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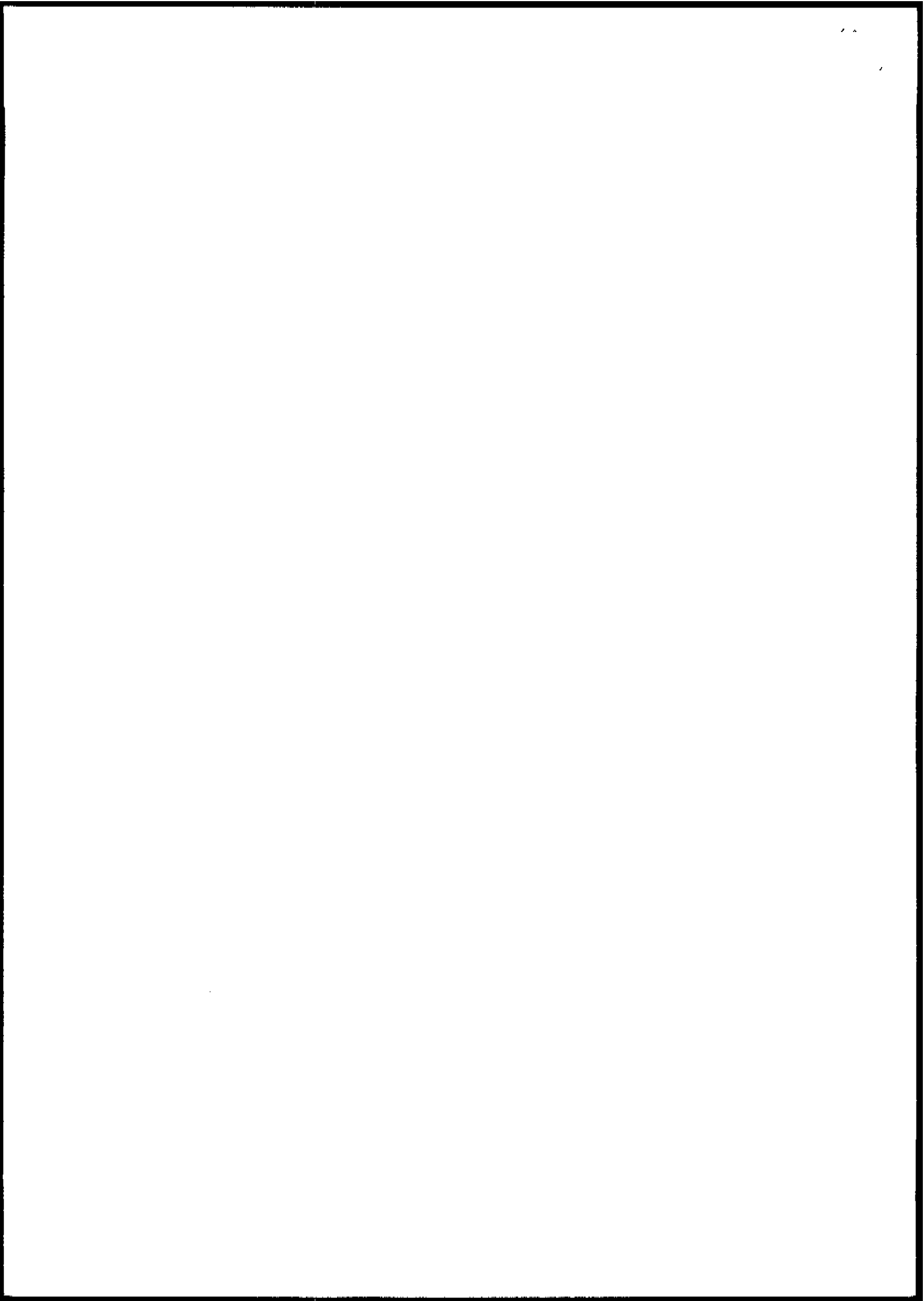
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SYNOPSIS OF THE PAST AND FUTURE TRENDS IN THE DEMOGRAPHIC STRUCTURE

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## Introduction

The strategy of the European Region of the WHO for attaining health for all by the year 2000 has three main aims: promotion of lifestyles conducive to health, reduction of preventable conditions and provision of care which is adequate, accessible and acceptable to all. Large number of factors and elements should be taken into account in the planning of the programmes and measures aimed at the above goals. The demographic structure of the population and its dynamic plays a fundamental role in this respect since both size and demographic characteristics of the population determine to a large extent volume and kind of health care as well as scope and direction of health promotive and preventive actions. It is well known that different age groups have different health problems. Infants are very vulnerable to low standards of hygiene and poor nutrition. Other health problems of this age group include low birth weight connected with prematurity, congenital malformations and genetic diseases. Children like infants are susceptible to infectious diseases and vulnerable to poor nutrition and hygiene. Accidents are major cause of death and disability in this age group. Adolescents' and young adults' health problems include unwanted pregnancies, maternal morbidity and mortality, accidents, suicide, alcohol and drug misuse. Road traffic and other accidents, mental diseases, cancer, heart diseases, strokes and permanent disability are the major problems in adults. Among the elderly, apart from problems of ageing, cardiovascular diseases, cancer, mental disorders, rheumatism and permanent disability should be mentioned. These are few examples why it is so important to consider individual country's demography in health programming.

The other papers prepared for the meeting are dealing in more detailed way either with certain specific aspects of population dynamic or with problems related to major age sections of the population. The objective of this paper is to present an overall demographic picture of the region and more important remarks and comments found in papers prepared by the several countries.

