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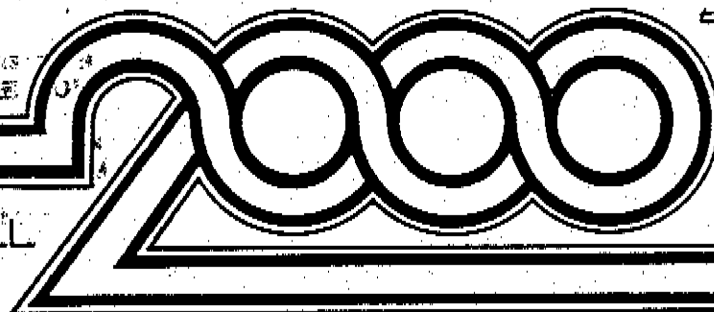
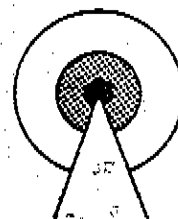


HEALTH FOR ALL

Formulation and achievement of national goals for oral health



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FORMULATION AND ACHIEVEMENT OF NATIONAL GOALS FOR ORAL HEALTH

Report on two WHO Workshops

Turku
7-10 October 1986

Vienna
8-11 November 1988

1991

EUR/HFA target 4 and 36

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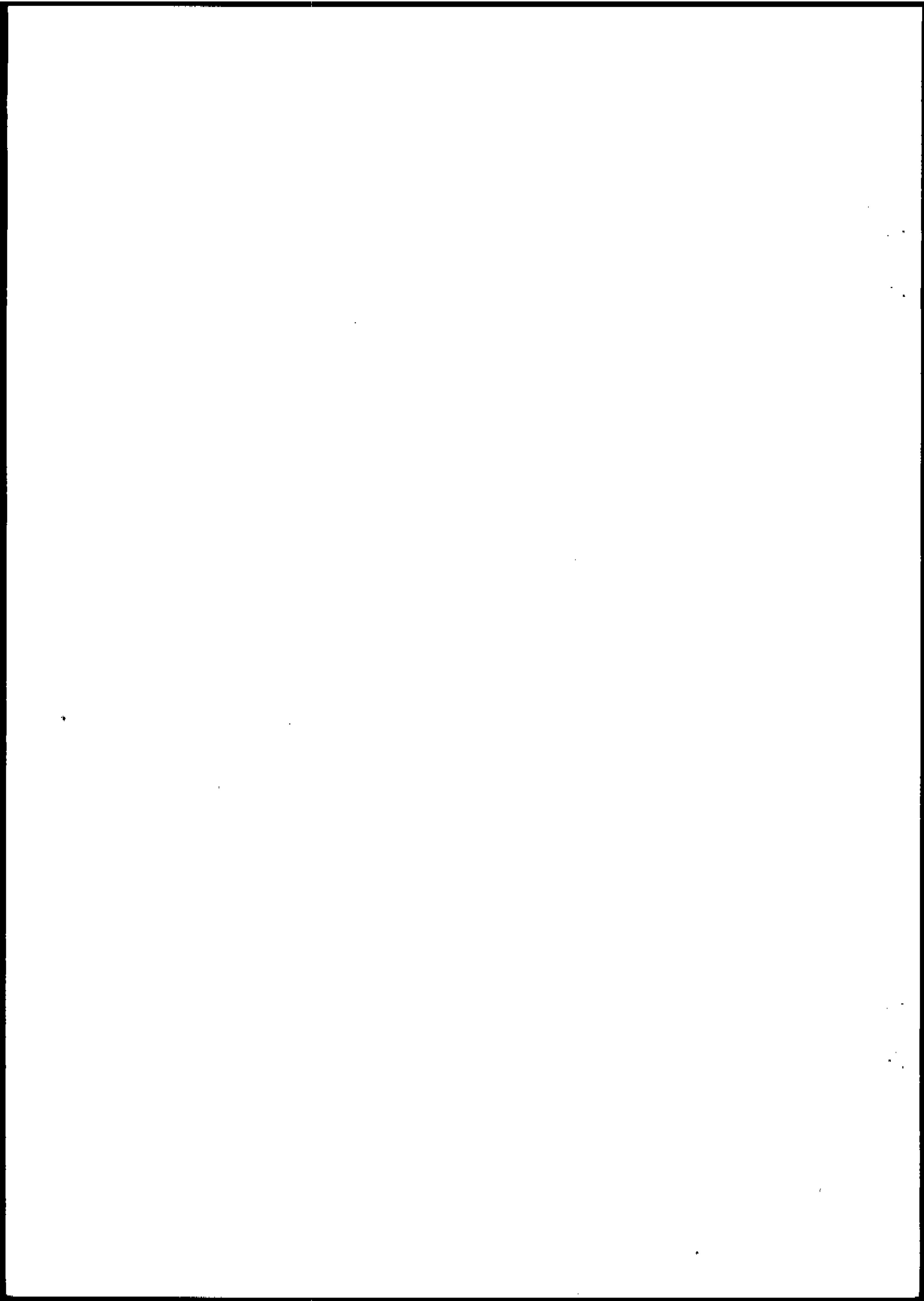
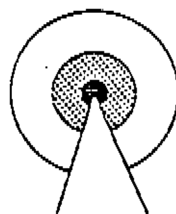


Emblem for Oral health



The emblem is based on the concept of a tooth with:

- the two "legs" representing the roots of the tooth;
- the outer concentric white ring representing the enamel;
- the dotted concentric ring representing the dentine; and
- the inner black circle representing the dental pulp (blood and nerve tissue).

It also represents possible intervention to prevent or care for oral disease.

(1) Initial caries can remineralize (heal) through preventive measures (primary prevention: outer white ring).

(2) Caries destruction which has reached the dentine can be treated only by replacement of destroyed tissue with a filling (secondary intervention: dotted concentric ring).

(3) Caries destruction which has reached the pulp results in the "death" of the tooth (tertiary care: black circle).

The area of each of the white, dotted and black areas represents the goal for future distribution between primary, secondary and tertiary care (prevention) in oral health.

The angle between the roots ("legs") is 40° (= 360° - 9). The proportion of national health budgets spent on oral health can be up to 11% (100% - 9).

