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INDEXED

INDICATORS FOR MONITORING PROGRESS  
TOWARDS HEALTH FOR ALL BY THE YEAR 2000

Report on a WHO Consultation

Copenhagen  
6-9 April 1981



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## 1. General remarks

The Consultation was held at the WHO Regional Office for Europe from 6 to 9 April 1981. It was opened by Dr A.A. Weber, Director, Health Information on behalf of Dr Leo A. Kaprio, Regional Director. The list of participants is attached as Annex III.

The purpose of the Consultation was to review indicators to monitor the progress in the Member States of the European Region of WHO in the implementation of national strategies and plans of action for achieving health for all by the year 2000.

Indicators are needed at three levels: national indicators are to be selected and used by individual countries according to their situation and objectives; a limited number of regional indicators will be needed to measure progress made in the European Region; and 12 global indicators have been proposed for measurement in relation to the global effort towards the objective of health for all.

The Consultation attempted whenever possible to propose specific indicators with suggestions as to their use, definition, etc. It recognized that in a number of areas, no universally acceptable indicators could be proposed and that there are general needs in several of these areas for important development efforts.

The preparation of the revised list of indicators is therefore to be seen as the first step for consultation with national administrations in order (1) to obtain further experience, (2) to arrive at a meaningful and limited set of regional indicators and (3) to propose a list of indicators which could be applied at national level.

## 2. Recent development

The 30th World Health Assembly decided in May 1977 that the main social target of governments and WHO in the coming 20 years should be the attainment by all the citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. The relevant references to recent developments are listed on page 4.

The global strategy for health for all by the year 2000 was then discussed by the sixty-seventh session of the Executive Board of WHO and submitted to the Thirty-fourth World Health Assembly (1). This strategy incorporates regional strategies and in particular the regional strategy for attaining health for all by the year 2000 which was discussed in October 1980 at the thirtieth session of the Regional Committee for Europe (2).

Both strategies propose indicators for the monitoring of progress towards the objective of health for all by the year 2000.

An annotated list of indicators to guide countries in the selection of indicators for monitoring national progress was presented to the sixty-seventh session of the Executive Board (3). At the European level a workshop which was held in Brussels from 10 to 14 November 1980 reviewed the list of indicators proposed in the regional strategy in view of specific European possibilities and requirements (5). It proposed specific indicators for different subjects and recognized the existence of a number of areas for which either no indicator is at present available in a uniform way or national or European targets have not yet been agreed upon. In this respect a Planning Meeting was held at the Regional Office to discuss further development of the regional strategy towards regional targets (4).

For the purpose of this document on indicators, a target was defined as the expected completion of certain activities or the attainment of some results at a given time. In contrast, indicators are variable and help measure changes or progress towards a given result or a given target. The two concepts are therefore complementary, and the Consultation recognized the need to coordinate closely the development of indicators with the activities relating to the setting of targets.

In the development of indicators, due consideration is to be given to the differing levels of development of health information systems in countries of this Region. Therefore many of the measures proposed may not be universally available immediately. Although data for the establishment of indicators should be gathered as an intrinsic part of the system for delivering health care, many require sophisticated population survey methods and may not be available within some countries at present. However, it has seemed worthwhile to include them for those who are using such surveys.

### 3. Future developments

At the global (world) level the strategy for health for all was submitted to the Thirty-fourth World Health Assembly in May 1981 for its consideration and approval. The strategy already contains 12 indicators for monitoring progress at the global level (Annex I).

At the regional (European) level, the selection of regional targets should be undertaken in 1981 as a collaborative effort between the Regional Office and national experts and institutions, coordinated by a steering group. It is anticipated that the steering group will finalize a document containing regional targets by February 1982 and that this document will be submitted to the thirty-second session of the Regional Committee in 1982, together with a regional plan of action including common indicators.

The development of indicators for monitoring progress at all levels towards health for all by the year 2000 is to be compatible with the above development.

### 4. Development and presentation of indicators

Eventually all indicators to be retained at any level (national, European or global) should be presented with the following specifications:

- title of indicator,
- definition,
- procedure for data collection including source(s) of information,
- methods of calculation (and formula if applicable),
- uses and limitations,
- availability of comparable information in the European Region (if possible information on past trends) and availability of proxy indicators,
- proposed disaggregation.

It was recognized that in several areas of the strategy the information available is limited and there are no internationally agreed indicators. In a few areas, however, it would be possible to describe such indicators - mainly indicators of mortality and disability as well as those dealing with availability and utilization of health care services.

A list of proposed indicators for monitoring progress in the European Region is attached as Annex II.

Indicators are tentatively classified in four categories:

(I) those for which complete specifications exist and standardized uniform measurements are available or readily obtainable in the majority of European countries (data on such indicators could be collected and analysed without further research);

(II) those for which an international definition exists at least in countries of the Region, although either there is still insufficient knowledge or agreement as to methods of measurement and/or comparability from country to country (with such indicators one may wish first to test the usefulness of information for international comparisons), or information is not readily available in many countries;

(III) those for which a definition has been proposed, although the validity of different measurement methods and/or the sensitivity to the corresponding health concern has still to be assessed (more extensive applied research and development is required on such indicators);

(IV) those which correspond to a particular health concern, although they have not been specifically formulated (in such areas of concern extensive consultations and experimentation may be required before an indicator could be explicitly proposed).

The Regional Office may therefore wish to submit this list to governments as well as intergovernmental and nongovernmental organizations and to consult them as to:

- their agreement with the indicators listed and/or use of alternative indicators;

- the definitions and procedures used;
- the uses made of the indicators;
- the centres, institutions or research workers that are active in the further development of indicators on the subject or area and who may be willing to take part in a coordinated effort.