## European Region of WHO of the World

The European Region of WHO includes geographical Europe, the entire Soviet Union, Algeria, Morocco and Turkey. Most of its Member States belong according to U.N. terminology to the group of more developed countries whose population amounts to some eleven hundred million or about one third of the total world population. Since the annual rate of increase in percentage in this group of countries is about one third of the rate of the rest of the world, by the year 2000 the population in more developed regions is expected to be over twelve hundred million while the corresponding figure for less developed regions will be almost four times higher.

Among the eight major areas of the world (Table I) the lowest average annual growth is expected in european countries whereas in 1975-1980 it was about 0.39%. In the USSR the annual growth rate was over two times higher during the same period. It is projected that the percentage of the population of the European Region will decline from about 18% in 1975-1980 to about 13% by the year 2000 in respect to the total world population.

### Europe and other more developed regions

The total population of the more developed regions was estimated at 1131 million in 1980 and projected to increase to 1272 million in the year 2000 it means by 12%. The population of Europe and USSR in the same period will increase from 751 million to 833 it means by 10% while the corresponding increase in the rest of the developed regions will be 15%. The lowest increase is expected in Northern and Western Europe where the annual rates for 1975-1980 are 0.08 and 0.03% respectively. However, the rates of population growth for these two regions are projected to recover in 1980's, reaching 0.22 and 0.28% respectively by the end of the century (Table 2).

### European Region of the WHO

The detailed analysis of main demographic trend is given in other papers. Here are presented some data and comments of a general character.

Population growth. The population of the European Region will increase by 16.9% between 1980 and year 2000 (Table 3). The greatest increase is expected in the age group 60 years and over (36.2%) and the lowest in the age group below 19 years of age (9.5%). However, there is wide variation between countries in this respect. In some, according to the present estimates, the growth of the total population will be negligible or even negative while in others the country population will almost double. Similar variation is found in the projections of the major age groups. The population under 20 years of age in more than half of the countries will decline in absolute numbers. At the same time in some other countries this age group will more than double. The highest increase in the absolute numbers is foreseen in the age group 60 and over; in three countries the percentage change exceeds 90%, and only in two there will be small decline (1% to 2%).

Life expectancy. In 1975-80 the highest figure for life expectancy among males was 73.1 and 79.3 in females and the lowest was 53.8 and 57.0 respectively. However, in most of the countries of the Region life expectancy exceeded 67 years and only in eight of them it was below this value in males. In females, in most countries, life expectancy exceeded 75 years. It is projected that in 1995-2000 the highest life expectancy will reach 73.9 in males and 80 in females, the lowest corresponding figures are 62.2 and 65.8. It means that in males the range between highest and lowest life expectancy which was in 1975-80 19.3 years will decline to 11.7 years. In females the corresponding value are 22.3 and 14.2 years.

### Country reports

All the Member States of the European Region were invited to join the study and prepare country reports. It was suggested that the country reports should describe the main demographic trends and perspectives, vulnerable groups with respect to differences in geographic areas and socio-economic conditions, and the consequences and implications of the trends and perspectives for policy making. While dealing with demographic trends and their implications for social and health services they should take into account the two-way relationship between the population dynamic and socio-economic conditions. In selection of appropriate demographic characteristics and indicators consideration was given to the list of suggested indicators of progress towards achieving health for all by the year 2000 prepared by the European Regional Office. They included indicators related to mortality, fertility, family formation, migration and population structure.

One third of all countries of the European Region accepted the invitation and submitted country reports. Most of the country reports contain valuable information covering a wide range of topics. However, while describing the main demographic trends and perspectives, they did not always comment on the health and social implications for services. There were also gaps in the information provided by some countries as to how they cope with the demographic changes and the measure they take to secure the development and well-being of the total population and vulnerable groups.

#### Past demographic trends

In general, the analysis of the past demographic trends represents the largest part of the country reports and covers most of the aspects of the population dynamic.

Mortality. Mortality trends are probably presented in most comprehensive way considering not only time tendencies by age and sex but also regional differences, causes of death and occupational mortality differentials.

Norway's reports starts the analysis of mortality trends by noting that the number of deaths per year has increased from about 32 500 on 1960 to 41 300 in 1980. In the same period the life expectancy for newborn has increased with 1.24 years for males and 2.76 years for females. The rising number of deaths must therefore be a result of changes in the age structure of the population. A larger part of the population now consists of elderly people with higher death risk. The reason for the increasing number in older ages are the large cohorts born between 1895 and 1923 and the long-term decrease in mortality, especially among children and young people.

Females in Norway as elsewhere have a longer life expectancy than males, and the difference is now 6.5 years. Death rates have shown a decreasing tendency for women at all ages. Although the increase in life expectancy has been largest for newborn girls, women at the age of 40 years can expect to live 2 years more today than they could according to calculations in the early 1960s.

For males, life expectancy has shown a continuous increase only for the youngest ages. At the age of 40 a man can only expect to live 1 month longer than was the case in 1961-1965, and compared with the period 1951-1955 the life expectancy for a 40 year old man has actually decreased with about 1 year. The reason for this trend must be found in rising death rates from cardioalcular diseases.

The considerable increase in expectation of life for newborn but not for older ages is connected with the decrease in infant mortality. Death rates for the first week of life have been reduced to under one half in 20 years. A corresponding trend is seen for stillbirth rate and thus for perinatal mortality. For infants after the first week the death rates have been reduced from 6.9 to 4.1 per 1 000 live births. The great reduction in infant mortality relate to changes in social and economic conditions, with a marked progress in the health care system, sanitation and hygiene.

