Some Unresolved Problems in Gerontology

J.A. Jackson and W.F. Forbes
Department of Statistics
University of Waterloo

ABSTRACT

Recently, gerontology has received increased attention from governments and other funding agencies, from research workers and from professionals in many disciplines, because of the implications of the increasing numbers and proportions of elderly people in most countries. Since gerontology is a multidisciplinary field, the range of issues involved is very wide and many problems require further study before they can be resolved.

This paper examines some of these issues, emphasizing those concerned with the health and social needs of the more dependent elderly. In particular, the paper discusses aspects of the accommodation of elderly people, both in the community and in institutions, their financial situation and need for community services. Reference is also made to international demographic trends and to the importance of an integrated approach in providing assistance to the elderly.

INTRODUCTION

Changes in mortality which have occurred in recent times are relevant to Gerontology. The purpose of this paper is to discuss some of the health and social implications of these changes relevant to the elderly population. It is believed that some of these problems may be of interest to actuaries.

It may be appropriate first to define gerontology. It is the study of elderly people and the aging process in general and is therefore a multidisciplinary field concerned with that older section of the population which is generally, but not universally, defined as those 65 years and older.

Work in the field of gerontology is not new, but it is the recent growth in the numbers and proportions of elderly people in most countries of the world which has stimulated increased attention from governments and other funding agencies, from research workers and from professionals in many disciplines. One of the major concerns is that these changes in the population structure will lead to greater costs, particularly for health and social care of the elderly. However, the cost of services for the elderly is not the only issue which requires further study.

This paper will discuss some of the issues where there is a lack of adequate knowledge. The biological, medical

and psychological areas of gerontology will not be considered; rather emphasis will be on the area of health and social planning. In particular, hospital utilization by older people and possible implications for the future, the use and need for long-term institutional care, and the inter-relationship between community services and accommodation, are some of the topics discussed.

The paper will focus on the situation in the more well-developed countries of the world and particularly in Canada. However, it is important to remember that the demographic changes involving older people are not limited to the well-developed nations. Although these countries tend to have higher proportions of elderly people in their populations (see Fig. 1), the rate of increase of the elderly population has been, and will probably continue to be, higher in the less well-developed countries. For example, it has been estimated that for the period 1975-2000, the rate of increase of the population aged 65 years and older will be 41% in the more well-developed countries but 127% in the less well-developed ones (see Fig. 2).

(Insert Figures 1 & 2 Here)

Within these less-developed countries there are also the changes accompanying modernization, such as the establishment of a fixed retirement age, and the development of nuclear as opposed to extended families, which can have a significant impact on the lives of elderly people (WHO Chronicle, 1982).

Figure 1: Percentage of the Population Aged 65 and Over, Major Areas of the World and Selected Countries, 1965, 1975, 1985, 1995 and 2000[1]

Geographic area	Year				
	1965	1975	1985	1995	2000
World	5.4	5.7	5.7	6.1	6.3
More developed regions	8.9	10.5	10.8	12.0	12.4
Less developed regions	3.7	3.8	4.0	4.4	4.7
Regions:					
East Asia	5.1	5.8	6.4	7.3	7.8
South Asia	3.1	3.0	3.1	3.6	3.9
Europe	10.4	12.3	12.1	13.1	13.5
U.S.S.R.	7.4	9.1	9.7	11.7	12.2
Africa	2.7	2.9	3.0	3.2	3.3
North America	9.3	10.2	10.8	11.1	10.8
Latin America	3.5	3.8	4.0	4.4	4.5
Oceania	7.3	7.4	7.8	8.1	7.9
Selected countries:					
United States	9.5	10.4	11.0	11.3	10.9
Japan	6.2	7.8	9.2	11.7	13.2
Switzerland	10.5	12.0	12.0	12.8	13.5
Sweden	12.7	14.9	16.0	15.5	14.5
United Kingdom	12.0	13.6	13.9	13.5	12.8
France	12.1	13.3	12.1	13.3	13.7

[1] Medium variant

Ref.: Stone and Fletcher, 1980.