The angle between the roots ("legs") also represents oral health as an entry to healthy lifestyles (or self care in oral health), or as a mouth through which healthy lifestyles can be controlled (drugs, alcohol, sanitation, nutrition, smoking, polluted air and water, etc.).

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Preface

A Workshop on Formulation of National Goals for Oral Health was held in Turku, Finland, from 7 to 10 October 1986. The workshop was attended by 18 participants and 5 observers representing 17 different countries in Europe. The objective of the workshop was to product guidelines on how to formulate National Goals for Oral Health by the Year 2000. The workshop was made possible through the generous contribution and hospitality of the Finnish Government and was organized by the National Board of Health, Finland, and the World Health Organization, Regional Office for Europe, Copenhagen.

As a follow up to the above-mentioned workshop, the Austrian Ministry of Health and Social Welfare and the Fund for "Healthy Austria" generously offered to host a Workshop on Achievement of National Goals for Oral Health. This workshop was held in Vienna from 8 to 11 November 1988 and was attended by 20 participants and 6 observers from 18 different countries in Europe.

The content of this document is the outcome cf the discussions which took place during the above-mentioned workshops. The document has been drafted by Mr N.K. Colquhoun and Mr M. Downer, United Kingdom, Dr M. Kelman, Israel, Professor K.G. Konig, Netherlands, Dr S. O'Hickey, Ireland, and Dr E. Schwarz, Denmark, who served as rapporteurs during one or both of the workshops.

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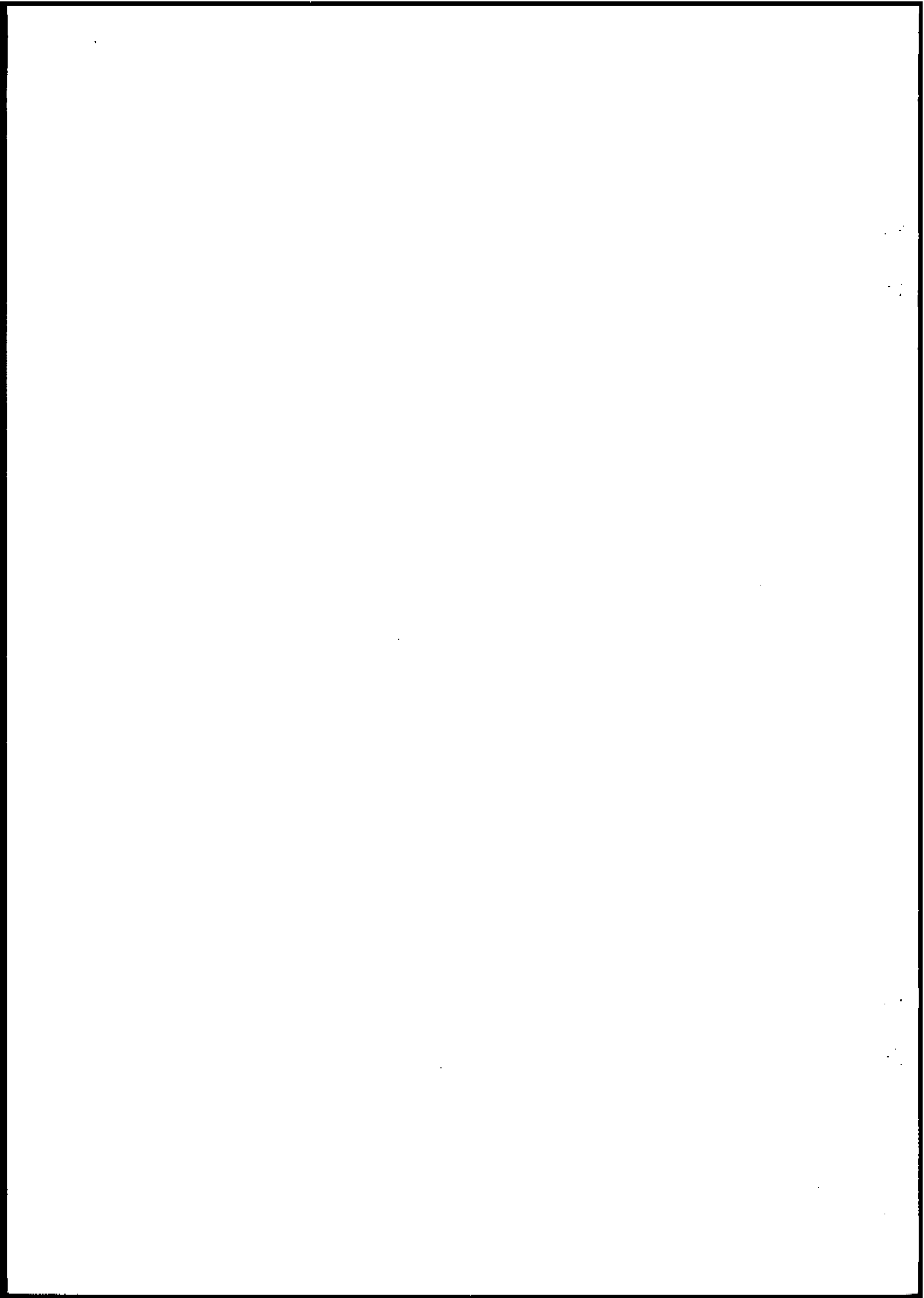

1. Introduction

Following the unanimous adoption of the Alma-Ata Declaration (1) - in which the primary health care concept was reinforced - the World Health Organization in 1979 passed a resolution calling for the attainment of Health for All by Year 2000. In this context health was defined as an acceptable level of health that will permit people "to lead a socially and economically productive life". An acceptable level of oral health will and must be interpreted differently by each country in the light of its social and economic characteristics, health status and morbidity patterns of its population, and state of development of its health system. On the basis of existing epidemiological data and projection of disease trends, the World Health Organization, in collaboration with the International Dental Federation (2), adopted six global goals for oral health by the year 2000. These goals are:

Goal 1 50 per cent of 5-6 year olds will be caries free.

Goal 2 The global average will be no more than 3 DMF teeth at 12 years of age.

Goal 3 85 per cent of the population should retain all their teeth at the age of 18 years.

Goal 4 A 50 per cent reduction in the present levels of edentulousness at the age of 35-44 years will be achieved.