Sex differences in moratlity were frequently discussed in country reports. According to Norways report in 1979, 60% of deaths among males and 76% of deaths among females referred to age 70 years and over. The greatest number of deaths in 5-year age groups was found for males 75-79 years and females 80-84 years. During the last 20 years, death rates for males have been rather constant from the age of 40, while death rates for females have decreased from the age of 30. Deaths rates for children and youth up to 15 years have shown a decreasing tendency.

The ratio between male and female death rates is still very high for the age group 15-29 years. This excess mortality is mainly due to the sex differences in mortality from accidents and suicide. The sex difference in mortality from accidents also exists in older ages, but here differences in mortality from cardiovascular diseases are dominating. While females have experienced decreasing death rates from cardiovascular diseases since 1950, the male mortality showed an opposite trend up to about 1970. By 1970, however, the male mortality from cardiovascular diseases seems to have reached a peak in most ages and has shown a decreasing tendency since then.

Certain similar aspects of sex differences are presented in Czechoslovakia's report. It states that the age-specific mortality rate shows, for males, a decrease in practically all age groups. However, the general all-age mortality rose in both males and females. In females it was due to a change in age structure whereas in males an actual increase of mortality was taking share too.

Neoplasms show, in the total, a continual increase until 1971 for males and until 1972 for females, followed by a period of oscillation with indications of possible decrease. The mortality rate was considerably higher for males than for females and the difference is getting larger. In the age groups 55 to 84, the neoplasm-mortality rate for males is almost twice as high as for females.

Circulatory diseases mortality increased from 1960 to 1971 by almost three quarters for both males and females and, for males, remains almost unchanged since, whereas, for females, it increased by almost 15% further. The increase affects all age groups from 35 up for males and from 45 for females.

Respiratory diseases mortality increased by about 20% for males and a sixth for females by the age-specific mortality rates rather slightly decreased so that the overall increase seems more to be a matter of age structure.

Injuries and poisoning mortality rate for males increased by 20% in 1970 as compared with 1960-64 and was then slowly decreasing until, in 1979, it reached a level 1% lower than that for 1960-64. On the contrary, for females, it was increasing until in 1977, it exceeded that 1960-64 level by 40%. Thereafter it decreased but, in 1979, was still almost 30% higher than 1960-64. This increase affects mainly high age groups (70 years and more).

Norway's report concludes that the recent trends seen in male excess mortality seem to support the hypothesis that differences in social level and way of life are important explanatory factors. In addition to differences found in studies on occupation and mortality, studies on marital status have shown a considerable excess mortality for single and divorced men.

The influence of differences in way of life is also supported by studies where mortality among adventists has been compared to mortality in total population. Corresponding death rates show that life expectancy for adventists exceeds the average with 4 years for males and 2 years for females. A main reason must be the adventists healthy diet and living habits.

Causes of death were discussed in several country reports. As an example may serve the Finnish report which states that the distribution by cause of death in Finland does not deviate from that in other Nordic countries. Finnish people only die of more numerous diseases and at a younger age than people in other countries. In addition, the risk of violent death is higher in Finland in all age groups than in Sweden or Norway.

The most common cause of death have been cardiovascular diseases their share growing during the 1960's. In the 1970's this growth seemed to have come to an end. The biggest group of circulatory diseases has been ischaemic heart disease. The great frequency of heart disease deaths has given rise to several research projects aimed at prevention of heart diseases. The most famous project is the Pohjois-Karjala Project, which aims at improving the health of the entire population of the province of Pohjois-Karjala by means of health education, training of health service personnel and an improvement in the supply and effectiveness of the health care service.

Nowadays almost one fifth of all deaths in Finland are caused by cancer, and the number of cancer deaths is constantly growing among both men and women. Among the male population the most common type of cancer is lung cancer, which in the middle of 1960's accounted for one third of cancer deaths. This situation remained unchanged until the middle of the 1970's. The authorities have tried to reduce smoking, which is considered the greatest factor causing lung cancer, by the Tobacco Act which came into force in 1976. The Act restricts the advertising of tobacco and enables more efficient measures against smoking. No conclusive evidence of a clear downward trend in people's smoking habits can be found.

The most common cancer among women is cancer of the breast which is constantly becoming more frequent. For early detection of breast cancer, new methods of examining risk groups are constantly being developed. Already implemented is a mass examination scheme to detect cancer of the womb, which is the second most common cancer in women.

The respiratory organ diseases are the third most common and increasingly frequent cause of death in Finland. Among these diseases chronic bronchitis is a common male disease and pneumonia a common female disease.

Death in infections is becoming more and more rare. Tuberculosis accounts for only 200-300 deaths a year. Back in 1960 the number was still four times greater and in the 1930's tuberculosis killed almost nine thousand persons.

Total accident mortality shows a slight increase although the number of deaths caused by road traffic accidents is going down regardless of the increase in the number of vehicles. The number of suicides also shows an increase, despite that it has always been high in Finland.

Geographical variations in mortality were frequently mentioned in country reports showing urban-rural differences or differences between provinces and regions. The Finnish report finds that the mortality of the industrialized and urbanized southern part of Finland is lower than that of the unindustrialized eastern and northern parts. Mortality caused by malignant neoplasm is, however, higher in low-mortality areas, whereas mortality of cardiovascular diseases is more common in high-mortality areas. This typical difference may be due to urbanization and occupational structure of population, but it can hardly be explained by the age structure of the population, as the distribution by age groups of these causes of death does not show significant regional deviations.

