamic policies and programmes are needed to foster reciprocal action between social well-being and development, recognizing that the elderly can contribute a wealth of knowledge, experience, and skills to the common endeavour. Being a potential resource, the elderly should be involved as agents of development, not simply as beneficiaries of it.

In order to formulate sound policies and programmes it is necessary to identify the socioeconomic status of the elderly, their relative access to opportunities and resources, and the degree of poverty among them. Particularly in developing countries, the elderly are often marginalized and virtually untouched by public policies. Governments should attempt to gather statistical data on this group, to help not only the planners but also the elderly themselves, for instance in obtaining more adequate responses from policy-makers.

The financial crisis of the 1980s has seen the curtailment or elimination of many basic social services in the developing world. Self-help schemes for the elderly, ranging from simple, traditional projects, such as the sale of handicrafts, to modern sector activities, have consequently emerged. One such activity has just been initiated in Santiago in the Dominican Republic, where, with the help of international funding, a home for the aged has opened a self-service, coin-operated laundromat. The residents of the home help with some of the tasks, such as selling detergent and answering the telephone. The income from the laundromat will allow the home to become self-supporting instead of dependent on charity.

The policies adopted in response to the rapid increase in the number of people aged 60 or more will determine whether aging will be a cause for celebration or concern. The full effects of population aging are not expected until the beginning of the twenty-first century, so there is still time to take preventive action and thus establish the elderly as a resource rather than a burden.

Professor Davies sums up

The above contributions reflect the wide concern felt about the issues raised in this Round Table. Similarities between countries are many; differences are dictated by stage of development in education, industrialization, urbanization and so on, and by position on the aging curve.

Mr Sasakawa draws our attention to the importance of moderation, exercise, prudent diet, and mental activity; I would add the need old people have for an active role in society and for a feeling of contributing and being wanted. Drs Thangavelu, Borgoño, Thiberg, Plett, and Julia Tavares de Alvarez all mention the theme of useful roles for the elderly, and several contributors remark that preparation for such roles should start early and that society should make appropriate provision.

Dr Thiberg underlines the discrepancy in mean life expectancy at birth between rich and poor countries and illustrates the important rule that the main factor affecting it is infant mortality. Populations with an infant mortality of 65 per 1000 or more have a low life expectancy at birth—60 years or less—whereas in Sweden the corresponding figure is 74 years. But at age 45 the average life expectancy is only between two and two and a half years less in the former countries than in Sweden, and at 65 the difference is less than a year. Those who survive infancy may achieve long life; reductions in infant mortality thus have clear implications for the composition of populations in the future.

Sally Greengross’s prediction that the elderly of the future will be healthier and more active than those of today is probably true for industrialized countries, but as yet there is no supporting evidence from poor countries, where the majority of the world’s elderly live. Her point about a healthy life-style for all is an important one with which I heartily agree. The main article, however, concentrates on what can be done for the elderly while waiting for the effects of health for all in the next 50–100 years. Preventive measures must be initiated in youth, says Professor Beregi, while Dr Thangavelu gives us until middle age. Agreeing that earlier is better, are we sure that it is really never too late? How long it takes to correct the follies of youth and middle age is not known. We cannot yet compare the benefits of, say, stopping cigarette smoking in a life-long smoker aged 80 with the effect on his enjoyment of life. Research into methods of tackling such problems is much needed.

Professor Rocabruno underlines the use of autonomy as an indicator of health and well-being. When it becomes possible to define autonomy unambiguously and to measure it in different populations (a goal of the WHO study on determinants of healthy aging mentioned by Professor Andrews) it should be possible to use it in epidemiological studies, in testing the benefits of preventive or therapeutic regimens, and in the planning of services.

As Nana Apt reminds us, the replacement of the extended family by the nuclear family is one of the disadvantages of development. With the migration of young families from rural areas to cities, who will look after the old people left behind? There is an obvious need for community mobilization backed, as Dr Rhomberg emphasizes, by services and trained personnel. It seems to me that the time has come to train primary and community health workers in the general aspects of caring for the elderly. For most countries, it will be necessary to help families to support their elders and develop basic community services accordingly.