Figure 2: Population 65 Years Old and Over for the Total World and World Regions: 1975 and 2000, and Percent Increase, 1975-2000 (Population in thousands)

Region and Country	Population		% Increase
	1975	2000	1975-2000
World, total	216,849	390,140	80
Less developed regions	98,384	223,173	127
More developed regions	118,465	166,966	41
Africa	11,527	26,393	129
Asia and Oceania[i]	77,280	173,584	124
Latin America	12,407	27,836	124
USSR and Eastern Europe[ii]	36,736	54,755	49
Western Countries and Japan	78,898	107,572	36

[i] Excludes Australia, New Zealand, and Japan

[ii] Includes Albania and Yugoslavia

Source: Siegel, 1981

DEMOGRAPHIC BACKGROUND

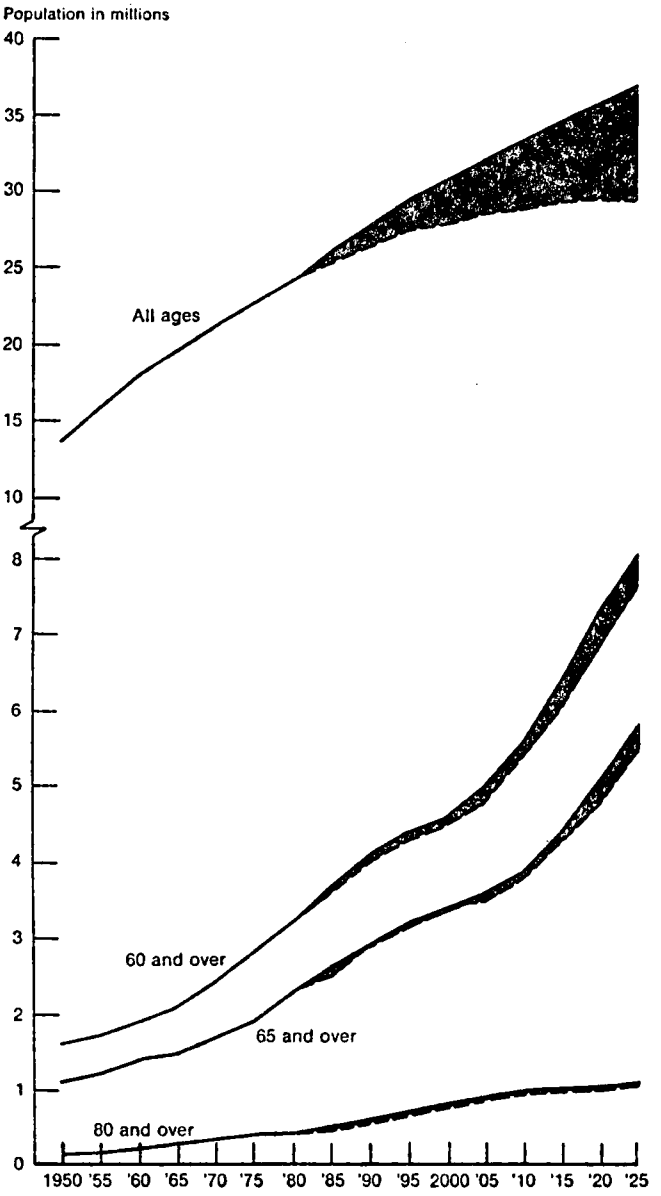
In Canada, the number of elderly people, and their proportion of the total population, has grown steadily throughout this century (see Fig. 3).

In the 1920's, people 65 and over represented about 5% of the total population, by 1975 they represented about 8½% and, by the year 2000, it is projected that this age group will form 11-12% of the total (see Fig. 4).

Thereafter, the proportion is expected to increase markedly as the "baby boom" generation reaches age 65, becoming about 18% by 2031, if current low birth rates and fertility trends persist. Although projections are error-prone, of particular significance during the next 50 years is the percentage of the elderly population who will be 80 and over. It is this group who have been described as the "frail elderly" or the "old old" and who most require assistance and care from health and social services.

Figure 4 indicates the increase in the ratio of the very old to all elderly which is expected to occur until the early part of the next century when the ratio will decrease temporarily because of the sudden increase in the "young elderly".