Goal 5 A 25 per cent reduction in the present levels of edentulousness at the age of 65 years and over will be achieved

Goal 6 A data based system for monitoring changes in oral health will be established

With these global goals as a guide each country is urged to formulate its own national goals according to its individual situation and resources. However, the lack of reliable baseline data for several oral conditions makes it sometimes difficult to set measurable and attainable goals. Goal 6, therefore, should be seen not only as a goal for year 2000 but rather as an intermediary target which should be achieved as soon as possible.

In addition to the above-mentioned global goals the following goals for periodontal health were formulated for the countries in the European Community (EC) during a workshop held in Copenhagen in December 1982 (3):

Goal 1 At age 18, 90% will have acceptable gingival health to the extent that each person has at least three healthy sextants (CPI = 0)

Goal 2 At age 35-44, 75% will have acceptable gingival health to the extent that each person has at least three healthy sextants (CPI = 0)

Goal 3 At age 65 and over, no more than 10 should have one or more sextants with severe periodontal destruction (CPI - 4)

In the European Region of WHO the goals for achieving health for all are contained in the target document in which 38 targets are formulated and ways of achieving them are described. Unfortunately oral health has not been considered by the European Member States of enough importance to have its own targets. Oral health is contained in target 4 which says that: By the year 2000 the average number of years that people live free from major disease and disability should be increased by at least 10 .

2. Collection of data and information

The data necessary to formulate national goals for oral health extend beyond the normal range of data which can be collected through oral epidemiological surveys. Additional accurate and objective information on personnel, financial resources and political interest must also be considered. An indication of the data and information which should be available and the suggested methods of its collection is given below in the following table (Table 1).

Table 1

Topics on which information should be available	Specific contents	Sources of information
2.1 Oral health status		
age bands 5-6	percentage caries free	by epidemiology
12	average DMFT	by epidemiology
18	No. of missing teeth (MT)	by epidemiology
35-44	percentage edentulous	by interview survey
65+	percentage edentulous	by interview survey
risk groups,		by epidemiology
2.2 Population development		
for the same age bands as listed above	projections regarding whole country regarding regions and other stratifications	by negotiations with National Statistical Bureau outlining requirements for proper analysis
2.3 Political expressions	legal or publicly expressed intentions or formulated policies on dental health nutrition, sugar (taxes) health care system health education	supplied through Ministry of Health, demographic surveys, professional organizations
2.4 Oral health services	on supply: dental manpower: training number, type age structure, mortality, distribution competence	dental register or professional organization or survey or dental college files
	on service system: distribution: private/public urban/rural targeting: population groups preventive/curative costs: direct/indirect service range public/private	relevant registers or surveys
	on demand: socio-economic indicators attitudes utilization (drop-out) trends	surveys

2.1 Oral health status

The availability and accessibility of data on oral health status will be different within the Member States of the European Region. Even those with a tradition in collecting health data may not yet be familiar with more recent developments in oral epidemiology. Therefore it seems feasible to collect oral health information by two approaches, resulting in a standard data set and an extended data set, respectively.

The standard data set is a limited number of figures consisting of one key parameter characterizing each of the internationally accepted age groups or bands 5 (-6), 12, 18, 35-44, and 65-74 years (refer to Table 1). Calibration of examiners for collecting these data is relatively easy and will require little or no expertise in oral epidemiology. The samples examined will need to be carefully selected to ensure that they are truly representative. The standard data set can be collected and made known to the WHO Regional Office in regular intervals by all Member States as an overall health indicator.

An extended data set should be used by Member States for gathering additional information regarding more specific aspects of oral health in populations or population subgroups. Examples are periodontal health to be assessed by CPITN, or distribution of caries for assessment of treatment needs in child populations at various ages, and identification of special risk groups. The contents of national data sets may vary according to the specific situation, but the procedures used should be chosen according to the standards and methods described in the WHO publication: Oral Health Surveys, Basic Methods (4). It should be considered whether the data set should also include: (1) coverage of the population by service, and (2) economic efficiency (i.e. cost per case treated or cost per head of population).

2.2 Population development

Realistic and comprehensive planning can only be achieved if there is an accurate profile of the population. The present numbers in the accepted age bands are required and the projections for 20 and possibly 40 years.

This information is essential on a country wide basis but additional regional information could be advantageous. Regional information is particularly relevant when there are varying methods of providing dental care. Changing local populations combined with either an increase or fall in the local economy may have a rapid and profound effect on behavioural patterns, ental awareness and expectations. Population statistics are normally available from a National Statistical Office or Bureau and registration may be processed and presented in the form which the dental services require.

2.3 Political expressions

Important variables determining oral health services and demand for these services in a specific Member State are the political expressions in the society.

Individual lifestyles, nutrition, (oral) health, education, political constrictions and so on interact with socioeconomic status, number of children, age structure, choice of where to live and demand for (oral) health services.

The result of this interaction is the subdivision and stratification of the population. The economic status of a Member State and of socioeconomic subgroups within it determine attitudes towards (oral) health, the demand for and choice of service provided, the attitude towards health education and acceptance of preventive measures. Governments' legislation on health care may be based initially on individual attitudes and public demand but the decisions taken and strategies adopted can be influenced by macroeconomic factors, popular initiatives and traditions within the administration.

The prosperity and future development within a Member State will have a major influence on the provision of health services while the prosperity of the individual will have an equal influence on self care, expectations, and demand for different types of (oral) health services.

The impact of these sociopolitical factions should be recognized. Their influence on the present situation, and how they may affect (oral) health care in the future should be analysed and the results taken into account during the process of formulating national goals.

2.4 Oral health services

Planning and adjusting human resources to respond to the need for promoting and maintaining oral health should be a continuing process. Human resources relate not only to the dental profession but to all categories of auxiliary personnel who make up the dental team. In this respect it is necessary to review from time to time the "team mix" which can most effectively cater for changing needs of the population.

Particular attention has to be focused on the most highly trained members of the team. The age pattern of the profession should be available and matched to projected dates of retirement and mortality levels. The increasing proportion of female dentists, and the variation in working years which this presents is a complicating factor which has to be considered.

In most cases the information necessary is available from National Dental Registers, professional organizations, colleges and Dental Schools.