The areas of high and low mortality are not internally homogeneous. Thus e.g. the mortality of circulatory diseases is highest for both men and women in the Kymi province and the provinces of Oulu and Lappi are closer to the mortality for the whole country than to the other provinces of this high-mortality area.

Accidental mortality by province shows remarkable diversity, mortality of men caused by traffic accidents is highest in the provinces of Ahvenanmaa and Lappi if it is not related to the number of cars. Suicides among men are most common in the provinces of Mikkeli, Kuopio and Lappi and least common in the provinces of Turku and Pori and Vaasa. The suicide risk for women is highest in the province of Pohjois Karjala.

Occupational mortality data were not commonly available and only few countries made comments on them. Norway's report says that studies on mortality by occupation show low mortality risks for teachers and farmers, and high mortality risks for seamen and for hotel and restaurant workers. Probably can these differences support the way of life hypothesis, even though some differences may be expected from the working conditions for the various occupations, such as accident among ship's crew.

In Finland occupational mortality was analyzed in two studies which showed that occupations with the highest total mortality are 1) some service occupations (waiters, hotel, restaurant and domestic work, building caretaking and charwork and other services, which include hotel receptionists, lift operators, etc.), 2) the heaviest outdoor work occupations (labourers, unskilled construction workers, forestry workers, mining and quarrying, deck- and engineroom crew, painting and lacquering, construction and dock- and warehouse work) and 3) most commercial occupations (wholesale and retail dealers, sale of real estate, securities, business-services., wholesale sales representatives, agents).

Occupations with the average total mortality are mostly manufacturing and transport and communication occupations and farmers with less than 10 hectares cultivated area.

The lowest total mortality is found among farmers owning more than 10 hectares of cultivated land, administrative occupations and in the academic occupations (priests, physicists, biologists, medical and nursing personnel, teachers, ect.).

Fertility attracts a lot of attention of the authors of country reports.

Hungary's report states that in Hungary fertility has shown a declining trend since the last third of the past century. At the turn of the century the average number of children of married females was over 5, there were 40 live births per 1000 population. In the years before World War II there were only 20 live births per 1000 population, and the completed family size of married women might have been around 3 children.

Following World War II the declining fertility trend continued, though with great fluctuations. By the beginning of the 1960s the number of births fell to a very low level and in this period the value of the net reproduction rate was under 1.

When the Hungarian Government got aware of this situation it took social measures in the second half of the 1960s to stimulate the willingness to give birth to children and to have more children. Though in the second half of the 1960s the number of births grew, but even so it was under the level ensuring

the reproduction of population. It became obvious that further measures would be necessary to attain a number of births sufficient for the replacement of population and to ensure that new generations of a balanced number should moderate the inequalities of the age-structure of the Hungarian population.

To realize these targets in 1973 new social and health policy measures were taken. A part of them increased the amounts of different state allocations given to families with children and continued to improve the system of the protection of families and women. In the following years birth number grew to a level ensuring the replacement, after this both the number of births and the net reproduction rate declined again.

Concluding, the reports says that in the recent twenty years - except for the short period of 1974-1977 - the replacement of population has not been ensured, therefore the number of population will fall in the following decades.

Vary detailed analysis of the fertility trends presents also the Finnish report. It starts by stating that the birth and fertility rates have declined steadily from the year 1960 to 1973. This decrease in fertility started as early as the end of the 1940s. In 1960 82,129 live children were born compared to 56,712 in 1973. The corresponding net fertility rates were 1.270 and 0,712.

Fertility increased between 1973 and 1976, whereafter it has stayed on the same level. The net fertility rate has fluctuated around 0.8. In number of births it represents a decline from 67,222 in 1976 to 63,428 in 1979 and 63,105 live births in 1980. Since 1969 the net reproduction rate has dropped below 1.0.

The report continues the analysis by considering the fertility by age, age structure of mothers at birth, pregnancies below 15 years of age, and some factors related to fertility such as abortions, legal sterilization and use of contraceptive methods, migration, change of social structure, level of education and socio-economic status.

Family formation. Similarly like in regard to previous sections the country reports provide extensive information on family formation. For example the report submitted by Greece informs that in Greece the proportions of singles of both males and females dropped from 35.6 and 26.1 in 1961 to 30.1 and 21.1 in 1971 respectively (ages 15 and over). On the other hand, due to the increase in the marriage rates and the mortality decline, the proportions of currently married (ages 15 +) increased from 61.3 to 66.6 and from 58.2 to 63.7 for males and females respectively. A small increase in the proportion widowed and divorced occurred too.

The proportions married reach a peak in the age group 45-54 for males and 35-44 for females; the proportions divorced around the ages 45-54 and, of course, the proportions of singles and widowed reach a peak in young (15-19 years) and old (65 +) ages respectively.

The median age of first marriage as well as remarriage dropped in both sexes and in all the population segments during the period 1960-1978.

All the median ages for both grooms and brides are higher in the urban population but the urban-rural differences seem to have been narrowed since 1960, with the exception of the median age of first marriage of the brides. The difference between the male and female median ages of first marriage increased from 4 years in 1960 to 5.1 years in 1970 and afterwards, while that of remarriage dropped from 9.5 years (1960) to 8.5 years in 1978.

The report concludes that these trends reflect changes in the socio-economic conditions towards early marriage and in attitudes and norms towards remarriage, which took place recently in Greece.