Figure 3: Population in Selected Age Groups, Canada, 1950 to 2025



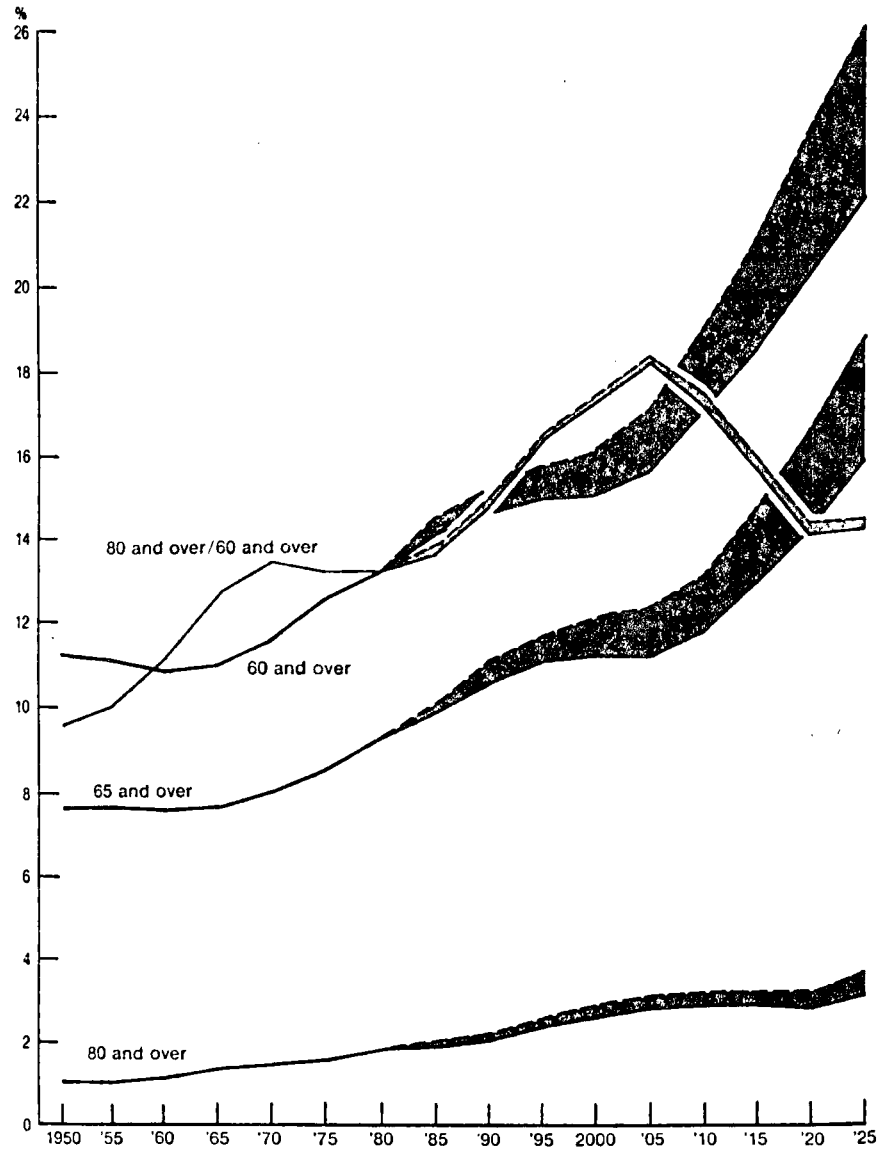
Ref: Stone & Fletcher, 1981

Note: In this and the subsequent Figure 4

(i) the shaded areas represent possible ranges depending on different projections for the birth and death rates and for net immigration,

(ii) the increase noted, for example, for those 65 and older in 2005 is associated with the so-called "baby-bulge".

Figure 4: Percentage of the Total Population in Selected Age Groups and the Percentage Aged 80 and Over in the 60 and Over Population, Canada, 1950 to 2025



Ref.: Stone & Fletcher, 1981

Before considering the implications of these population increases in Canada, it is worth looking at the situation in other countries. Several countries already have a higher proportion of elderly people than in Canada, as is shown in Figure 5.