While there may be economic recessions from time to time, the overall economic situation of the community tends to improve. Projections should therefore take into account the overriding tendency for people to become more aware of their health and more desirous of a high standard of dental care. Coupled with this, advancing technology may improve the quality of care but in so doing, costs go up. It has been said that the cos t of treating any particular dental problem doubles every three or four years! - Compare the cost, in time and money, of treating an abscessed second upper molar tooth, thirty years ago - extraction, and today, - root treatment, post and bonded porcelain crown.

3. Formulation of national goals

The procedures for introducing and formulating national goals may vary according to the different methods of administration and traditions within Member States.

It is essential that goals should be formulated and presented within a politically approved framework. Established national decision-making processes should be adapted, with accurate information clearly and concisely presented to illustrate the main problems.

On the basis of the data, establish - what is the situation today? If we do nothing - what will the situation be at target dates? If we utilize available technology what can be achieved by target dates? If everyone cooperates and we are very lucky what is the best possible situation by target dates?

In order to further the process a national working group should be set up consisting of dental and lay administrators, representatives of the dental profession, representatives from the scientific community and representatives from related health care professions. According to local practices other members of the dental team might be included and it would be advantageous to have representatives from the educational system, i.e. faculties of dentistry, dental colleges and training institutions for -auxiliary personnel.

One of the first tasks for the working party would be to reach a consensus on what the problems are, how they are perceived by different groups, and the priorities with which they should be met. Although it may take some time it is essential to reach a consensus early in the discussions, otherwise future progress may be hampered and negotiations break down at a later stage. If consensus is not reached at an early stage, the process may be hampered later due to different interpretations of the present situation, and at that stage consensus would have to be reached anyway.

The information collected will include projections on oral health and demography beyond the year 2000. Although national goals at present are targeted for year 2000 it should be borne in mind that most nations have population projections which go as far as year 2025-2040 and that changes in the composition of the population may have relevance for the goals as well as for the priorities. Since dentists and other dental personnel educated in the 80's are likely to be in practice in the 2020's, projections until year 2000 are not sufficient. As the year 2000 comes closer, it would seem justified and more realistic to formulate national goals for the year 2020 or 2025 already now.

The main task is to assess the most realistic, practical and cost effective goals for their country to aim for and which have a reasonable chance of success. Each Member State should decide what is possible and aim for a little bit more; a spot which will be somewhere between the most realistic and the ideal extremes.

The concrete formulation of the goals should be in measurable terms according to the global oral health goals. Individual countries may find the global goals either under or over ambitious. In this connection it is important to consider the global goals as a guideline which may be amended according to the needs of the countries.

Once the working group has formulated goals it would be a natural development to seek their official recognition, and it might be relevant to include them in the country's overall health programme. The goals should also be made known to all the relevant professional groups so that they become generally accepted.

In individual countries it should be considered to what extent enabling legislation is needed to enhance the achievement of the goals formulated. This, however, will be dependent on the tradition etc. in the individual country.

The global goals for oral health by the year 2000 as formulated jointly by the World Health Organization and the International Dental Federation in 1982 may require some adaptation to reflect the position of particular countries. In many northern countries of western Europe the goals for 5 and 12 year olds have already been achieved. This section considers first some possible modifications to the goals.

In Goal 1 where possibly the age group needs to be more precisely defined as "5 year olds", i.e. children who have reached their fifth birthday but have not reached their sixth birthday. Where for any reason it is not possible to obtain adequate samples of 5 year old children then samples of similarly defined 6 year olds may be utilized instead, but must clearly be identified as such. Five year old children form the age group of choice as this is probably the last opportunity to see and assess the deciduous dentition as a whole. Any concomitant assessment of permanent teeth at 5 years of age should be reported separately (similarly, if the 6 year old age group is chosen).

As well as reporting the status of the 5 year olds (or 6 year olds) as prevalence data, i.e. proportions of the population affected or caries-free, it is desirable to report the d, m, f,(t) levels separately, and as total dmf(t), wherever circumstances permit. Criteria will need to be set to ensure that primary teeth which are probably exfoliated are not included in the dmft score.

The original Goal 2, relating to care is status at 12 years of age, as expressed by average DMFT should also include the averages of the component parts, i.e. DT, MT, and FT.

The individual data needed for monitoring and evaluation, i.e. goal 1: caries-free, goal 2: DMFT per person, goal 3: MT per person, goal 4: edentulous, goal 5: edentulous, are the minima and will probably need to be supplemented, especially at national, regional and local level.

Data collection on anomalies of occlusion and/or dentofacial anomalies is problematic because there is no generally accepted method yet devised. For this reason no global goal is recommended for these conditions. At national level, objective and clearly defined criteria a are necessary wherever orthodontic services are provided in the public sector. The criteria should be primarily based on functional aspects of orthodontic need, though account will also need to be taken of gross disturbances in the appearance of the dentition.

Goals for 2025

European Goals for Oral Health for the Year 2025 should be formulated. The data to be collected (original goal 6) should be available at two levels, i.e. first at a relatively basic, simple level and second, at a relatively sophisticated level. The first level data are necessary while the second level are desirable though not essential.

A suggested list of goals for 2025, in the same sequence as the goals for 2000, is:

Goal 1 80% of 5 year olds will be caries-free.

Goal 2 Average DMFT at 12 years of age shall be 1.5 or less.

Goal 3 None of the 18 year olds shall have any tooth missing due to caries.

Goal 4: More than 99% of 35-44 year olds shall be dentate. Each dentate person shall have at lest 20 natura -teeth, of which not less than 8 shall be in one jaw.

Goal 5 The data gathering system/s should be based on valid representative statistical samples, whether local, regional or national. The system/s should be compatible with the WHO system/s and national data should be freely available throughout the European Region.

The current state of the public's knowledge, attitude and behaviour is a barrier to achieving the national goals for oral health. To a considerable extent this is the result of misinformation from many sources, not least the dental profession.

There is evidence to believe that many people still have a confused appreciation of such basic topics as the role of diet in causing caries, the importance of frequency of sugar ingestion, role of sugar substitutes, the relationship of toothbrushing to periodontal health (not, as commonly believed, caries control), and the role of toothbrushing as a vehicle for fluoride.

