



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTE
ORGANIZACION MUNDIAL DE LA SALUD

*Age - covr
Data collection
population dynamics*

COMPILATION OF NATIONAL DEMOGRAPHIC AND HEALTH PROFILES OF THE ELDERLY

Report of an Advisory Group Meeting

Geneva
8-9 January 1985

IRP/HEE 115 - 02
9 34 6L
ENGLISH ONLY
UNEDITED

CONTENTS

	<u>Page</u>
OBJECTIVE	1
ELEMENTS OF THE PROFILE	1
DEMOGRAPHIC ELEMENTS	1
1. Population composition	1
2. Family structure	2
3. Economic and social characteristics	2
4. Mortality, morbidity and disability	2
4.1 Mortality indices	3
4.2 Morbidity indices	3
4.3 Health utilization	4
4.4 Health and social resources	4
4.5 Physical and mental health status	4
4.6. Integration	5
4.7. Health care costs	5
4.8. Quality of care	5
4.9. Health habits	6
4.10 Projections and estimates	6
PROFILE FORMAT	6
PURPOSE OF PROFILE	7
EXPLOITATION OF EXISTING INTERNATIONAL DATA SOURCES	7
STEPS TO COMPLETING PROFILES	8
5. Assignment report, Hungary	8
6. Global feasibility	9
Annex 1 List of participants	10

OBJECTIVE

The World Health Organization's Medium-Term Programme for 1984-1989 makes provision for support to national health development policies related to aging. This support includes assisting in the compilation of national demographic and health profiles of the elderly in 50% of Member States by 1987 and in 75% of Member States by 1989. The World Health Organization therefore convened this small Advisory Group meeting (for the list of participants see Annex 1) to revise a prototype of the profile drawn up by the consultant, Dr K. Manton, before embarking on the establishment of profiles for other countries. Elements of a demographic and health profile were proposed by the Group, in the light of data collected from Hungary.

The Advisory Group members, and the institutions they represented, were invited to participate in the further development of the profiles.

ELEMENTS OF THE PROFILE

In the elements that follow, the United Nations definition of an elderly person as being 60 or over is used. Values are available, in time series, for many of the elements from a variety of international data bases and published sources, including:

- World Health Organization (including WHO-supported surveys of elderly persons)
- UN Population Division
- United Nations National Household Survey Capability Programme
- International Labour Office
- United Nations Educational, Scientific and Cultural Organization
- International Social Security Association
- United States Department of Health and Human Services
- United States Health Care Financing Agency
- United States Agency for International Development, Family Health and Demographic Surveys
- Committee for International Cooperation in National Research, Demography, Data Base on Aging.

To the extent possible, the elements will be filled in the profile before being sent to the Member States. This will reduce the burden to each Member State. The countries would then be asked to review the profile, make corrections, and fill in missing values from national censuses, death registration, morbidity registers, surveys, health services utilization records and consumer research, various projections and estimates and on the basis of published reports. Care should be taken to make sure that population and service projections and estimates that were filled in from international sources are consistent with the countries' own estimates. Thus, no approach will be made to countries to provide information until the information from available international sources has been fully exploited.

DEMOGRAPHIC ELEMENTS

These elements are designed to generate a graphic presentation of the dynamics of population change, by decade, for 1960-2000. Four sub-elements were proposed, namely:

- Population composition
- Family structure
- Economic and social characteristics
- Mortality, morbidity and disability measures

1. Population composition

This section of the profile gives a picture showing the age and composition of the national population. The change in population, both recent trends and future projections, will be presented.

Population pyramids, with 5-year age intervals, for select time points (preferably census-based) 1960-2000, by sex plus derivative measures, namely: number and proportion of those aged 60 and over (and 80 and over); population sex ratios by 5-year age group; mean/median age, by sex, as well as for the total population.

2. Family structure

This section of the profile gives a picture of the network of mutual intergenerational support.

- (a) Marital status of those 60 and over, by sex; marital status of the 80+ population.
- (b) Ratio of population 60-64 to that aged 40-44.
- (c) Ratio of population 80 and over to that aged 60-64.

(d) Household arrangement:

proportion of elderly in households:
in families
as primary individuals (i.e. alone)
with non-relatives

proportion of elderly in group quarters (including institutions)

(e) Household type:

one-generation
two-generation
three-generation
more than three generations

3. Economic and social characteristics

These elements of the profile depict the support available to the elderly from society, the dynamics of changing urbanization and educational levels.