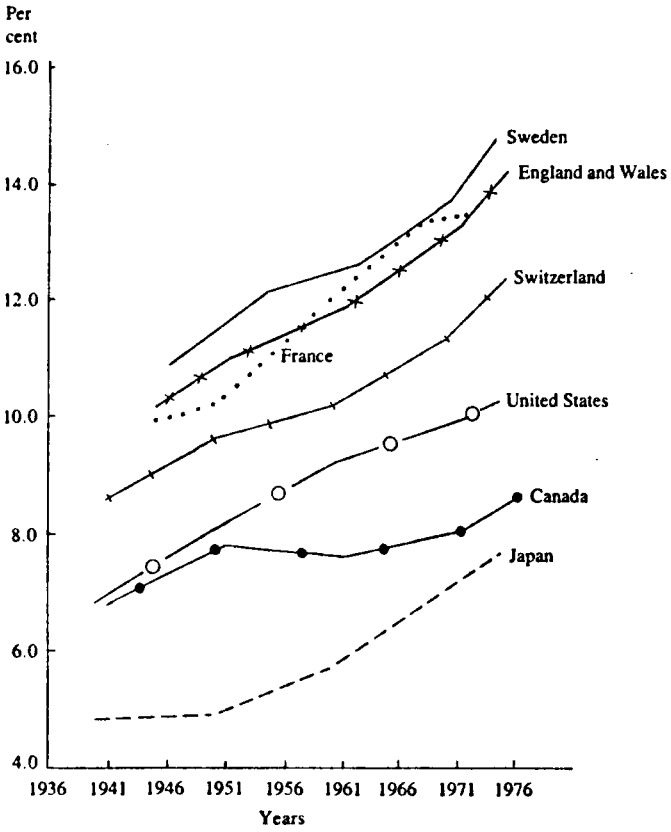
Indeed, projections for Canada's population 65 and older in the year 2000 are still lower than those already experienced by countries such as Sweden and the United Kingdom. Recent estimates suggest that the United States has also reached the point where 11% of its population is aged 65 or older and of these 21% are over 80 (U.S. Dept. of Health & Human Services, 1981). Thus, the situation in Canada does not appear to be as difficult as that pertaining in other Western industrialized countries. However, the projected population figures stress the need to investigate carefully the range of options for the decades ahead. Unfortunately, not only are future needs uncertain but even our present situation, involving true needs and costs and the interrelationship of various factors, is not fully understood.

SOME IMPORTANT ISSUES

Hospital bed utilization

The majority of elderly people in countries such as Canada and the United States probably remain relatively healthy, active

Figure 5: Percentage of the Population Aged 65 and Over, Canada and Selected Countries, 1941 to 1976[1]



[1] Or nearest census year as appropriate.

Ref.: Stone and Fletcher, 1980.

and independent, although proportions vary, of course, depending on factors such as age, race and residential location. In the United States, for example, data from the 1976-78 National Health Interview Surveys show about 30% of all people 65 years and older reporting fair or poor health status but as many as 56% of black, rural elderly reporting such conditions (U.S. Dept. of Health and Human Services, 1981). Whether or not it is true that the majority of elderly remain healthy, many services are used more by older people than by other age groups, and of those, the use of hospital beds by individuals over 65 is an important and costly item which has prompted investigation into other possible options.

In 1975, for example, the 65 and over age group represented about 8.5% of the population of Canada, but used almost 38% of total hospital bed capacity (Lefebvre et al., 1979). Almost half of the 75 and older men and more than one third of the women are hospitalized each year. Further, the average hospital stay for those over age 75 is reported to be six weeks, compared with about 10 days for the population as a whole. This may, however, include long-term stays by elderly patients awaiting Extended Care beds elsewhere.

With the increase in the population of those 65 and older it is likely that there will be a substantial increase

in their patient-days, unless participation rates or length of stay alter. It has been estimated that, if 1975 participation rates and average length of stay persist, by 2020 all of Canada's present hospital capacity would be needed for elderly people (Lefebvre et al., 1979). The same report calculated that, under such conditions, expenditures for hospital care in constant (1976) dollars could more than double to over $11 billion by 2031. However, as already pointed out, other countries manage with elderly populations in excess of Canada's current and projected population over 65. It is also worth noting that while, in 1960, Canada was first of a group of nine industrial countries in its health care expenditures as a percentage of G.N.P. (5.6%), by 1975 it had dropped to 6th place with 7.1% of G.N.P., of which hospital services amounted to about 3.4%.