The Consultation advocated close cooperation with the activities of regional groups engaged in formulating targets, global efforts, and international developments sponsored by other organizations such as the Organisation for Economic Co-operation and Development and the International Epidemiological Association. Whenever appropriate, indicators proposed in "the 1980 OECD list of social indicators" (6) are given in Annex II.

#### 5. Disaggregation

The indicators proposed cover most of the quantifiable health problems raised in the regional strategy (2) with the important exception related to equity. Measurement of equity in different social, economic and demographic groups can best be performed by disaggregation of relevant health and related indicators.

The following standard disaggregations are therefore proposed for most of the indicators related to individuals.

1. Age. For many indicators it is necessary at least to separate children (0-14 years), active population (15-64 years) and the elderly (65 years and over).
2. Sex.
3. Geographic location. The disaggregation may be either by administrative subdivision or by criteria related to health, e.g. mountain/plain, desert or nondesert.
4. Size of locality. Minimum tabulations should usually distinguish between large cities, other cities and rural areas (500 000 inhabitants and over has often been chosen as the minimum limit of a "large city").
5. Socioeconomic status. Various classifications are recommended according to the type of indicator: active-inactive; broad occupation groups, etc.
6. Education level. At least primary, secondary, university and equivalent levels should be distinguished.

Other disaggregation criteria may be type and size of household, occupation and type of economic activity, nationality, etc.

Disaggregation variables should be selected according to their value in showing meaningful gradients of health concerns for which action by individuals, the community, health and other services is possible. The choice of suitable classes will be greatly influenced by the availability in the different countries of data on denominators for the calculation of relative values. International and European recommendations, e.g. those drawn up for household and population surveys and those of internal agencies, should be considered in determining the disaggregations to be used at the European level.

In reviewing the list of indicators in Annex II in the light of the regional strategy and its priority areas, it will be seen that the information required for calculating some of the indicators may be used for two different purposes according to the priority area considered. It can indicate a specific health concern: for instance the percentage of population with reasonable access to a source of primary health care (3.3.1) is an indicator of the accessibility of service. It can also be used for disaggregating other indicators. The indicator of incidence of diseases for which effective immunization exists (1.6) may be presented separately for populations living at different distances from a source of primary health care, for instance in attempting to determine whether immunization coverage may be defective for populations with difficult access to such sources. Therefore, the same variate, in this case distance to a source of primary health care, could be used differently, either for the compilation of an indicator, or as an explanatory variate for disaggregation of another indicator.

6. Time-table

It was recommended that the present report should be forwarded as soon as possible to the national administrations and various international bodies in order to have the answers analysed by September 1981. The analysis would be presented in Autumn 1981 to the steering group on regional targets and, with their comments, be submitted to national administrations with proposals for further developments.

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1. Global strategy for health for all by the year 2000. Geneva, World Health Organization ("Health for All" Series, No. 3) (in preparation).
2. Regional strategy for attaining health for all by the year 2000. Copenhagen, WHO Regional Office for Europe, 1981 (unpublished document EUR/RC30/8 Rev.1).
3. Development of indicators for monitoring progress towards health for all by the year 2000. Geneva, World Health Organization ("Health for All" Series, No. 4) (in preparation).
4. Further development of the regional strategy towards regional targets. Copenhagen, WHO Regional Office for Europe, 1981 (unpublished document ICP/GPD 003(2)/7).
5. Use of health indicators: report on a Workshop. Copenhagen, WHO Regional Office for Europe (in preparation).
6. Organisation for Economic Co-operation and Development. The 1980 OECD list of social indicators. 1981 (in print).

Annex I

LIST OF 12 INDICATORS FOR MONITORING PROGRESS AT GLOBAL LEVEL,  
ADOPTED BY THE THIRTY-FOURTH WORLD HEALTH ASSEMBLY IN MAY 1981a

Progress will be monitored in terms of the number of countries meeting selected criteria, as follows.

- (1) Countries where health for all has received endorsement as policy at the highest official level, e.g., in the form of a declaration of commitment by the head of state; allocation of adequate resources equitably distributed; a high degree of community involvement; and the establishment of a suitable organizational framework and managerial process for national health development.
- (2) Countries where mechanisms for involving people in the implementation of strategies have been formed or strengthened, and are actually functioning, i.e., active and effective mechanisms exist for people to express demands and needs; representatives of political parties and organized groups such as trade unions, women's organizations, farmers' or other occupational groups are participating actively; and decision making on health matters is adequately decentralized to the various administrative levels.
- (3) Countries where at least 5% of the gross national product is spent on health.
- (4) Countries where a reasonable percentage of the national health expenditure is devoted to local health care, i.e., first-level contact, including community health care, health centre care, dispensary care and the like, excluding hospitals. The percentage considered "reasonable" will be arrived at through country studies.
- (5) Countries where resources are equitably distributed, in that the per capita expenditure as well as the staff and facilities devoted to primary health care are similar for various population groups or geographical areas, such as urban and rural areas.
- (6) Developing countries which have well-defined strategies for health for all, accompanied by explicit resource allocations, and whose needs for external resources are receiving the sustained support of more affluent countries.
- (7) Countries where primary health care is available to the whole population, with at least the following:
  - safe water in the home or within 15 minutes' walking distance, and adequate sanitary facilities in the home or immediate vicinity;
  - immunization against diphtheria, tetanus, whooping-cough, measles, poliomyelitis and tuberculosis;
  - local health care, including availability of at least 20 essential drugs, within one hour's walk or travel;
  - trained personnel for attending pregnancy and childbirth, and caring for children up to at least one year of age.
- (8) Countries where nutritional status of children is adequate, in that:
  - at least 90% of newborn infants have a birth weight of at least 2500 g;
  - at least 90% of children have a weight-for-age that corresponds to the standards based on the WHO document "Measurements of nutritional impact" (WHO/FAP/79.1).
- (9) Countries where the infant mortality rate for all identifiable sub-groups is below 50 per 1000 live births.