(a) Labour force participation, by 5 year age group:

from age 50 and above, by sex
percentage of labour force in agriculture, total work force and those age 60 and over

(b) Dependency ratios:

total dependency (60+ and 0-14)
old age dependency (60 and over)
child dependency (0-14 years)

(c) Pension entitlement:

coverage (as percentage of elderly population)
level (as percentage of minimum wage)

(d) Geographical distribution of elderly population by urban/rural status

(e) Educational level:

literacy (i.e. global health for all, indicator number 12)
years of completed schooling of head of household by 5-year age group

4. Mortality, morbidity and disability

These elements generate a picture of the pattern of survival in terms of years of life lived, plus potential gains in years of life and expectation of life free of morbidity and disability based on concepts and models presented in WHO Technical Report Series No. 706.

Select life table parameters for total population and by sex (and for selected dates 1960-1980).

(a) Life expectancy (0e_x) at specific ages (e.g. 0e_0 , ${}^0e_{15}$, ${}^0e_{60}$).

(b) Median age at death (i.e. the age to which 50% of 10% of the population can expect to survive (M_x)).

(b) Age specific survival probabilities (e.g. the probability of surviving to age 15 (l_{15}), 60 (l_{60}), and 80 (l_{80})).

(c) Graphical presentation of changes with time in e_x , l_x , and M_x .

4.1 Mortality indices

Mortality data are largely drawn from death registration. Therefore, measures of the quality of death registration data will be included in addition to the basic data.

Mortality rates by sex for age groups 60-69; 70-79; and 80 and over; total mortality and by 10 leading causes (if available).

Distribution of deaths by age.

Proportion of elder deaths due to cancer (ICD-9 codes 140-208), cerebrovascular diseases (ICD-9 codes 430-438), and cardiovascular diseases (ICD-9 codes 390-429, 440-459).

Proportion of deaths where medical supervision was available within 24 hours of death - total population and for those aged 60 and over.

Proportion of deaths from ill-defined causes (ICD-9 codes 780-799) among population aged 60 and over.

A comparison of age specific mortality rates (a) within country over time, and (b) between the country and the most advanced (i.e. highest life expectancy) country in the region.

Corresponding cause-specific life-table values, for the five most frequent causes of death in elderly people.

These summary statistics show the user of the profile the following features in the changing pattern of mortality:

- (a) the contribution of specific conditions to gain or loss in life expectancy;
- (b) whether or not the age-assault pattern for a particular condition is increasing or decreasing, and
- (c) whether a particular disease is becoming more or less significant as a cause of death:

e_x^A (gain in life expectancy at age x if a selected cause of death (A) were to be eliminated.

e_x^A (mean age of death from a specified cause)

l_x^A/l_x (ratio of the number of deaths in the life table expected from a condition after age x , to the number surviving to that age), i.e. a measure of the probability of dying from specific causes given survival to age x .

changes in these parameters over time-illustration.

4.2 Morbidity indices

These will be stated in terms of rates. The source will be mostly from population registers, available in only certain countries^a. Age-specific rates will be given 60-69, 70-79, 80 and over.

- (a) Age-specific morbidity;

ischaemic heart disease (ICD-9 codes 410-414)

cerebrovascular diseases (ICD-9 codes 430-438)

malignant neoplasms (ICD-9 codes 140-209)

mental health (ICD-9 codes 290-319).

^a The rates generated from groupings of countries could be used as synthetic data for similar countries that have no morbidity data.

(b) Hospital discharge morbidity rates: age-specific rates for 10 leading morbid conditions in age groups specified above.

(c) Outpatient morbidity statistics: age-specific rates for 10 leading morbid conditions.

(d) Nutritional status: the source of these elements will be primarily from surveys and will be provided, if available, by 5-year and 10-year age groups from age 60. Nutritional measures (if available) are restricted to handicap arising from impaired nutrition. Per capita measures taken from national food-balance sheets give an approximation of the nutritional status of the country:

per capita calory supply (total population)
per capita total fat consumption (total population)
per capita animal protein consumption (total population).