The increase in the population, and particularly the increase in the elderly population, is not the only explanation of increasing health costs. Changes in utilization rates and in the complexity of services provided are among other responsible factors. The utilization of acute care beds by elderly people presumably can be reduced or maintained at its present level only by reducing the rate of hospital admission and/or the length of hospital stay. There has been a trend for the

Figure 6: Health care expenditures as a percent of gross national product: Selected countries, selected years 1960-75

Country	Year			
	1960	1965	1970	1975
Australia	5.0	5.2	5.6	7.0
Canada	5.6	6.1	7.1	7.1
Finland	4.2	5.2	5.9	6.8
France	5.0	5.9	6.6	8.1
Federal Republic of Germany	4.4	5.2	6.1	9.7
Netherlands	---	5.0	6.3	8.6
Sweden	3.5	5.8	7.5	8.7
United Kingdom	3.8	3.9	4.9	5.6
United States	5.3	5.9	7.2	8.4

Ref.: Simanis and Coleman, 1980.

length of hospitalization in acute care institutions to decrease for almost all age groups. This trend is expected to continue, at least partly because of fiscal pressures, but the role of other factors in future hospital utilization is not clear. One issue is whether the death rate for the elderly, which in the United States fell by nearly 28% between 1940 and 1978 (U.S. Dept. of Health and Human Services, 1981), will continue to decline and, if so, what effect this will have on the level of health and the use of medical services. Age-adjusted death rates in the United States for this period show marked declines of 24.5% for males and nearly 48% for females. Of the three major causes of death in the United States for those over 65, that is heart disease, cancer and stroke, cancer is the only one which has shown an increase in death rates. The factors which have led to a fall in mortality may or may not also lead to changes in morbidity and patterns of health care. The extent to which medical science can reduce the incidence of and disability due to chronic diseases is also unknown. Some people have suggested that, in the future, most people will experience only a brief phase of morbidity prior to death at the end of a full life span (Fries, 1980). Others believe that medical improvements will result in more weak, disabled people living to advanced ages and requiring more, not less, medical care. It may be noted, however, in this connection that, if the average health cost per individual remains approximately constant, a longer life-span would involve a

lower per annum expenditure.

When considering alternatives to hospital care, it has been suggested that one of the reasons why hospital stays are longer for older people is the lack of less sophisticated health facilities, such as Nursing Homes, to which patients could be discharged when full hopsital services were no longer needed. It has been shown in the United States (U.S. Dept. of Health and Human Services, 1981) that the provision of Nursing Homes varies from State to State and this may affect the use of hospital beds. The establishment of other facilities, such as Nursing Homes or Homes for the Aged, might result in significant savings on hospital operating costs. At present, a Nursing Home patient-day is considerably less expensive than a hospital one, though the costs may become higher if Nursing Homes provide a greater proportion of Extended Care beds. However, provision of more Nursing Home beds is not necessarily the right and almost certainly not the only answer. For example, it is possible that some patients could be discharged home if additional and appropriate supports, such as some nursing and homemaking services, were available. Another option which has been tried in various centres, is the provision of Day Hospitals, which are widely used in Great Britain and other European countries. Such a centre may enable a patient to be discharged earlier from an acute hospital, treatment and rehabilitation being carried out at the Day Hospital. The

centre may also prevent hospitalization by providing maintenance treatment.

The need for services and facilities which may prevent hospital admission will vary from individual to individual and from region to region, because of factors such as family supports, climate and transportation. Determining what is most appropriate and feasible under different circumstances may be a difficult, if not impossible, task since the factors affecting hospital utilization may not be obvious. It may be significant, for example, that up to age 75, hospital stays for men and women are of similar length, but, thereafter, women tend to stay in hospitals as much as a week longer than men. At this age, women are far more likely to be widowed and living alone than men of a comparable age, pointing perhaps to the need for more supporting services.