<sup>a</sup> A complete list of indicators will appear in the WHO "Health for All" Series, No. 3.

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- (10) Countries where life expectancy at birth is over 60 years.
- (11) Countries where the adult literacy rate for both men and women exceeds 70%.
- (12) Countries where the gross national product per head exceeds US\$ 500.

Annex II

PROPOSED INDICATORS FOR MONITORING PROGRESS TOWARDS  
HEALTH FOR ALL IN THE EUROPEAN REGION

DEGREE OF  
AVAILABILITY<sup>a</sup>

1. HEALTH STATUS

A. Mortality

- |   |    |
|---|----|
| 1.1 Life expectancy   | I  |
| 1.2 Cause-specific mortality rates  |    |
| 1.2.1 Deaths from<br>a specific cause:<br>cancer, cardiovascular<br>diseases, accidents, congenital<br>anomalies, other as relevant | I  |
| 1.2.2 Years of life lost  | II |
| 1.3 Infant mortality:<br>neonatal, post-neonatal  | I  |
| 1.4 Perinatal mortality   | II |
| 1.5 Maternal mortality  | I  |

B. Morbidity

- |  |        |
|--|--------|
| 1.6 Incidence of selected diseases:                |        |
| - Diseases for which effective immunization exists | I      |
| - Venereal diseases                                | II     |
| - Malaria (in affected countries)                  | I      |
| - Foodborne diseases                               | II     |
| - Diarrhoeas                                       | I - II |
| - Other as relevant                                | I - II |
| 1.7 Prevalence of dental conditions                |        |
| 1.7.1 Dental caries                                | I      |
| 1.7.2 Periodontal diseases                         | I      |

C. Disability

- |                                      |    |
|--------------------------------------|----|
| 1.8 Days of restricted activity      | II |
| 1.9 Disability/level of activity     | II |
| - Prevalence of long-term disability |    |

<sup>a</sup> See section 4 of the main report.

D.	<u>Positive indicators of social and mental wellbeing</u>	
	1.10 Self-perception of health state	III
	1.11 Wellbeing	III - IV
E.	<u>Physiological measurements</u>	
	1.12 Birth weight	II
	1.13 Height and weight of schoolchildren	II
	1.14 Physical maturity and intellectual development	III - IV
F.	<u>Demographic background variables</u>	
	1.15 Crude birth rate	I
	1.16 Net reproduction rate	I
	1.17 Proportion of age groups	I
2.	FACTORS AFFECTING HEALTH	
2.1	Behavioural factors	
2.1.1	Dietary practice	
	- Calorie intake	III
	- Balanced nutritional intake	III
2.1.2	Breastfeeding (percentage of infants fully breastfed at five months)	II
2.1.3	Alcohol consumption	III
2.1.4	Tobacco consumption	III
2.1.5	Medical drug consumption	II-III
2.1.6	Physical activity	
	2.1.6.1 Proportion engaging in recreational physical activity	III
	2.1.6.2 Levels of activity	III
2.1.7	Birth planning behaviour	
	2.1.7.1 Contraceptive profile	II
	2.1.7.2 Effective contraception	
	- Percentage of women at risk using effective means	II
	2.1.7.3 Unexpected and undesired pregnancies	
	- Proportion of pregnancies which came earlier than planned (or were not wanted)	II
	2.1.7.4 Possible proxy indicators:	
	- Induced abortions, illegitimate births	I - II

- Premarital conceptions	I - II
- Proportion of women with five pregnancies and more	III
- Pregnancies before age 15	I
- Pregnancies between ages 15 and 19	I
2.1.8 Time budget	
2.1.8.1 Free time	II
2.1.8.2 Free time activities	III
2.2 Social and economic factors	
2.2.1 Educational level	
- Average age at which full time education was finished	I
- Percentage distribution of level of qualifications attained	I
- Proportion in regular education in different age groups	I
2.2.2 Employment and quality of working life	
2.2.2.1 Unemployment rate	I - II
2.2.2.2 Involuntary part-time work	II - III
2.2.2.3 Discouraged workers	III
2.2.2.4 Average working hours	I - II
2.2.2.5 Travel time to work	III
2.2.2.6 Paid annual leave	I - II
2.2.2.7 Atypical work schedule	III
2.2.2.8 Average earnings	III
2.2.2.9 Work environment nuisances	III
2.2.3 Material deprivation	II
2.2.4 Urbanization	III - IV
2.3 Physical environmental factors	
2.3.1 Safe water	I
- Percentage of population with safe water in the home and adequate sanitary facilities	
2.3.2 Waste disposal	I
- Population connected to a public waste disposal system (coverage and frequency of solid waste collection in rural areas)	

2.3.3 Chemical pollution	II - III
2.3.4 Exposure to ionizing radiation	III
2.3.5 Noise	IV
2.4 Housing	
2.4.1 (Indoor) living space	I
2.4.2 Basic amenities	I
3. HEALTH CARE PROVISION	
3.1 Availability of health services	
- Ratio between the population and the health facilities and personnel:	
physicians	I
qualified nurses	II
auxiliary nursing personnel	II
midwives	I
dentists	I
pharmacists	I
hospital beds	I
3.2 Availability of primary health care	
- Population covered by:	
provision of health education	II - III
safe water	I
immunization	II - III
local health care	II
trained personnel	III
- Percentages of doctors, nurses, etc., working outside institutions	III
- Indicators of self-care, etc.	IV
3.3 Accessibility of services	
- Proportion of population that can be expected to use a specific facility or service	
3.3.1 Physical accessibility	
- Average delay between an emergency and care	III
- Percentage of population with reasonable access to a source of primary health care	IV
- Average waiting time for selected facilities	III