General dental practitioners have a vital role to play as disseminators of correct information on a continuing basis to their patients.

The oral health care professions, both public and private, should be given opportunities to reeducate first themselves and then the members of related health care professions, e.g. physicians and nurses. School teachers as educators must also be involved as they perform the fundamental role of forming attitudes in the young.

Advice from and participation by professional media experts is essential to successful dissemination of the oral health messages. These should be integrated with general health promotio n on a continuing basis.

Target groups for integrated health promotion are pregnant women, mothers of young children, adolescents. Adult groups also need to be reached in order to dissipate misinformation, for example, belief in the inevitability of tooth loss with age, "physiological and progressive edentulousness".

More emphasis is required on promoting healthy lifestyles. A positive approach to the use of sugar substitutes, for example, and a scientifically based approach to diet generally, including sugar consumption, is needed to counteract the psychology of "living to eat" and the "goodness" and "naturalness" of refined sugars.

For the past few years there has been a small but growing tendency for young adults, including young parents, to regard oral health as the norm to the extend that there is a danger of complacency. A positive approach to general health care, including an oral health element, is essential to maintaining good levels of oral health.

The influence of the organized dental profession is pivotal to achievement of goals. An example of this is its influence on the pharmaceutical industry to produce antibiotics in sugar-free syrups for oral administration. This influence depends upon the involvement of the profession within society to act in common with the other health professions on policy makers.

Dental education has a vital role to play in goal achievement. Schools of dentistry should be encouraged to establish departments of community oral health where these do not already exist with teaching and research commitments in the area of public health. The preventive philosophy should permeate the entire curriculum and staff. New dentists should be produced with the attitudes and skills appropriate to the new and changed needs of society. Funding from official and commercial sources to promote oral health services research must be actively pursued.

The state is involved at different levels but especially at the funding level. The proportion of the general health budget which is devoted to oral health is an indication of its priority. The state has a duty to promote health and to prevent disease, from both humanitarian and economic considerations and the population's levels of oral health fall within this remit.

For administrators there is always a competition between the curative (reparative) and preventive budgetary philosophies in the area of oral health care services. This makes it imperative to have a strong and informed dental influence at different levels of public administration, local, regional and national alike. At all three levels there must also be a similar and strong consensus, with no division on the priority accorded to health promotion and disease prevention.

In the competition for health funding, oral health has a distinct advantage in that it can exhibit clear results relatively quickly. In this way it can demonstrate its cost-effectiveness. However, oral health must compete with other high profile health needs, such as campaigns to reduce high blood pressure and prevent heart disease. Policy-makers will have their own views of priorities and the dental profession will need to make its voice heard. The existing dental work force which has been in practice for some years requires progressive retraining. This could be done through continuing education schemes, for example by distance learning and strategies such as credit relicensing. The health promotional approach and use of preventive measures must be stimulated through such mechanisms as the method of remuneration. The introduction of capitation as an alternative to fee for

item of service should be considered. Such a measure is designed to encourage a strategy of minimum intervention and discourage outdated restorative concepts.

Monitoring of progress is an essential element in achieving goals and modern technology in the field of informatics will be of considerable help in this regard. Control, as exercised through monitoring, must be implemented at the three geographic levels: local, regional and national.

As previously stated, there are goals at different levels of administration. These, as well as being constantly monitored must be reviewed at regular intervals.

The approach most likely to lead to achievement of goals is a mixture of strategies, which are appropriate to prevailing conditions. The chosen strategies must not compete with each other but must, rather, be complementary and all directed ultimately towards achievement of the goals. Examples of the proposed complementary strategies are mixtures of the primary health care approach plus public health education and health promotion.

Other strategies include ensuring that resources are available to those aged 18 years and under because the first three goals relate to this segment of the population. The use of alternative methods of paying dentists must be considered to encourage the use of preventive methods in practice. The development and introduction of a preventive oral health auxiliary worker could be an important innovation in some countries. Oral health care workers at all levels must initiate and participate actively in outreach programmes such as the healthy city, town or village approach. This involves cooperation with other health care workers, for example physicians and nurses.

For the individual in the community, the primary health care approach must encourage healthy lifestyles, including regular habits of oral hygiene plus, in the case of those susceptible, the regular professional removal of calculus. The goals for periodontal health and retention of natural teeth are very much dependant upon individual self-care.

In order to encourage self-care, financial inducements should be considered, such as reduced patient contributions to the cost of care as rewards for achieving stated levels of good self-care. Likewise, members of the oral health care team will respond positively to financial arrangements designed to promote the preventive approach. Monitoring, built into the payment system, should discourage overprescription and unnecessary treatment and thus avoid a major cause of iatrogenic oral disease.

The new preventive approach in dentistry requires a new type of dentist. To produce the new dentists, curricular changes are needed in the dental schools, and also closer integration of the schools with the community programmes in which undergraduate students become involved in community health care activities (kindergartens, old folks homes, institutions for the handicapped) is one example that should be encouraged.

Currently a number of countries are considering the problem of overproduction of dental students and dentists, but the quality of entrants as expressed through attitude and behaviour and not solely academic achievements is equally important. Re-education of practising dentists in the new style of

oral health care is vital to reaching the goals. A particular example of what is required is the desirability of encouraging continuity of care, that is to say, a continuing relationship between the dentist (and oral health care team) and the individual patient aimed at achieving the maximum level of oral health for the latter. As the community is made up of individuals, then all must ultimately benefit.

4. Selection of strategies

A strategy is a series of steps which has been formulated in order to achieve a stated objective. Alternative strategies should be prepared. In practice, factors which may influence the effectiveness of any strategic path are often subject to change. They may interfere with progress. If different possible paths to the objective are prepared then it will be easier to select the most appropriate strategy to be used at any stage in the process.

There may be factors in the environment which affect the success of a particular strategy. These should if possible be mobilized to facilitate success. They include, for example, political and public opinion, economic changes and international influences.

The goals are achieved by selecting the best of possible strategies that is the one which has the msot chance of success. There is no point in basing a strategy on the construction of 500 new clinics in a poor country, or in recommending fluoridation of drinking-water in a community served by a reticulated water system.