ACCOMMODATION NEEDS OF ELDERLY PEOPLE

(a) Institutional. Decisions regarding suitable accommodation options for elderly people require, in the first instance, knowledge about the present situation, where people are and how appropriately they are placed, since this will presumably affect future planning. Somewhat surprisingly, such data are generally not available. In Ontario, long-term institutional care for elderly people may be provided in a number of different types of institution, including Nursing Homes, Homes for the Aged and Chronic Hospitals. As shown in Fig. 7, more than one level

Figure 7: Patient Care Classification: Ontario

Type 1 (Residential Care/Intermed. Care)

Characteristics	Where Provided
Ambulant and/or independently mobile	Home for the Aged
Decreased physical and/or mental faculties	Nursing Home
Requires supervision and/or assistance with activities of daily living	Boarding House
Psycho-social needs through social and recreational services	Hostels
Medical condition is stabilized or under clinical control	
Treatment involves, maintenance, medication and preventative	

Type 2 (Extended Health Care)

Characteristics	Where Provided
Relatively stablized (physical or mental) chronic disease or functional disability	Homes for the Aged
Little or no rehabilitation potential	Nursing Homes
Limited need for diagnostic and therapeutic services	Homes for Special Care
Continuous personal care with medical and professional nursing supervision	
Provision for meeting psycho-social needs	

Type 3 (Chronic Care)

Characteristics	Where Provided
Chronic illness and/or functional disability	Chronic hospitals
Acute phase of illness is over	Chronic units in general hospital
Vital processes may/may not be stable	Nursing Homes approved for chronic care
Potential for rehabilitation may be limited	Geriatric units in psychiatric hospitals
Requires medical management and/or nursing care on a continuing 24 hour basis	
Provision for psycho-social needs	

Source: Ontario Ministry of Health, 1975

of care may be provided, but most institutions are finding that the degree of care required by their patients is changing. Homes for the Aged, for example, were established to meet welfare objectives in providing residential care for frail, indigent elderly. With increasing longevity, many Homes have a greater proportion of the very old and, with that, an increasing number of residents who require extended or even chronic care, although they may not be occupying beds designated as such. The result is that the available data may not reflect the true situation. A number of reports have drawn attention to institutional misplacement of elderly individuals (Cape et al., 1977) but the extent of this problem is difficult to determine accurately. Differences in funding arrangements, management, standards and inspection of the different types of long-term care institution compound the problem of making an accurate estimate of care needs.

One method used in examining the provision of care for the elderly in Canada, is by comparison with other countries. A number of studies have indicated that in Canada a higher proportion of elderly people are institutionalized than in other Western countries. Schwenger and Gross (1980) compiled utilization data for Canada for the year 1976 and compared then with data from the U.S. and from England and Wales. However, as they pointed out, caution is necessary because of differences in the definitions of institutions and the different

years involved. In the United States, hospital utilization rates vary from State to State partly because of differences in the provision of other long-term care facilities, although the precise relationship between hopsitalization and use of long-term care facilities is unknown. Moreover, the figures quoted by Schwenger and Gross refer to the proportion of elderly people in institutions on any one day. This is not necessarily the same as the rate of "institutionalized" elderly people, for it does not reflect the duration of stay. It is also interesting to note that, for persons 65 and older in institutional care on any one day, the figures suggest a proportionate increase of 9% for Canada, 11% in England and Wales and 34% for the U.S. over approximately a ten year period from the early sixties to the seventies. Various reasons have been put forward for these national differences, including the availability of institutional places, the amount of money spent on health care and reimbursement rules, climatic, geographic and regional differences and the availability of community services. However, the relative importance of these factors, and even the reliability of the figures, have not been established.

(b) Community Accommodation and Services. Just as the provision of non-acute long-term institutional beds may be one partial solution to overcoming the shortage of acute beds, so

the provision of better services and accommodation in the community may be a partial solution, on financial and humanitarian grounds, to the problem of a relatively high rate of institutionalization. However, here too there is a problem in judging what are the appropriate services and accommodation under different conditions.