3.3.2 Economic accessibility	
- Percentage of population covered by medical insurance, social security scheme, etc.	II
3.3.3 Social and cultural accessibility	IV
3.4 Financial resources	
3.4.1 Health expenditure as proportion of GNP and health expenditure per head of population	II
3.4.2 Proxy measurement of PHC expenditure	
- Percentage cost of health services falling outside inpatient institutions	III
3.4.3 Cost per unit of service	III - IV
3.5 Quality of care	
3.5.1 Quality of care	IV
3.5.2 Consumer satisfaction	IV
3.5.3 Incidence of nosocomial infections	III
3.6 Utilization of care	
- Proportion of people who actually receive a service in relation to total population or population in need	
3.6.1 Proportion of children at risk immunized	III
3.6.2 Proportion of pregnant women who receive antenatal care, or who have their deliveries supervised by a trained attendant	II
4. POLICY MEASURES	
4.1 Endorsement of health for all as policy at the highest official level	III
4.2 Existence of mechanisms for involving people in the implementation of strategies	III
4.3 Change in distribution of resources	III

1. HEALTH STATUS

A. Mortality

1.1 Life expectancy (at birth, and at ages 1, 20, 40, 60)

Life expectancy - or expectation of life - at a given age is the average number of years which persons of that age can expect to live under the mortality pattern current in the relevant population. Life expectancy at birth by sex is the measure used most frequently.

The information is published for most countries in the Region, and measurement involves standard demographic techniques requiring actuarial life tables. Cohort life tables provide interesting additional information. The longitudinal recording of mortality data - already available in many countries - gives the fundamental trends for the studied population.

Life expectancy is considered as a general indicator of the level of living, as well as reflecting standards of health care. Health action to reduce mortality will result in improved life expectancy.

Life tables may be established for specific groups by special studies. Analysis of life expectancy in relation to socioeconomic status and occupation is desirable at least on samples.

Where this cannot be achieved, measures of comparative mortality at given ages or the standardized mortality ratio (SMR) provide alternative indicators. Age-specific rates permit the identification of premature deaths.

1.2 Cause-specific mortality rates (or years of life lost)

1.2.1 Deaths from a specific cause (during a calendar year per 100 000 population)

When using aggregated rates, standardization by age and sex is needed for comparisons.

Detailed information is available in countries in which a satisfactory civil registration system operates and in which a high proportion of deaths is certified medically. In developing countries lay reporting may be used to establish death rates from certain causes, e.g. gastroenteritis, measles, tetanus, malaria and accidents. Instructions using local terminology should be issued to guide the primary health care personnel.

A high death rate will indicate the public health importance of the particular disease. The reliability of the determination of causes of death should be carefully examined.

It is recommended to publish mortality rates for cancer, cardiovascular diseases, accidents, suicides, congenital anomalies, and for other selected causes according to priorities in countries.

1.2.2 Years of life lost

This indicator, which gives greater weight to younger deaths, may usefully be calculated. It can be calculated by aggregation of the expected years of life at the age at death. The expected years are often restricted to a final age of 65 or 70 to give greater emphasis to loss of productive life.

Disaggregations according to sex, marital status and socioeconomic/occupational groups are recommended.

1.3 Infant mortality (neonatal and post-neonatal to be reported separately whenever possible)

The infant mortality rate (IMR) is the number of deaths of infants up to the age of 1 year per 1000 liveborn infants in a given year. It includes neonatal mortality (first four weeks) and post-neonatal mortality. Specific rates may also be established for early neonatal mortality (first week of life). Being available through civil registration systems, IMR not only reflects the magnitude of those health problems which are directly responsible for the death of infants, such as diarrhoeal and respiratory infections, malnutrition, along with other specific infectious diseases and perinatal conditions, but also the level of health of mothers, the level of antenatal and postnatal care of mothers and infants, family planning policy, the environmental health situation and, in general, the socioeconomic development of a society. Within a society it has also been found in both developed and developing countries that IMRs show an inverse correlation with socioeconomic status of the parents, no matter what criterion of determining that status is used.

IMR has also been found to be very indicative for change over time in health conditions in a country. In countries where data on IMR have been calculated for long periods, steady reductions have been noted parallel with improvements in the standard of living and sanitary conditions and increased availability and accessibility of health services to the population.

Disaggregations are recommended according to socioeconomic status/educational level of parents; maternal age/parity; marital status; causes, including genetic causes; duration of gestation; birth weight.

#### 1.4 Perinatal mortality

The calculation of this indicator has been modified lately to include foetal deaths and early neonatal deaths of 1000 g and more. The rate is expressed for 1000 foetal deaths and live births of 1000 g and more. The previous definition included late foetal deaths (foetal deaths after at least 28 weeks gestation) and deaths occurring within the first week of life. The rate was expressed per 1000 liveborn infants.

This indicator is particularly relevant for countries implementing specific maternal and child health programmes.

The recommended disaggregations are the same as for infant mortality.

#### 1.5 Maternal mortality

A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. The maternal mortality rate should be expressed per 1000 live births. In communities where such a long follow-up is not possible, a shorter period (say, 48 hours, or 7 days) may be used, provided it is clearly stated. It might be useful to analyse separately deaths in relation to induced abortion.

The computation of the rate requires a well-developed registration system of births and deaths, as well as of the causes of death. In the absence of a reliable registration system, a proxy measurement based on the counting of deaths which have occurred to women soon after childbirth may be used.

The maternal mortality rate reflects the risk to mothers during pregnancy and childbirth, and is influenced by general socioeconomic conditions; unsatisfactory health conditions preceding the pregnancy; incidence of the various complications of pregnancy and childbirth; availability and utilization of total health care facilities, including prenatal and obstetric care.