4.3 Health utilization

These data would be employed in fixed ratio projections to estimated increase in services needed to meet population changes (rates will be specified for same age groupings as in 4.2):

hospital discharge rates per 1,000 by age and diagnostic category.
duration of stay (average hospital days) in general (short stay) hospitals by age group.
number of dental visits per person per year.
number of physician visits per person per year.
persons aged 60 and over, as a per cent of total admissions to mental health service.

special interventions:

cataract surgery)
hip surgery)
prostatic surgery) rate per 1000 population aged 60 and over
end stage renal dialysis)
pacemakers)
hernia operations)

Accessibility of health services: per cent of population living within one hour's walk to health facility.

4.4 Health and social resources

These elements give a picture of current health and social service resources in a form suited to fixed ratio projection:

number of mental health beds per 1000 population aged 60 and over
number of long-term care beds per 1000 population aged 60 and over, and 80 and over
number of day care places per 1000 population aged 60 and over
number of home help personnel per 1000 population aged 60 and over
number of home nursing personnel per 1000 population aged 60 and over
number of sheltered housing places per 1000 population aged 60 and over
number of physiotherapists per 1000 population aged 60 and over
number of chiropradists per 1000 population aged 60 and over

4.5 Physical and mental health status (from health interview surveys or WHO-supported surveys of elderly)

The 12 elements, available for at least the 28 countries participating in WHO-supported surveys, provide a dynamic picture of the physical and mental handicaps arising from health impairment as elders transit through each 5-year age group.

Prevalence of each of the following 5-year age group and by sex for those aged 60 and over:

no restriction in activities of daily living
hearing handicap (unable to hear when a person is speaking at normal volume)
visual handicap
mastication handicap (difficulty in chewing food)
ability to walk at least 400 metres
urinary incontinence (wetting oneself, day or night)

prevalence of sleep disorders.
worried/tense
disinterested
distressed
tired
forgetful

4.6 Integration

Characterization of health changes at advanced ages involves examining the age variation of the linkage of morbidity, disability and mortality as described in WHO Technical Report Series No. 706. With the above data, we will show how these factors interrelate:

plots of survival curves for morbidity, disability and mortality;
tables of age and sex specific life expectancy by health state;
changes in life expectancy 1960-1980 decomposed by quality of life measures.

4.7 Health care costs

These elements provide a disaggregated health cost profile (by health insurance, drugs and hospital costs) and an aggregated health cost profile:

per capita health insurance expenditure by age, sex and major diagnostic group
expenditure on prescribed drugs for those aged 60 and over
expenditure on over-the-counter drugs for those aged 60 and over
average bed costs per day in general (short-stay) hospitals
health cost profile, by age

The health cost profile (c_i) at age (i) is measured as the amount paid by the social security system, and is obtained by adding the average cost by age for each of the main medical services (j), dentist, doctor, auxiliary, examination, chemist, hospital, treatments at spas, plus the administrative costs. It can be summarized by the following formula:

$$j^c = \sum_i i^c_j$$

$$j^c_i = j^l_i \cdot \frac{j^h_i}{i^h} \cdot \frac{1}{j^l \cdot \sum_i n_i} \cdot Q_j$$

where j^h_i is the average rate of responsibility for health expenditure (j) at age (i)
 j^h is the average value of (j) for the entire population
 j^Q is the total social expenditure for (j)
 j^l_i is the average consumption by volume of (j) at age (i)
 j^l is the average consumption by volume of (j) for the total population
 n_i is the population aged (i)

4.8 Quality of care

These elements, from routine hospital statistics and consumer research, allow the health administrator to track the quality of care.

(a) Percentage of admissions to acute hospitals due to adverse drug reactions, in those aged 60 and over.

(b) Percentage aged 60 and over expressing satisfaction with:

- primary health care
- referral level health care

Certain concepts need careful definition.

4.9 Health habits

Present health habits indicate future health problems as elders transit through the higher ages and allow monitoring of health education intervention.

(a) Percentage of those aged 60 and over;

- non-smoker
- ex-smoker
- smoker (14 cigarettes/day or less)
- smoker (15 cigarettes/day or more)

(b) Percentage drinking too much (based on self-reporting).

(c) Percentage of those aged 60 and over taking regular exercise.

4.10 Projections and estimates

Health service needs estimates and detailed population projections.

PROFILE FORMAT

The profile should be in a format that:

- gives ready access to a comprehensive range of information
- displays the data in a desired graphical form and
- allows the user to understand the implications for health planning and management.