The Norwegian report regards family formation as an important aspect of population development. Fertility rates are affected by it, and so are death rates and the need for care of old people. Single persons seem to have worse dwelling conditions and more absence from paid work. They are more often unemployed or disability pensioners. There is thus a correlation between marital status and certain socio-economic problems.

Norwegian data indicate that a new pattern of family formation seems to have emerged by 1970. The number of marriages is going down, and the number of marriages dissolved is increasing. From 1978 there were fewer marriages contracted than marriages dissolved. The marriage rates decreased for all ages from about 1970. Later in the 1970s especially men and women under 25 years had reduced marriage rates. The data also show that divorced men and women are more likely to remarry than unmarried people are to marry. After having described in some detail the above trends the report states that the increase in divorces and decrease in marriages will change the population structure as to marital status. This kind of change is, however, a long term operation, and high rates of remarriage may to a certain extent counterbalance this trend. For males and females 40 years and over the proportion of unmarried has been decreasing, and this was also the case for the age group 30-39 years between 1960 and 1970 (table 3.6.). these trends are consequences of reduced average age at marriage and increased marriage rates in earlier periods of their life (about 1960).

In the age group 20-29 years the proportion of unmarried increased during the 1970s, indicating a change in the pattern of marriage after 1970 for persons born in 1950 and later.

There is some uncertainty about the duration of this pattern. It is suggested that it is now more usual to live together without being married as a first stage. After some years, if the cohabitation lasts, and maybe a child is expected, then a formal marriage takes place.

Migration The level of migration both internal and external varies and its importance for given country varies accordingly. Sometimes the migration may affect various aspects of population dynamics and its structure. An example is presented in the report submitted by Portugal. According to the report the Portuguese population amounted to 8,889,400 individuals in 1960 and in 1970 it had increased to 9,013,700. The increase occurred at an average annual rate of 1.39 per 1000. However, the advance over that ten-year period was accomplished in two difference stages - in 1960-65 the increase amounted to 5.2 per 1000 whereas in 1966-70 the average growth rate was - 2.4 per 1000. The period 1970-75 saw a sharp population advance at an average annual rate of 13.4 per 1000 whose result was that in 1975 the population had increased to 9,633,100 individuals. That sharp population increase was due to the great amount of Portuguese people that have returned from the ex-colonies in Africa together with a clear cut in the amount of emigrants leaving the country.

In some countries like Hungary for instance external migration does not exert a significant impact on the development of the number and structure of population because the number of migrants is very low. Internal migration, however, is very important for the regional distribution of the population. The study of internal migration is of great significance because in many cases its demographic consequences are greater than those of natural growth.

Also Norway did not experience net immigration of significance until 1970. Since then the net immigration has been about 4 000 per year. Norway's greatest migration exchange concerned Denmark, Sweden, Great Britain and United States (70% of the migration exchange 1961-65 and 50% in 1980). The greatest net gain 1971-75 was from the United States, Pakistan, Great Britain and Denmark. Many Pakistanies and coloured emigrants settled in the Oslo-area, while many Americans settled in Rogaland due to the increase in oil-activity.

Interesting comments on governmental policy with regard to international migration were found in the report submitted by the Netherlands.

The government of Netherlands bases its policy on ethnic minorities on the assumption of continued residence. This means that a co-ordinated policy is needed on the position of minorities in the Dutch community. The government is working towards a Policy Document on the Minorities, a draft version of which has been produced. The Policy Document is also to consider health services to minority groups: language problems and cultural differences can make the health service less accessible to these groups. The aim is to improve accessibility by providing interpreters and educational activities. Problems experienced with health services by minorities can be discussed with their representatives in the consultative body for ethnic minorities. Medical care of refugees - a category which poses particular problems on arrival - is also to be developed. Projects to help drug addicts in the ethnic minorities require a separate approach: the government is to subsidise various such projects. The possibility of extending school medical services, particularly in the large towns and cities, to provide special treatment for immigrant children, is also being examined. From the point of view of mental health, special consideration is needed for the problems of the second generation of immigrants. In conclusion, permanent account needs to be taken in the health services of the presence of ethnic minorities, and services to these groups must be geared accordingly. One way in which the government intends to shape its policy on minorities is through good interdepartmental co-ordination.

#### Future trends and implications

Prediction of future demographic trends attracted generally less attention of the authors of the country reports than analysis of the past. In some cases it may be due to certain doubts about methodological or informational aspects of predictions. The Portuguese report states that the provisional nature and the uncertainty about the quality of the present trends, due to a lack of basic statistical information, although not justifying further improvement of hypotheses requires a large number of hypotheses so that the present complicated demographic situation may be clarified and fully covered. However, they think that it will be better to try to replace the present trends by other trends to be produced as soon as new information becomes available and makes it possible to establish more accurate hypothesis and the development of a more adequate calculation method.

Several reports, nevertheless, present predictions which vary much in scope and precision. In some reports the future demographic trends concern only the total population and main age groups such as children and adolescents, economically active and elderly. Some reports go further and consider also socio-economic and cultural characteristics of future populations.

Information on implications for health and social services are even more scanty than information on future trends. In this respect most frequently the ageing of population attracts comments. For example the Norwegian report points out that in long term view the decreasing mortality plays an important role for the ageing of the population. Better standard of living and a better health system have contributed to this development. The ageing population in return creates a greater need for nursing homes and old people's homes. In Norway in 1980 there were about 40 000 beds in nursing homes and old people's homes. This implies that there is one bed per every ten persons 70 years and more. Almost all patients in the nursing homes are old people; and even in the more expensive hospitals there is an overrepresentation of old people. Although only 20% of the population in five selected countries were 60 years and more in 1978, they used nearly 50% of the patient days for discharged patients.