If the number permits, age-adjusted maternal mortality rates and standardized mortality should be computed. It is also appropriate to calculate parity-adjusted rates. Likewise, if feasible, the rate may be broken down into two groups according to direct obstetric deaths, and indirect obstetric deaths.

### B. Morbidity

#### 1.6 Incidence of selected diseases

Incidence rate is defined as the number of illnesses (spells or persons, as applicable) beginning within a specified period of time and related to the average number of persons exposed to risk during that period. The rate is expressed per 1000 (or 10 000, or 100 000) persons per annum.

Among the various sources of morbidity statistics, the following are of importance:

- (a) notifications, which even when incomplete, permit the trend to be followed;
- (b) records from health service contacts which permit incidence or prevalence rates to be computed, namely:
  - disease registers which are particularly suitable for these purposes;
  - hospital records of inpatients, together with records of attendance of outpatients in hospitals, clinics, dispensaries, school medical services, etc., which can be used instead, but usually give only crude indications of morbidity;

- (c) absenteeism and sickness records in educational institutions, the civil service, and private enterprises, although these are often biased due to administrative differences;
- (d) special sickness surveys covering the whole community or samples of it;
- (e) records taken during domiciliary visits by health staff.

Special attention should be given to subgroups which are at risk for specific diseases.

The incidence rate as a health status indicator is useful for action to control diseases and for research into etiology and pathogenesis, distribution of diseases, and efficacy of preventive and therapeutic measures. Analysis of differences in incidence rates reported for various socioeconomic groups and geographical areas may also provide useful insights into the effectiveness of the health services provided. Age and sex distribution is also important.

Recommended indicators in relation to the regional strategy include:

- incidence of diseases for which effective immunization exists: tuberculosis, diphtheria, tetanus, whooping cough, measles, poliomyelitis;
- incidence of venereal diseases;
- incidence of malaria (in affected countries);
- incidence of foodborne diseases, waterborne diseases and diarrhoeas;
- incidence of other specific diseases according to priorities in each country (cancer, cardiovascular diseases, etc.).

#### 1.7 Prevalence of dental conditions

##### 1.7.1 Dental caries

- Average number of decayed, missing and filled teeth per person at given ages (DMFT or DMFS index).
- Average number of missing teeth per person at given ages (MT index).

##### 1.7.2 Periodontal diseases

- Average number of segments affected by intense gingivitis per person at given ages (children 6 - 15 years of age).
- Average number of segments affected by advanced periodontal destruction per person at given ages (over 16 years of age).

#### C. Disability

##### 1.8 Days of restricted activity

Days of restriction of activity experienced per person per year due to health problems.

Although best obtained by household interview surveys, information may also be collected through sickness absenteeism statistics (insurance scheme, reports from employers, reports on school absenteeism).

Such an indicator may reflect morbidity, but also other social causes, and there is a need for more investigation about its relevance with regard to health. If possible, disaggregation is recommended by age, sex, occupation, socioeconomic status, and the most important causes.

##### 1.9 Disability/level of activity

Disability is defined as restriction or lack of ability to perform an activity in the manner or within the range considered normal. Disability may take the form of disturbances (i) in behaving in an appropriate manner; (ii) in personal care (such as excretory control and the ability to wash and feed oneself); (iii) in the performance of other activities of daily living, and (iv) in locomotive activities (such as the ability to walk). There is no international

definition of what duration should be considered long-term. A practical definition should be established which will suit the particular conditions of the community.

The prevalence of long-term disability is expressed by the percentage of population experiencing long-term disability at a given time. The indicator could be expressed in a more positive way as "persons reporting no long-term health problems which cause limitation of normal activity".

The method most frequently used for collecting information is a community survey in which households are visited and persons suffering from long-term disability are recorded. The status of long-term disability is often included as an item in a population census. As a large number of enumerators are employed in a population census, simple and practical instructions should be provided to the enumerators on how to identify long-term disability.

In some countries a significant proportion of disabled persons live in institutions, and this should be taken into consideration. In some countries information may be made available by health insurance and social security schemes. Another source, although rather incomplete and biased, is statistics from rehabilitation institutions.

The indicator is used for investigation of the causes of disability and for planning of preventive, curative and rehabilitative measures.

Disaggregation is recommended according to age, sex, cause, type of impairment and severity of disability.

#### D. Positive indicators of social and mental wellbeing

##### 1.10 Self-perception of health state

This indicator refers to people's perceptions of their own level of health as elicited by questionnaire techniques, e.g. the proportion of the population describing themselves as in good or excellent health (during the last month). The computation normally excludes the institutional population. Being available from sample surveys of the population, these measures have been shown to produce a differential response in line with known levels of morbidity. Self-perception is affected by subjective factors which do not necessarily reflect the objective health state. It is useful to compare results among different population groups (geographical, socioeconomic, high-risk groups).

##### 1.11 Wellbeing

Specific measures of social and mental wellbeing are difficult to determine. Many measures of social malaise will reflect differences in social and economic conditions, and cultural habits. A possible global measure which reflects social and mental as well as physical wellbeing may be obtained from enquiries on life-satisfaction. Such enquiries may yield an overall evaluation and also provide response on specific domains of life experience, which may be individually relevant (e.g. family relationships) or may be combined into an index.

There is need for a comparative review of research made in this field.

#### E. Physiological measurements

##### 1.12 Birth weight

Percent distribution of live births by birth weight.

In the global strategy, it is proposed to use the percentage of low birth weight (LBW) using 2500 g as a standard limit. Countries having good registrations of birth may decide to use more refined indicators.