Oral surgeons will not run a fissure sealant programme; experts in implantology cannot handle health education programmes for children; teachers of dentistry will not cooperate in plans to increase the student-teacher ratio, shorten courses, or decrease the intake of undergraduates. The human resources must be tailored to the needs of the community as expressed by the "goals for oral health" - and not the reverse.

The overall strategic plan must include an analysis of all means, measures and parts of health-promoting programmes which are instrumental in reaching the final goals, in order to be sure of the acceptance of every single step along the strategic path envisaged. For example:

- if a certain way of fluoride administration is not acceptable, alternative ways should be explored;

- wherever possible, school health education programmes should be developed and introduced to improve health mindedness and acceptance of health-promoting measures in the whole target population on a long-term basis; however, one must be sure that school teachers accept the new task, and enabling legislation may be necessary.

4.1 A series of three major questions which European chief dental officers should address forms the basis of the next section of the report

4.1.1 What changes are needed in the existing national oral health care delivery systems in order to promote health rather than treat disease?

The profession, dental schools, health insurance providers and local and national government have traditionally been treatment-oriented. This is because treatment can be seen to have been carried out it is what the public wants (or is thought to be what the public wants), it usually relieves pain, improves aesthetics and is tangible.

The cost of treating dental and oral disease in the long term is very much higher than the cost of prevention. Health insurance providers should be asked a number of pertinent questions.

- What is the actual cost of dental care in specific age groups?

- What will be cost be in each age group when demand increases and eventually approaches need?

- How long before treatment needs to be repeated?

- How do you ensure quality?

- How much is it worth investing in prevention?

- Would you provide insurance cover against burglary without insisting on doors being closed and locked and alarm protected?

- Do you not encourage preventive precautions in other forms of insurance? Why not therefore in health?

Local and national government should be made aware of the real benefits accruing from a preventive commitment to health issues. Absenteeism from school and workplace will certainly be reduced. Appearance will probably be improved and there will be less pain and suffering in the community.

Most national and private insurance programmes do not encourage (some actively discourage) preventive procedures, usually claiming that you cannot check if the work has been done. However, fraudulent claims, and even worse over-treatment, have become a growing concern of health service providers in recent years. A change in attitude would improve health and save money.

The conventional methods of reporting national data should be augmented by health promotion indices. Examples might be:

- How many people are free of disease/dentally fit/have clean mouths?

- How many toothbrushes/fluoride toothpaste is/are sold per annum per head of population?

- How many children/classes/schools/communities are members of "healthy mouths" club?

- How many dentists/hygienists using fissure sealants/topical fluorides?
- How many annual hours of TV time are allocated (and used) for oral health promotion?

Chief dental officer appointments with administrative, advisory and managerial functions should be encouraged at local and national levels. If, as is often the case, no budget is available, then such appointments could be honorary to start with. Setting up an oral health department brings prestige to prevention and health promotion.

The use of alternative noncariogenic sweeteners should be encouraged. In this respect it should be emphasized that the recommendations of national dental associations carry great weight and infLuence the public more probably than government pronouncements.

Community involvement in health promotion is vital. The example of Austria is considered to be an excellent model for involving all sectors with responsibility for oral health.

The "care on demand" system should give way to an "outreach" approach. As in many other diseases, so in dentistry, early detection prevents serious disease and disfigurement and costs much less. Those not seeking care are very often those most in need.

Personnel training must take into account this change in orientation. The present stress on treatment rather than oral health care in dental schools should be replaced by a more positive emphasis on health promotion and preventive procedures in the curriculum. Wherever possible more dental hygienists should be trained and efforts made to overcome the traditional opposition of the profession to the training of hygienists in those countries where up to now they are not recognized. It should be pointed out that a very strict approach to drafting the law which would demand direct supervision of hygienists and forbidding of independent practice may help to gain the support of the profession to their introduction.

4.1.2 What are the means by which a chief dental officer can penetrate the mechanism of governmental policy formulation in order to reach decision-makers and and thereby make sure that oral health has appropriate inclusion in the national health policy?

The existence of a national health policy is not ways evident. Its content, if known, may exist only on paper and in "showcase" form, but without any mechanism, or indeed for real intention for implementation.

The position of a national chief dental officer (CDO) in the hierarchy, and his participation in the decision-making process is by no means clear, often not defined, and may even vary in the sam Ministry from time to time.

In some health systems, particularly where the national health policy is clearly stated and published by the government, the CDO will have access to the decision-makers, at least when policy comes up for periodic review and revision. In other cases the CDO may have no influence or even input to the system.

Where policy does not exist, has not been defined or expressed or is so vague as to be meaningless - "Health is good for you" and the like, the situation may be, potentially, very much better.

The CDO, or where such a post does not exist, the most concerned and involved individual or agency, whether university, public clinic, dental association or politician, should endeavour to initiate an interdisciplinary discussion group, at first on an informal basis attempting to involve all parties concerned, dental schools, local dental associations, insurance companies, welfare agencies, toothpaste and toothbrush manufacturers.

Such an informed group could develop a proposed oral health policy which could then be presented to government as the consensus view of all parties concerned. Such a policy might be adopted, at least in principle, by government and would be a step on the way to having an officially sanctioned oral health programme.

An oral health policy must be feasible both from the standpoint of human and budget resources. Over ambitious and unrealistic demands will almost certainly not be accepted, or even worse, accepted unreservedly without any resources being made available for eventual implementation.

Citing progress in oral health policy making in other communities or countries may often influence decision-makers to implement their own health promotional and primary care dental programme.

Policy cannot be formulated without basic data and clearly stated and time-framed goals. There must be constant monitoring, periodic review and adequate reporting government and public.

It may well be that in some cases the complaint of a chief dental officer that he has no part in the decision-making process, is in truth his rationalization of the fact that he has not got a realistic and feasible policy, programme, or plan.

4.1.3 What would be the approaches or strategies which would most likely lead to an achievement of national goals for oral health?

It should be reiterated that the most effective, safe, feasible and cheap way of reducing the incidence of dental caries is fluoridation of community drinking-water. Fluoridation will be most cost-effective in large urban areas served by a limited number of water treatment plants where the caries level is high. A country which has an ongoing national fluoridation programme is likely to continue and fluoridate in an areas with a low caries incidence. A country which has not as yet embarked on fluoridation is unlikely to start where DMFT at 12 years is 2.0. Where water fluoridation administration should be instituted, bearing in mind that compliance remains the major drawback. A planned fluoride programme is the most likely strategy to succeed in the achievement of HFA.