Powerful microcomputer software tools exist which fulfil the above criteria (World Health Organization, 1985) and which, in addition, are easy to use. Three examples were demonstrated:

a programme called LOTUS 1-2-3, which is the WHO standard electronic spreadsheet programme;

FILEVISION, an easy-to-access data base linked to maps or symbolic displays; and

a Computer-Assisted Planning (CAP) software package developed for WHO Member States by Johns Hopkins School of Hygiene and Public Health. This incorporates normative comparison within a group of countries.

The first- and last-mentioned operate on the standard WHO operating system MS-DOS. All three can, or soon will be able to, operate on the Apple MACINTOSH microcomputer. Only the CAP programme is in the public domain. LOTUS 1-2-3 (JAZZ on the MACINTOSH), and FILEVISION must be purchased separately for each machine. For a first-time microcomputer user, FILEVISION is the easiest to use.

At this stage in the development of the profile, it is desirable to develop illustrative displays with data available from a small heterogeneous group of countries, since many cells in the profile of developing countries will have missing values. The final choice of format would avoid the problem of having a minimal and optimal data set and would also, perhaps, permit the generation of "synthetic" data for planning and management purposes, where key values are missing.

PURPOSE OF PROFILE

WHO's commitment to compiling demographic and health profiles is described under the rubric of "National Health Development" in the Organization's programme on Health of the Elderly for 1984-1989. This makes its function clear, in that it is a tool to assist in the managerial process for national health development.^a This is to say that it is designed for the planner, epidemiologist or health manager, to allow him or her to identify the health and social status of the elderly within a given society and to anticipate changes in status or social support and service needs.

By adhering to a standard format, and by indexing on such variables as geographical status, socioeconomic group, cross-national and within-national comparisons are feasible. This directs attention to minimizing inequalities, which is the central idea of "Health for All".

The considered attention given to the format in the above paragraph is to enable the "new" aging countries to foresee the scope and magnitude of future health problems. The profile therefore should be designed as a tool of communication, which simplifies the comprehension of demographic, statistical and epidemiological data.

The elements above are therefore constructed according to a logic, namely:

basic health monitoring statistics, which give particular attention to trends;

population projections and "static component" or fixed-ratio values that allow the planner to anticipate the impact of population changes on health services; and

statistics for the better design of health and social services.

EXPLOITATION OF EXISTING INTERNATIONAL DATA SOURCES

As mentioned above, basic health monitoring statistics and population projections are available from a number of international data banks and values for many elements of the profile for each country would be entered centrally. For example, the World Health Organization has a mortality data bank containing age-, sex- and cause-specific mortality, survey data from representative samples of elderly people by age group for some 26 countries, and routine reports from countries on 12 global health indicators, according to a common format.

The UN Population Division has published population projections and the UN Centre for Social Development and Humanitarian Affairs has a sub-set of these for those aged 60 and over for most countries of the world; the UN Economic Commission for Europe has age-cost profile for the countries of the region (which include USA and Canada) and GICRED (the Committee for International Cooperation in National Research and Demography) and the US Bureau of Census International Division, are compiling a data base on aging for 25 countries. In addition, the United States Agency for International Development is undertaking Family Health and Demographic Surveys in 35 countries and the United Nations National Household Capability Programme contains information on health conditions such as blindness. The World Bank has population data on China.

Country by country description of social security and health insurance systems are produced by the International Social Security Association and labour force participation statistics are available from the International Labour Office. Information on education is readily available from UNESCO.

Thus the demographic and health profile exercise should not be burdensome to countries but would rather enable them to call up relevant data from a systematic data base.

^a Managerial process for national health development, Geneva, World Health Organization, 1981 ("Health for All Series", No.5)

STEPS TO COMPLETING PROFILES

The Health of the Elderly programme has a specific target -- to complete the profile for 50% of Member States by 1987. Various strategies are envisaged to achieve this. In the Region of the Americas, a collaborating centre will assist in the task; in South-East Asia, a WHO/HQ staff member will discuss the development of profiles following an international meeting on the demography of aging to be held in Trivandrum in February 1985; in Europe, a consultant will be invited to assist 10 countries to compile these; in the Western Pacific profiles will be completed in conjunction with WHO-supported surveys. The London School of Hygiene and Tropical Medicine will send pre-filled profiles to those participating in the International Course on the Epidemiology of Aging, London, 2-27 September 1985.