Birth weight indicates the chance of survival of a baby and its healthy growth and development, and is thus an important guide to the level of care needed by individual babies. It also reflects the level of nutrition and of health of the mother. A high percentage of LBW therefore points to deficient health status of pregnant women; too close a spacing of births; inadequate prenatal care; or a need for a high level of care of the newborn. In some countries it may be an expression of the degree of malaria endemicity.

It seems likely that genetic traits of certain populations tend to reduce the birth weight without correspondingly reducing the survival chances of the newborn. In such populations, the LBW standard may need to be defined differently.

It will be useful to analyse birth weight in relation to age and parity of the mother and, if possible, gestational age of the baby.

#### 1.13 Height and weight of schoolchildren

Percentage of children below and above desirable range of height and weight by age.

A national or international reference population is used for the calculation of these indicators.

Data are normally available from school health records but when a permanent health record is not maintained for each child, weight, height and age of children may be recorded in conjunction with a visit to provide immunization or other services or during a survey.

The percentage of low height for age correlates with parental stature, but also reflects the cumulative effects of undernutrition and infections since birth or even before birth. A high percentage therefore should be interpreted as an indication of bad environmental conditions and/or early malnutrition. The percentage of low weight for height, on the other hand, reflects exclusively current undernutrition or disease. The percentage of low weight for age reflects both the cumulative effects of episodes of undernutrition or chronic undernutrition since birth and current undernutrition. It is thus a composite indicator and more difficult to interpret than the other two.

#### 1.14 Physical maturity and intellectual development

Measures of physical maturity and intellectual development in schoolchildren may provide a relevant positive indicator of health state. The use of such indicators is to be encouraged in countries, for analysis of medium-term trends. No internationally comparable indicator is proposed at this stage.

#### F. Demographic background variables

##### Fertility

#### 1.15 Crude birth rate

This indicator refers to the number of births per year per 1000 population.

#### 1.16 Net reproduction rate

This indicator refers to the number of (liveborn) daughters that a cohort of newborn girls will bear during their lifetime.

##### Age structure

#### 1.17 Proportion of age groups

It is important to determine the proportion of age groups 0-14, 15-64, 65 years and over in the population, thus allowing the computation of various dependency ratios.

## 2. FACTORS AFFECTING HEALTH

### 2.1 Behavioural factors

#### 2.1.1 Dietary practice

- Percentage of people whose calorie intake is close to the norm for their age, sex and level of activity.
- Percentage of people having a balanced nutritional intake.

These indicators, related to one of the essential requirements for maintenance of good health, can be derived from household surveys. "Normal" range of values have been described. Countries

should indicate norms utilized. The main use of indicators in this field should be for comparison between population groups, and analysis of trends. Special attention should be given to young children and the elderly, in order to identify causes of major discrepancies.

As a crude indicator, the average calorie (or joule) intake per capita could be given.

#### 2.1.2 Breastfeeding

- Percentage of infants fully breastfed at five months of age. This indicator may be measured through surveys (nutritional, fertility, etc.) and public health nurse records. Disaggregation is recommended by age, parity and socioeconomic status of the mother.

#### 2.1.3 Alcohol consumption

Alcohol consumption per capita may be estimated through surveys and analysis of excise data. The total consumption estimated by survey methods falls short of other objective measures (sales information), but provides the only means to enable comparison of levels of consumption in different groups of population (with disaggregation by age, sex, occupation and other social variables), and to estimate trends in drinking habits in subgroups of the population.

#### 2.1.4 Tobacco consumption

- Levels of consumption to identify percent of nonsmokers and of high consumers.
- Consumption of tobacco per capita.

These indicators may be derived (a) from surveys and (b) from analysis of sales and excise duty.

Consumption of tobacco should also be analysed according to level and type (cigarette, pipe, etc.) of individual consumption, and should be disaggregated by age, sex and social class.

#### 2.1.5 Medical drug consumption

There is considerable concern about overutilization of medical drugs generally and of specific categories such as tranquilizers. This area requires examination and development of appropriate measures. Information on individual consumption may be collected in a comprehensive way when a special surveillance system is established for some specific categories. Surveys could be made periodically through medical insurance and by interviews.

#### 2.1.6 Physical activity (see also 2.1.8)

##### 2.1.6.1 Proportion engaging in recreational physical activity

This is a positive indicator needing to be refined at country level. Data can be collected in interview surveys. Age, sex, socioeconomic status and type of activity are interesting variables for disaggregation.

##### 2.1.6.2 Levels of (habitual daily physical) activity

This indicator is to be developed in relation to the previous one. It should measure the expenditure of effort (i.e. type of activity and time spent). Methods have to be refined to collect the information in interview surveys; existing norms should be compiled and analysed.

#### 2.1.7 Birth planning behaviour

##### 2.1.7.1 Contraceptive profile

- Current use of contraceptive methods by women at risk. This is a precise indicator to be defined at country level. Disaggregation is recommended according to age, marital state, parity, education or socioeconomic status. Collection is by survey.

##### 2.1.7.2 Effective contraception

- Percentage of women at risk using effective means. This indicator should be analysed in relation to the previous indicator.

2.1.7.3 Unexpected and undesired pregnancies

- Proportion of pregnancies which came earlier than planned and those which were not wanted. Data for this indicator should be collected through fertility surveys.

2.1.7.4 Possible proxy indicators

- Induced abortion per 1000 live births.
- Illegitimate births per 1000 live births.
- Premarital conceptions per 1000 live births.
- Proportion of women with five pregnancies or more.
- Pregnancies before age 15 per 1000 girls aged 10-14.
- Pregnancies from 15 to 19 years of age per 1000 female population in the age group.

2.1.8 Time budget (see also 2.1.6)

Under this item two indicators are considered.