Dental health promotion and education programmes which are designed for and directed to mother and child centres and kindergarten and primary school children with the aim of establishing positive health - promoting behaviour are a potentially important strategy for HFA.

Human resources planning and training should be modified towards a more preventive approach. The use of topical fluorides and fissure preventive sealing by clinicians in circumstances where these measures are likely to be cost-effective should be encouraged both by university teachers and by health service providers. Budget allocation should be directed to this end.

Community involvement is of paramount importance, coordination with national and local programmes directed to improving the quality and length of life, will enhance the chances of influencing the community towards positive dental health.

Involvement of professional associations and commercial interests in approved health promotion in the media, particularly television is a very worthwhile strategy.

5. Implementation of the programme

On completion of formulation of national goals the implementation process begins.

Stage 1 - acceptance

No programme has any chance of successful implementation unless and until it has been presented, discussed and accepted by all sectors of the administrative and political environment, the professional community and the public.

The formulated goals should be widely circulated in draft form and opportunities should be given at all levels for discussion and consideration by the various interests involved.

Dental public health officers, epidemiologists and public health officers in the field should be brought together on a district, regional or national basis depending on the conditions in each country and the results of their deliberations should be brought for discussion with the dental professions and with other groups involved. This process of ongoing dynamic consultation will eventually result in a national consensus of acceptance of the goals as formulated and amended.

The accepted goals should now be costed and presented as a draft proposal for approval by the appropriate government agencies according to circumstances.

It should be emphasized that goal implementation may not necessarily involve additional budget allocations but may need imaginative rethinking of current allocation of resources and reestablishment of priorities in the light of the goal setting philosophy.

A need for flexibility is paramount since the very setting of goals and their acceptance may so influence the process as to demand review and reassessment on a continuous basis.

As an example of the type of change that may be indicated one could suggest reconsideration of fee schedules in national health or dental insurance programme in order to encourage preventive procedures by according them appropriate or attractive remuneration.

It is important to consider in great detail the effect of the plan on educational needs of all members of the oral health team from basic training up to and including research, academic and administrative levels.

Systems of information dissemination and reporting should be as widely developed as possible in order to maintain and encourage cooperation. This as part of the monitoring system will create an inbuilt "feedback" component.

Stage 2 - approval

The plan is now submitted for Government approval and ratification as an official national policy. This may involve a necessity for reopening discussion or reconsidering planning in the light of political reaction to the plan. Enabling legislation or other legislative instruments may be desirable or even essential according to individual national administrative procedure.

6. Evaluation and monitoring

Both process evaluation and outcome evaluation are necessary throughout the planning period, and both require adequate monitoring systems.

Process evaluation should make sure that all steps along the strategic path lead to the intermediate goals envisaged. Monitoring of the process must be set up in a way to enable project staff to become aware of difficulties and to correct the course of events at short notice.

Outcome evaluation should be based on data collected according to standard methods (WHO Oral Health Surveys). Besides findings obtained by epidemiological studies and surveys, treatment records centrally collected by insurances or national health service administrations are useful. In order to verify changes and results obtained after implementation of health-promoting programmes, baseline data regarding relevant oral health parameters should be collected, followed by periodically repeated sampling, examination and analysis.

In addition to information and data obtained by process evaluation and monitoring of oral health status, information regarding the variables described earlier under 2.2 and 2.4 should be periodically collected, fed into the monitoring system and finally used in the process of analysing and interpreting the oral health data. As a result goals may be changed or modified, resources reallocated and personnel promoted or transferred.

Evaluation will take into account all the factors, environmental, political, and technological and may result in change of strategy or direction of thrust of the particular activity.

7. Recommendations

- That Member States be urged to initiate formulation of national goals for oral health in order to comply with the WGO programme for health for all by the year 2000.

- That Member States set up systems for collecting information for monitoring of the oral health status in their population.

- That where monitoring systems are not yet available provisional goals should be formulated on the basis of available information as soon as possible.

- That although a number of countries have already achieved some of their goals for oral health by the year 2000, goals require periodic revision and updating in the light of new information obtained from continuous monitoring.

- That Chief dental officers and advisers to governments should devise strategic plans directed towards achieving their goals. Strategies should take into account personnel and other resources and sufficient funds should be identified for implementation of those strategies. They should be cost-effective and should include a time scale. They should be feasible and acceptable to administrators, consumers and providers.

- That innovative methods of education should be implemented for all oral health personnel and the content of education directed towards achieving national goals through health promotion, preventive services, primary health care and community involvement.

- That the way of utilizing financial resources for oral health care should encourage prevention. Therefore, methods of remuneration should be developed to supplement or replace the common methods of payment by fee for item of service and/or salary.

- That Chief Dental Officers of Member States maintain close communication between each other on matters pertaining to the oral health of the community in the Region, and to this end regular meetings should be organized by the Oral Health Unit, World Health Organization, Regional Office for Europe.

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Annex 1

COUNTRY EXAMPLES

Finland

Inspired by the "Joint FDI/WHO Global Goals for Oral Health by the Year 2000" (Federation Dentaire Internationale, 1982) specific national goals have been agreed upon for the population of Finland.

The following list of Finnish national goals is based on the same health indicators and age groups as the global goals suggested by FDI/WHO. For comparison, the global goal for each age group is given in parentheses after the Finnish national goal (Table 1).

Goal 1 At 5-6 years of age at least 70% (50) of children should have intact teeth

The global goal (50%) was already practically reached in 1980. Since the enforcement of the New Public Health Law in 1972, the caries situation among preschool age children has continued to improve and the trend appears to be persisting. As there seems to be no reason for this trend to alters the Finish goal of 70% is realistic.

Goal 2 At 12 years of age the average number of DMF (decayed, filled and carious extracted) teeth should be no more than 1.5 (3.0)

At this age, achievement of the global goal (3.0 DMF) was already in sight in 1980. The very high DMF scores of 1972 (8.6 DMF) had by 1982 dropped to 4.0. As the present trend seems to indicate continued improvement for this age group as well, it is realistic to set the Finnish goal in the year 2000 at 1.5 (3.0 DMF).