The value of retirement, or sheltered, housing, for example, is a subject of debate. One investigation in British Columbia (Gutman, 1980) suggests that tenants in retirement housing tend to be older than those elderly people living at home in non-age-segregated settings. In addition, the elderly living in retirement housing may have more health problems and functional disabilities than persons of comparable age living separately in the community. It has been claimed, therefore, that retirement housing units provide a means of delaying or even preventing institutionalization by supporting the individual physically, psychologically and socially. Others, however, have suggested that provision of services in retirement housing fosters dependency. Another assumption put forward is that most elderly people move into retirement housing, provided by the State, primarily for financial reasons and that therefore it would be better to provide rent or other subsidies which would enable these elderly to remain in their own homes. Yet census data indicates that many elderly people live in homes which are larger than they need. As a result, they

may be maintaining a house which, physically, is too much for them and which, by tying up their assets, results in financial difficulties.

Efforts are being made to assess these and other factors affecting housing and support needs and new options, such as reverse mortgages, are being tried, but much remains to be done. The danger is that, without adequate information, policies may be instituted which are not in the best interests of elderly people or which have unforseen affects. Limiting the construction of retirement housing, for example, may result in a need for extensive support services to be delivered to a growing number of very old, frail seniors living, scattered, throughout the city.

Although reliable data are not available it is generally believed that if suitable community accommodation and services are provided, this may reduce the need for institutional beds; on the other hand it may just delay still further the age of entry to an institutional setting. In addition, improving the quality and availability of community services may increase the demand for assistance. It is also believed that many elderly people do not apply for assistance even though they may be eligible. The reasons for not applying may be varied, including lack of knowledge about the services or how to apply, a belief that they are not eligible, accessability of the services and a sense of independence or pride.

The implication would seem to be that, since people's needs differ, a variety of accommodation options are needed, but the appropriate mix will vary under different circumstances. It would also seem that, not only are the present needs for accommodation and community services not known, but also that the factors affecting needs are not well understood. All too often the data available are limited in scope and anecdotal in nature.

CONCLUDING REMARKS

In studying some of the issues where present data are incomplete it becomes apparent that there are a number of basic considerations. It is clear that in many, if not in all, of these problems there is an overlap between the disciplines involved. For example, health and social services cannot be considered in isolation from one another. An individual's health can be affected by the social environment and by the availability of social services. Similarly, that person's social life can be affected by their health and therefore by the availability of health services. Other problems may appear to be economic in nature, such as the financial situation of single elderly women. However, other factors which are or will be important in this case include the health of women in their old age and cultural factors such as the involvement of women in the labour force, with all its social implications, and the

degree of family support.

The implication of the multidisciplinary nature of these problems is that the solutions usually have to be multi-disciplinary too. In other words, workers in this field, both theoretically and practically, must be able to see the whole problem, be able and willing to consider the implications of disciplines other than their own and, where necessary, involve other professionals in developing a solution.

The inter-relatedness of the individual, the family and society at large is another issue which adds to the difficulty both of finding short-term solutions to specific problems and planning for the future. What is best for one is not necessarily most appropriate for another - the presence of a frail elderly person may disrupt family life, for example. Solutions, therefore, may depend on the relative importance placed on the claims of these different groups. It is obvious that the equitable distribution of available funds to different groups of the population is an important and sensitive issue. Related to this are the relative roles of government, at different levels, private industry and the individual in providing the money for the various support programs, facilities and services which are necessary.

The importance of these fundamental policy questions underlines the need for more and better information about the present situation of our elderly population and about the individ-

ual and combined effect of services provided. Any study of the practical problems affecting the elderly should also include some attempt at a cost-benefit analysis. It is all too easy to develop a list of recommendations and measures which can be expected to improve the conditions of older adults. However, this is not a realistic exercise, unless some analysis is carried out which relates the estimated costs involved to the benefits which might accrue to the individual and the community. Of course, the cost-effective solution may not be the most appropriate or chosen solution since humanitarian considerations may outweigh financial ones. But at least, the decision made will be in the full knowledge of its implications.

Finally, it should be remembered that it is unlikely that a single algorithm can provide the answer to a particular problem. Needs, both actual and perceived, can vary appreciably for different individuals and situations. However, guiding principles relevant to assisting elderly people can be identified and can be used to develop suitable responses.

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