2.1.8.1 Free time

- Average number of hours of free time per day (time left after deducting necessary time for work, shopping, sleep, meals, etc.).

2.1.8.2 Free-time activities

- Percentage of population engaging regularly in selected categories of free time actively, e.g. sports and other physical exercises, cultural, educational, etc.

2.2 Social and economic factors

2.2.1 Educational level

- Average age at which last full-time education was finished.
- Percentage distribution of level of qualifications attained.
- Proportion in regular education in different age groups (trends to be analysed by cohort).

The above indicators are preferred to the adult literacy rate, which is of debatable significance in the European Region. Data are available through statistics from the education sector and from surveys.

2.2.2 Employment and quality of working life

The following indicators were suggested by the OECD<sup>a</sup> on employment and quality of the working environment.

2.2.2.1 Unemployment rate

- Percentage of the labour force not in employment.
- Disaggregation by duration of unemployment and branch of economic activity.

2.2.2.2 Involuntary part-time work

Ratio of workers in part-time gainful employment who are seeking full-time gainful employment, to all workers in part-time gainful employment.

<sup>a</sup> Organisation for Economic Co-operation and Development. The 1980 OECD list of social indicators. 1981 (in print).

#### 2.2.2.3 Discouraged workers

- Ratio of persons who are available for work but not seeking it because they consider no work is available to them, to the number of workers in the labour force and discouraged workers.

#### 2.2.2.4 Average working hours

- Mean number of hours actually worked per week per person in employment.

#### 2.2.2.5 Travel time to work

- Percentage of persons in employment taking a stated amount of time for one trip to (or from) work.

#### 2.2.2.6 Paid annual leave

- Main number of paid holidays and paid vacation days of leave entitlement per year per person in employment.

#### 2.2.2.7 Atypical work schedule

- Percentage of persons in employment with atypical work schedule (shift-work, night-work, work outside normal working hours)

#### 2.2.2.8 Average earnings

- Average earnings received by wage and salary earners.

#### 2.2.2.9 Work environment nuisances

- Percentage of persons in employment reporting exposure to nuisances in their work environment (for instance draught, high or low temperature, moisture, water, dusts of different kinds, polluted air, vibration, noise, uncomfortable working position, heavy lifting).

Although all nine indicators could be used as supporting indicators and the underlying data be used in relation with health indicators, for instance disaggregation of suicide rate by gainfully employed persons with or without atypical work schedules (2.2.2.7), it is proposed to concentrate only on those indicators more directly related to health, e.g. unemployment rate (2.2.2.1) and work environment nuisances (2.2.2.9) (see also 2.3).

#### 2.2.3 Material deprivation

- Percentage of individuals with disposable incomes below a given fraction of the median disposable income.

Disaggregation should be by size of household, age, sex, socioeconomic groups.

#### 2.2.4 Urbanization

- Percentage of population living in urban areas.

Research on meaningful and comparable indicators in this field should be encouraged.

Health-impairing city quarters can only be identified by a multivariable approach. Useful indicators in this respect would be: median income, percentage unemployment, percentage adult population (aged 15 years and more) without secondary or higher education, living space in m<sup>2</sup> per inhabitant, percentage of houses without commodities such as bath/shower, central heating, private toilet, access to green areas (park, garden, etc.)

#### 2.3 Physical environmental factors

##### 2.3.1 Safe water

- Percentage of population with safe water in the home<sup>a</sup>, and adequate sanitary facilities in the home or immediate vicinity.

<sup>a</sup> Or within 15 minutes walking distance according to the target for global indicator No. 7 (see Annex I).

#### 2.3.2 Waste disposal

Standards exist in countries of the Region. Specific indicators could be developed on the basis of:

- population connected to a public waste disposal system;
- coverage and frequency of solid waste collection in rural areas.

#### 2.3.3 Chemical pollution

Indicators to be selected by individual countries according to their priority problems and programmes in the fields of air, water, soil, food, working environment.

#### 2.3.4 Exposure to ionizing radiation

Indicators are to be developed in relation to the standards set up for radiation exposure in industry, and through medical procedures.

#### 2.3.5 Noise

The group did not identify any operational measure to serve as a base for an indicator. Legislative measures might be used as well as measurement of subjective discomfort.

#### 2.4 Housing (see also 2.2.3)

##### 2.4.1 (Indoor) living space

- Percentage of population living in dwellings occupied by n persons per room.

##### 2.4.2 Basic amenities

- Percentage of population living in households not having exclusive use of basic amenities inside the dwelling: flush toilet, piped water, fixed bath or shower, kitchen or kitchenette.

#### 3. HEALTH CARE PROVISION

##### 3.1 Availability of health services

- Ratio between the population and the health facilities and personnel assigned to it (e.g. population per health centre, doctor, traditional birth attendant, hospital bed) including provision of services for prevention and control of environmental risks, whether or not belonging to the health sector.

These indicators, classically used for planning purposes, need to be analysed in relation to indicators of accessibility and utilization, and indicators of primary health care.

Information is available in all countries through routine health statistics and reports.

Indicators should specify type of service and type of personnel.

Disaggregation is recommended according to geographical/urban/rural areas.

Indicators would be available in most countries in the form of rates per 10 000 population or population per unit of:

- physicians
- qualified nurses
- auxiliary nursing personnel
- midwives
- dentists

- pharmacists
- hospital beds (total and per category of establishment and specialty).

### 3.2 Availability of primary health care (PHC)

Indicators should be developed by each country on basis of its strategy for PHC and targets set.

The minimum proposed indicator is the population covered by:

- provision of health education;
- safe water in the home or within 15 minutes' walking distance, and adequate sanitary facilities in the home or immediate vicinity;<sup>a</sup>
- maternal and child health care, including family planning;
- immunization against diphtheria, tetanus, whooping-cough, measles, poliomyelitis and tuberculosis;
- local health care, including availability of at least 20 essential drugs, within one hour's walk or travel;
- trained personnel for attending pregnancy and childbirth, and providing health care for children up to at least one year of age.