Institutional care is expensive. Besides, many old people want to live in their homes as long as possible. New policies therefore try to make this possible by financing improvement of dwelling conditions, communication arrangements, home nursing system and other arrangements. Old people outside institutions have a greater need of such services than other persons outside institutions. Persons 67 years and more have twice as many cases of illness and days with reduced activity as the total population. About 20% of persons 67 years and more living outside institutions needed daily help, and the need of daily help seems to be even greater in peripheral areas and inner-city areas.

In the report submitted by Morocco the future trends were considered under such aspects like fertility, age structure, migration and urbanization. The implications concerned also a wide range of problems like employment, food production, or housing. In the health field the report concentrates on further development of health infrastructure including health centres and hospitals and improvement of mother and child care.

The most comprehensive comments on significance of the demographic trends for policy-making in the field of health and social services are presented in the report of the Netherlands. The authors consider the main implications of socio-economic differences in mortality, trends in fertility, changes in households and the status of women, and dynamic of the age structure of the population. Coming to health and social services they state that data indicate that a drop can be expected in the number of patients in children's nursing-homes and the number of examinations carried out by school doctors. As regards the older age groups the striking feature is the increasing number of facilities for old people, e.g. nursing homes and old people's homes, and the number of days in care for old people living at home. The effect of the growing number of older people is also noticeable in facilities provided for the population as a whole, e.g. consultations with general practitioners and specialists, the total number of days spent in hospital, care provided by district nurses and the use of physiotherapy.

The question is whether sufficient staff will be available to look after old people. Most of these staff come from the lower age groups, mainly girls, the proportion of which is expected to decline in the near future, while the proportion of old people increases. Girls, moreover, will be benefit more from secondary education. On the other hand, there are developments which will bring with them a greater supply of labour, for example the increasing number of boys interested in caring occupations; another important source of labour is married women, including those who were nurses before they married, who can be brought into nursing again after a short period of training. As to medical practitioners, there is more likely to be a surplus than a shortage in the future: the input of junior hospital doctors have just completed their

basic training exceeds the number of doctors retiring by about 4%, and already some 400 general practitioners who have just completed their training are without work. The number of specialists and physiotherapists in particular is likely to increase considerably, significantly exceeding the growth needed to match the demographic changes alone.

The authors conclude that future government policy will have to be designed to find solutions to what has been called "medical overpopulation". Means of controlling or helping to control the supply of medical practitioners which are to be used in the future or already in use are regulation of establishment, as provided for in the Health Facilities Act currently before parliament, control of treatments in hospitals and clinics and a policy on recognitions and tariffs. Another measure worthy of mention is the introduction of restrictions on the admission of students to the training courses.

Interesting information gives the trend in the number of days spent in hospital by age groups. In the 0-14 age group the figure drops considerably, whereas in the 45-64 age groups there is a slight drop until 1985, followed by a rise. Three-quarters of the rise in the number of days spent in hospital after 1985 can be attributed to the hypotheses that admissions will continue to increase and the duration of stay will remain constant in each age group and one-quarter can be attributed to the ageing of the population. If the downward trend in duration of stay were to continue, the number of days spent in hospital would continue to drop after 1985 (index 93 in 1990). If from 1977 onwards only the changes in the size and age structure of the population are taken into consideration it has been calculated that there would be a continuous rise in the number of days spent in hospital of about 0.5% a year in the 1977-90 period.

The decreasing number of children in the population, the increasing proportion of old people, and their high frequency of admission and long duration of treatment cause a continuing shift in the age pattern of clinically treated patients. It has been calculated what changes can be expected in the near future in the pattern of patients in each specialist field taking into account only the effects of the radical changes in the age structure of the population. The data attained indicate that obstetrics and gynaecology are the specialist field with the largest numbers of admissions; this is caused partly by the fact that a large number of children born in hospital remain under the care of the obstetrician. Surgery, internal medicine and ear nose and throat medicine also account for very large numbers of admissions.

Furthermore, a 5% rise in admissions can be expected in the 1976-2000 period. This can be expected particularly the over-75-year-olds (41%). A considerable drop can be expected, on the other hand, in the number of admissions among the under-30s (25-30%). As for the various specialist fields, an increase can be expected in the number of admissions in internal medicine, cardiology, pulmonary medicine, rheumatology, and radiology, X-ray diagnosis and radiotherapy. A drop can be expected in paediatrics, obstetrics (midwife and general practitioner) and ear nose and throat medicine.

With all the uncertainties associated with demographic projections, a reasonably reliable idea can be gained of the categories of care which could place demands on certain facilities in the future. Whether this will actually happen depends on a large number of factors; that the demographic factor may be of limited significance can be seen, for example, from the 22% increase in the number of births in hospital in the 1970-78 period, whereas the number of births as a whole dropped (shift from home confinements to hospital

confinements). A significant factor is that the supply of medical facilities has always been able to expand virtually unchecked, with demand continuing to adjust accordingly. This has resulted in a sharp growth in the number of people working in the health service and more institutions and equipment. Whether the increase in use per head of health facilities (including staff) will be able to continue unabated in the years to come is doubtful in view of the limited public funds available. The weighing-up of political priorities will play a more important part in the future, as demographic developments result in a significant shift in expenditure. What the result of this weighing-up will be is difficult to predict. Pressure groups may exert their influence; technological advances may be made in medicine; changes may take place in the organisation of the health service; changing ideas on what is the best treatment may gain ground; the public's view of its own health (willingness to complain) may change; the promotion of a healthier way of life may have an effect. All these factors affect the extent to which potential demand becomes actual demand; consequently the calculation of future numbers of facilities and staff will always contain an arbitrary element.