There are a number of dates or milestones in attaining the targets:

<u>1985</u>		<u>Action</u>
February	Candidate countries identified in South-East Asia Region	Dr Lopez
March	Finalization of profile format	Dr Manton/ Dr Macfadyen
May	Demonstration should be arranged for selected national delegates to World Health Assembly, as potential users	Mr Duppenhaler
3-4 June	WHO will be represented at the meeting of the CICRED Network on Population Aging: Collaborative Research on Aging; a demonstration could be arranged, to obtain critical comments	Dr Macfadyen
June	ECE meeting, Bratislava	Dr Hermanova/ Dr Tamasy
10-11 July	A WHO/NIA meeting in New York of Directors of National Institutes of Gerontology from 6 WHO Regions could be invited to assist in completing the profiles	Dr Davis
2-27 September	Profiles completed for 15 countries represented at the London School of Hygiene and Tropical Medicine Course on the Epidemiology of Aging	Dr Kalache
November	Demonstration of profiles (Buenos Aires)	Dr Anzola Dr Macfadyen
by December	Profiles completed for 10 European countries	Dr Tamasy Dr Hermanova
by December	Profiles completed for 10 countries in the Americas	Dr Manton Dr Anzola-Pérez

5. Assignment report, Hungary

Hungary was identified, at a preliminary meeting on 5-6 September 1984, as a country rich in demographic, planning and public health statistics and the group was fortunate to have such comprehensive and carefully analysed information to assist them in their task during the present meeting. It was agreed that WHO would transmit the October 1984 assignment report of Dr Manton, Dr Eblen and Dr Tamasy to the Hungarian authorities, with a recommendation that this be reviewed by all the cooperating parties and prepared for publication, since there is a need (especially in developed countries) for this type of evaluative or analytic effort, as well as the more descriptive effort pursued in the profile.

Hungary had also provided the stimulus to bring together the different organizations working with national demographic institutes, and the commitment to future cooperative efforts was a most practical outcome of the meeting. The health focus of the WHO endeavours in this field ensures that there will be minimal overlap with what the organizations are doing.

6. Global feasibility

The initial target is to produce as completed a profile as possible for 50% of WHO Member States. For many countries only a core of the elements will be available, but this sub-set will emerge only after the serious effort of compilation begins.

Annex 1

LIST OF PARTICIPANTS

REPRESENTATIVES OF OTHER ORGANIZATIONS

Committee for International Cooperation in National Research in Demography
(CICRED)

Mr Bui Dang Ha Doan
Director for Scientific Affairs, Paris, France

TEMPORARY ADVISERS

Dr A.A. El Gamal
First Under-Secretary of State (and Member of WHO Executive Board), Ministry of Health
c/o Ministry of Foreign Affairs, Cairo, Egypt

Dr J. Tamasy
Deputy Director, Central Statistical Office, Demographic Research Institute, Budapest, Hungary

Dr A. Kalache
Senior Research Fellow, Department of Community Health, London School of Hygiene
and Tropical Medicine, London, United Kingdom

Dr K. Manton
Center for Study of Aging, Duke University, Durham

UNITED NATIONS

Centre for Social Development and Humanitarian Affairs

Ms L. Hervey
Consultant, Aging Unit, Vienna, Austria

Economic Commission for Europe

Mr J. van den Boomen
Head of the Population Activities Unit in the General Economic Analysis Division, Geneva,
Switzerland

Mr J.-P. Gonnot
Consultant, Population Activities Unit in the General Economic Analysis Division

WORLD HEALTH ORGANIZATION

Global Programme for Health of the Elderly, Copenhagen

Dr D.M. Macfadyen, Manager

WHO Headquarters

Dr H.E. Hanslukwa
Team Leader, Global Epidemiological Surveillance and Health Situation Assessment (GES)

Dr A.D. Lopez
Division of Epidemiological Surveillance and Health Situation and Trend Assessment (HST)

Mr J. Duppenhaller
Epidemiological and Statistical Methodology (ESM/HST)

Regional Office for the Americas

Dr E. Anzola-Pérez
Regional Adviser, Programme for Health of the Elderly, Programme of Adult Health