Another indicator may be the percentages of doctors, dentists, nurses and other health workers working outside health institutions.

When country targets are defined, it may be necessary to develop indicators for self-care, lay care, community care, alternative care, overuse of drugs, etc.

### 3.3 Accessibility of services

- Proportion of a given population that can be expected to use a specified facility, service, etc., given certain barriers to access, which may be physical (distance, travel time), economic (travel cost, fee charged), or social and cultural (class or language barriers).

3.3.1 To measure physical accessibility, the following indicators are suggested:

- (1) Average delay between occurrence of an emergency (accident, heart attack) and appropriate care (requires development).
- (2) Percentage of population with reasonable access to a source of primary health care (see 3.2).
- (3) Average waiting time for admission for elective surgery or mental care, and to long-term institutions.

3.3.2 The indicator suggested to measure economic accessibility is the percentage of population covered by medical insurance, a social security scheme, or free medical service.

These indicators should be analysed by geographical/urban rural area, special target groups.

3.3.3 Indicators have still to be developed for social and cultural accessibility (acceptability). The main source is likely to be interviews or surveys enquiring about attitudes.

<sup>a</sup> See also indicator on safe water.

### 3.4 Financial resources

3.4.1 The following two indicators of health expenditure are suggested as common indicators at regional level:

- (1) Health expenditure as a proportion of gross national product.
- (2) Health expenditure per head of population including, when possible, percentage of health expenditures financed by:
  - government (central and local)
  - social security (compulsory insurance)
  - private insurance
  - private direct payment
  - other.

3.4.2 As a proxy measurement of the percentage of expenditure devoted to PHC, it is suggested to use the indicator of percentage of cost of health services falling outside inpatient institutions.

3.4.3 In addition, countries may use other indicators such as cost per unit of service by type of service (and selected disease categories).

Information is available through health accounts, special surveys and health insurances.

These indicators can provide for assessment of allocation of resources; assessment of equity; control of cost containment.

Indicators may be broken down by source of funds, level of care, and type of expenditure.

Disaggregation variables recommended are geographical, social and beneficiaries, or health programme.

### 3.5 Quality of care

3.5.1 Ideally, indicators of coverage should be supplemented by indicators of quality of care, although utilization is also a reflection of the quality of care and acceptability. Quality control, however, is complex and requires a profile of a number of indicators. Managerial/supervisory functions have an important role in the maintenance of quality. A number of indicators can be developed to be incorporated into a built-in monitoring system using a checklist and a simple scoring system. Further details could be developed for this later, if necessary.

3.5.2 Consumer satisfaction could also be used as a measurement of quality of care, including "humanization".

3.5.3 Incidence of nosocomial infection may be used as an indicator of quality of care in institutions.

### 3.6 Utilization of care

- Proportion of people who actually receive a service in a given period, usually a year, in relation to total population or population in need of the service if identifiable; for example:

3.6.1 Proportion of children at risk who are immunized.

3.6.2 Proportion of pregnant women who receive antenatal care or have their deliveries supervised by a trained attendant.<sup>a</sup>

<sup>a</sup> This may be supplemented by information on use of facilities such as bed occupancy, length of stay, number of acts, etc. which measure mainly the efficiency of health services.

In estimating actual utilization, countries should specify the minimum level or standard of care acceptable. In some cases, although facilities exist, lack of drugs or poor quality of care results in people not using services. Other reasons for nonutilization are that facilities may be open at hours of the day when people will not come because they are occupied in the fields or the factories. Also people may be attracted by the prestige of a more distant hospital, and may use it for care that could have been provided by local primary health care facilities. It should be clearly indicated whether patients, cases or spells of disease are referred to.

These indicators are used mainly for planning and assessment of underutilization and overutilization. In the majority of countries, the information is partially available only, mainly from institutions. The number of people who actually use the service can be obtained relatively easily with properly designed recording systems, especially if voluntary health workers are also integrated into the system. The measures of utilization reflect both geographical and other kinds of accessibility, such as economic and cultural. Information about those who use the services, as compared with the total population, can by inference, provide some information about those who do not use them; but information on people who do not use services when it would be appropriate for them to do so, and reasons for nonuse, can really only be obtained from community-based surveys.

Indicators should be broken down by type of care and type of institution. Disaggregation is recommended by target groups and geographical areas.

#### 4. POLICY MEASURES<sup>a</sup> FOR PROMOTION OF HEALTH

##### 4.1 Endorsement of health for all as policy at the highest official level

This endorsement could be in the form of a statement by the head of state or government, an amendment to the Constitution or legislative measures.

##### 4.2 Existence of mechanisms for involving people in the implementation of strategies

Such measures could include the formation or strengthening of national, district or local health councils.

##### 4.3 Change in distribution of resources

This would involve analysis of trends in indicators of financial resources (see 3.4).

<sup>a</sup> Indicators in this field are proposed in line with those suggested for the global strategy, see Annex I.

Annex III

LIST OF PARTICIPANTS

TEMPORARY ADVISERS

- Mrs V. Carstairs  
Assistant Director, Information Services Division, Scottish Health Service, Edinburgh, United Kingdom
- Professor R.L. Cliquet  
Population and Family Study Centre, Ministry of Public Health and Family Welfare, Brussels, Belgium

WORLD HEALTH ORGANIZATION

Regional Office for Europe

- Dr J.P. Jardel  
Regional Officer for Information Systems Programme
- Dr A.A. Weber  
Director, Health Information

Headquarters

- Mrs I. Brüggemann  
Development of Health Programme Evaluation