The author concludes that demographic developments bring the prospect of an increase in the size of the older sections of the population and a reduction in the size of the younger age groups. The consequences are not limited to the health service but affect every area of government responsibility. The Royal Commission of Population in one of its recommendations has emphasised the need for the government "continually to take account of changes in demand resulting from changes in the age structure of the population. Where there are consequent opportunities for economies these should generally be taken to finance the increase in demand in other sections". The main significance of this recommendation for the health and social services is that there will be increasing demand for facilities for the elderly in these areas in particular.

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Table 1. Population trends in the eight major areas of the world, 1950-2000, as assessed in 1978

Year	World	Africa	Latin America	Northern America	East Asia	South Asia	Europe	Oceania	USSR
Population (millions)									
1950	2513	219	164	166	673	706	392	13	180
1955	2745	244	187	182	738	775	408	14	196
1960	3027	275	215	199	816	867	425	16	214
1965	3344	311	247	214	899	979	445	18	231
1970	3678	354	283	226	981	1111	460	19	244
1975	4033	406	323	236	1063	1255	474	21	254
1980	4415	469	368	246	1136	1422	484	23	267
1985	4830	545	421	258	1204	1606	492	24	280
1990	5275	630	478	270	1274	1803	501	26	292
1995	5733	726	541	281	1340	2005	510	28	302
2000	6199	828	608	290	1406	2205	520	30	312
Average annual rate of increase (percentage)									
1950-55	1.77	2.16	2.72	1.80	1.85	1.86	0.79	2.25	1.71
1955-60	1.95	2.36	2.78	1.78	1.99	2.24	0.84	2.18	1.77
1960-65	1.99	2.49	2.77	1.50	1.94	2.44	0.90	2.09	1.49
1965-70	1.90	2.61	2.67	1.11	1.75	2.52	0.66	1.96	1.09
1970-75	1.84	2.71	2.64	0.87	1.62	2.45	0.61	1.82	0.84
1975-80	1.81	2.91	2.66	0.83	1.32	2.49	0.39	1.47	0.94
1980-85	1.80	2.97	2.65	0.96	1.16	2.44	0.36	1.41	0.94
1985-90	1.76	2.93	2.58	0.91	1.14	2.31	0.35	1.37	0.85
1990-95	1.66	2.81	2.46	0.76	1.01	2.13	0.37	1.30	0.70
1995-2000	1.56	2.64	2.34	0.61	0.95	1.91	0.38	1.19	0.64

Sources:

World Population Trends and Prospects by Country, 1950-2000: Summary Report of the 1978 Assessment - United Nations - ST/ESA/SER.R/38

Table 2. Population trends among more developed regions, 1975-2000 as assessed in 1978

Regions	Population (millions)					Average annual rate of increase (percentage)				
	1975	1980	1985	1990	2000	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
More developed regions	1093	1131	1169	1206	1272	0.67	0.67	0.62	0.56	0.51
Northern America	236	246	259	271	290	0.83	0.96	0.91	0.76	0.61
East Asia:										
Japan	112	116	120	123	129	0.85	0.57	0.50	0.70	0.48
Europe:										
Eastern Europe	106	110	114	117	119	0.71	0.63	0.51	0.45	0.45
Northern Europe	82	82	82	83	85	0.08	0.07	0.13	0.20	0.22
Southern Europe	134	139	144	148	156	0.72	0.66	0.61	0.56	0.51
Western Europe	152	153	153	154	158	0.03	0.05	0.11	0.20	0.28
Oceania:										
Australia-New Zealand	17	18	19	20	22	1.21	1.10	1.07	1.00	0.93
USSR	254	267	280	292	312	0.94	0.94	0.85	0.70	0.64

Table 3. Percentage change in the absolute numbers in the major population age groups (0-19, 20-59 and 60+) between 1980 and the year 2000, European Countries

	% Change			
	0-19	20-59	60+	All ages
Albania	+10.8	+70.8	+90.1	+43.1
Algeria	+81.0	+118.4	+65.0	+93.7
Austria	-10.9	+7.3	+5.7	+1.8
Belgium	+2.6	+9.4	+15.1	+8.5
Bulgaria	+2.0	+1.0	+41.7	+7.7
Czechoslovakia	+9.0	+12.6	+16.8	+12.1
Denmark	-6.4	+8.9	+4.1	+3.6
Finland	-2.6	+6.7	+19.1	+6.1
France	-3.4	+9.6	+18.4	+7.2
GDR	-15.7	+3.6	+9.3	-0.7
FRG	-13.8	-3.2	+17.2	-2.2
Greece	+3.6	+7.5	+36.2	+11.4
Hungary	+3.1	+0.7	+19.8	+4.6
Iceland	-2.4	+33.0	+33.3	+19.9
Ireland	+1.2	+46.3	+2.4	+21.2
Italy	-7.6	+6.3	+34.6	+7.1
Luxembourg	-6.5	-3.4	+23.1	+0.8
Malta	0.0	+15.8	+28.0	+13.8
Morocco	+57.9	+106.6	+95.2	+78.1
Netherlands	-7.1	+15.7	+24.6	+10.0
Norway	-1.8	+17.5	-1.1	+0,8
Poland	+6.7	+12.7	+45.7	+15.1
Portugal	+0.3	+23.8	+29.9	+16.3
Romania	+6.7	+10.8	+56.1	+15.5
Spain	-2.6	+20,3	+44.5	+16.0
Sweden	-2.6	+7.9	-2.0	+3.0
Switzerland	-10.7	+2.5	+20.1	+2.0
Turkey	+32.7	+70.1	+94.2	+53.1
USSR	+10.5	+11.2	+56.9	+16.9
UK	-8.8	+7.3	+1.3	+1.4
Yugoslavia	-1.3	+11.1	+77.2	+14.8
Whole WHO European Region	+9.5	+15.8	+36.2	+16.7

Sources: World Population and its Age-Sex composition by Country, 1950-2000: Demographic Estimation and Projection as Assessed in 1978. Population division, Department of International Economic and Social Affairs.

Table 4. Life expectancy at birth. By country 1975-2000, medium variant - Males

	75-80	80-85	85-90	90-95	95-2000
Albania	68.0	68.7	69.3	69.8	70.3
Algeria	55.2	57.4	59.5	61.4	63.2
Austria	68.3	69.0	69.8	70.4	70.8
Belgium	68.5	69.3	70.0	70.5	70.9
Bulgaria	69.3	69.9	70.3	70.7	71.0
Czechoslovakia	66.8	67.3	68.5	69.4	70.0
Denmark	71.3	71.7	72.2	72.5	72.7
Finland	67.8	68.6	69.3	70.1	70.5
France	69.4	70.1	70.6	71.1	71.5
GDR	69.3	69.8	70.2	70.6	70.9
FRG	68.6	69.4	70.1	70.5	71.0
Greece	70.8	71.2	71.6	72.1	72.6
Hungary	66.8	67.6	68.3	68.8	69.4
Iceland	73.1	73.3	73.4	73.6	73.9
Ireland	69.8	70.3	70.8	71.2	71.6
Italy	69.6	70.7	70.7	71.2	71.6
Luxembourg	68.1	68.8	69.6	70.2	70.6
Malta	69.1	69.8	70.3	70.8	71.2
Morocco	53.8	56.1	58.2	60.3	62.2
Netherlands	71.6	72.1	72.5	72.7	72.9
Norway	72.0	72.5	72.7	72.9	73.1
Poland	67.2	68.1	68.8	69.5	70.0
Portugal	66.2	67.3	68.2	68.9	69.8
Romania	68.2	68.9	69.7	70.4	70.9
Spain	70.2	70.7	71.1	71.6	72.0
Sweden	72.3	72.6	72.8	73.0	73.2
Switzerland	71.7	72.1	72.5	72.7	72.9
Turkey	60.3	62.2	64.0	65.5	66.7
USSR	65.0	65.5	66.0	66.6	67.1
UK	69.3	70.1	70.5	71.0	71.4
Yugoslavia	66.9	68.0	68.7	69.4	70.1

Sources: World Population and its Age-Sex composition by Country, 1950-2000: Demographic Estimation and Projection as Assessed in 1978. Population division, Department of International Economic and Social Affairs.

Table 5. Life expectancy at birth. By country 1975-2000, medium variant - Females

	75-80	80-85	85-90	90-95	95-2000
Albania	70.7	71.5	72.2	72.8	73.4
Algeria	57.4	59.7	62.0	64.1	66.1
Austria	75.3	76.0	76.7	77.4	77.7
Belgium	75.3	75.9	76.6	77.4	77.6
Bulgaria	74.9	75.5	76.0	76.3	76.7
Czechoslovakia	73.8	73.8	75.8	76.0	76.2
Denmark	77.0	77.5	77.7	77.9	78.2
Finland	76.3	77.0	77.5	77.7	77.9
France	77.1	77.6	77.8	78.0	78.1
DDR	74.9	75.5	76.0	76.4	76.8
FRG	75.2	75.9	76.6	77.3	77.6
Greece	75.0	75.7	76.4	77.1	77.6
Hungary	72.7	73.5	74.2	74.7	75.9
Iceland	79.3	79.5	79.6	79.9	80.0
Ireland	74.8	75.6	76.4	77.1	77.6
Italy	75.5	76.2	76.9	77.5	77.7
Luxembourg	75.4	76.1	76.8	77.4	77.7
Malta	73.4	74.4	75.3	76.0	76.7
Morocco	57.0	59.4	61.6	63.8	65.8
Netherlands	78.1	78.3	78.5	78.7	78.9
Norway	78.2	78.4	78.6	78.8	79.0
Poland	74.7	75.4	79.9	76.4	76.7
Portugal	72.3	73.4	74.4	75.3	76.0
Romania	72.7	73.7	74.7	75.7	76.4
Spain	75.5	76.2	76.9	77.5	77.7
Sweden	77.9	78.2	78.4	78.6	78.8
Switzerland	77.9	78.1	78.3	78.5	78.7
Turkey	61.6	63.8	65.8	67.8	69.6
USSR	74.3	74.7	75.2	75.6	76.0
UK	75.4	76.1	76.8	77.5	77.7
Yugoslavia	72.1	73.2	74.2	75.1	75.9

Sources: World Population and its Age-Sex composition by Country, 1950-2000: Demographic Estimation and Projection as Assessed in 1978. Population division, Department of International Economic and Social Affairs.