Goal 3 At 18 years of age 98% (85%) have lost no teeth due to dental disease

This global goal (85%) has already been reached in Finland. As the oral health of children and adolescents is continually improving, there is no reason to doubt that practically all Finnish 18 year olds will in the year 2000 enjoy a full set of teeth.

Goal 4 At 35 to 44 years of age the proportion of edentulous subjects is reduced by 50% (50%)

This age group was born between 1956-65 and their first permanent teeth erupted between 1963-72. The older members of the group grew up at a time when the caries incidence was very high. The younger members of the age group were already too old to draw full benefit from the successful preventive programme of the 1970's. The interval of years between 1970

and 1980, however, saw a slight decrease in the proportion of edentulous subjects in the 35- to 44-years age group. With the improvement in attitudes to dental health and easier access to care, it seems realistic for Finland to adopt the global goal of 50% reduction in edentulousness at this age.

Goal 5 At age 65 and over the proportion of edentulous inhabitants in Finland does not increase (is reduced by 25)

In 1980, 67% of this age group had no natural teeth. The percentage had increased by 13% since 1970. Increased edentulousness was also recorded during the same 10-year interval for the age group 50- to 65-years. As this trend has persisted since the 1950's there is no reason to believe that the proportion of edentate elderly people will decrease by the 2000, especially as the longevity of the population is also increasing. A marked improvement in the dental condition of people aged 65 and over is not likely in Finland much before the year 2030.

In conclusion, it would appear that the Finnish national oral health goals for the year 2000 can be set at a higher target than the global goals for the age group 5 to 6 years, and 12 and 18 years. Due to the poor oral health prevalent in Finland in the 1960s, the national goal equals the global goal for the age group 35 to 44 years. As to the national goal for the age group 65 years and over, the poor state of oral health of the Finnish adult population will have a lowering effect on the global goal.

It is accepted that the national goals will not be automatically achieved. A successful outcome will require a combination of further research into oral health services and the implementation of a carefully planned national oral health care strategy.

Table 1. Global and national goals for oral health in the year 2000

Country: Finland

Target group	Global goal in 2000 WHO/FDI 1982	National goal	Present status	Trend
1. 5-6 year olds	50% will be caries free	70%	46% (1984)	Increasing
2. 12-year-olds	No more than 3.0 DMF-teeth	1.5 DMF	2.9 (1984)	Decreasing
3. 18-year-olds	85% should retain all their permanent teeth (M = 0)	100%	100% (1982)	Stable
4. 35-44-years	50% reduction in present levels of edentulousness,	50%	12% were edentulous (1980)	Decreasing
	at least 75% should have a minimum of 20 functional teeth	75%	54% had 20 teeth (1976)	Increasing
5. 65 years on	25% reduction in present levels of edentulousness,	25%	67% were edentulous (1980)	Stable
	at least 50% should have a minimum of 20 functional teeth	30%	10% had 20 teeth (1976)	Increasing
6. Monitoring system	Establishing a data base for monitoring changes in oral health	Annual reporting system by communal health centre to provincial and national levels. "Mini-Finland" for adults. Ad hoc studies.		

German Democratic Republic

Great attention is being focused on the medical and social care of the people in the German Democratic Republic. The right to the preservation and restoration of health has been embodied in the constitution and governs the responsibility of the state for the development of medical care according to the scientific level of knowledge.

Dental care is integrated in the general system of medical care. The planning and coordination of oral care are implemented by the Ministry of Public Health in compliance with state health directives. The counties are responsible for the implementation of this care. The number of dentists graduating and other oral health personnel required is determined by the Ministry of Higher Education in coordination with the Ministry of Public Health. The establishment of new surgeries, both in outpatient's departments and state dental surgeries, is within the responsibility of the councils of the counties which coordinate their plans with the Ministry of Public Health.

Delivery of oral care

At present (1986) the average dentist to population ratio is 1:1 416. A ratio of 1:1 300 is the goal for 1990, which is then to be maintained by scientifically based planning. Dental hygienists primarily assigned to preventive duties are being trained. since 1972. It is planned to obtain a dentist to dental nurse to dental technician and dental hygienist ratio of 1:1.3:0.7:0.2 by 1995.

Patients have a free choice of dentists. In all towns there are outpatient departments where patients are cared for by several specialists in general stomatology, pedodontics, orthodontics and maxillofacial surgery. In smaller towns and rural areas individual treatment is usually carried out by a general practitioner; difficult cases calling for special treatment are transferred to the appropriate specialist.

For children attending school there is an outpatient system that provides for routine examinations and treatment by a pedodontist. In larger towns there are youth dental clinics caring exclusively for children. The aim is to provide regular oral examinations and, if necessary, dental treatment for all children at pre-school and school age.

At present, curative treatment has priority but greatest attention is directed to the systematic development of the preventive and rehabilitative care including water fluoridation which has been introduced in Karl-Marx-Stadt in 1959. About three million inhabitants in more than 40 municipalities and rural communities are supplied at present with fluoridated water.

Further attention is also being devoted to the improvement of oral care for factory workers.

Level of dental care

The GDR's participation in the "International Collaborative Study of Dental Manpower Systems" of the WHO (ICS-I) on the one hand, has shown the advantages of a national dental care system for the individual and, on the other, offered the basis for working out the goals of oral health to be aimed at up to the year 2000.

The oral health status is mainly determined by the prevalence of caries and marginal periodontal diseases. Caries is at an average level in children and adolescents. In the 12 year olds are found DMF/T-numbers between 3.5 and 5.5, in the 12 to 14 year olds, between 4.0 and 6.7. Caries prevalence in towns with water fluoridation or well organized fluoridation by means of tablets has considerably approached or exceeded the age-specific global goal of the WHO (DMF/T = 3).

No caries decline has been observed in any other regions since 1959. The level after completed treatment in children, in spite of low DMF/T-numbers, comes up to only 40 to 60 per cent as a result of the fluctuating accessibility and acceptability of the dental facilities.

The frequency of dentofacial anomalies requiring treatment is very hard to estimate due to the insufficient definition of the standard term, as in so many cases. However, the ICS-I comparison underlines the advantage of dental care from the viewpoint of children dentistry; yet, the proportion of successfully treated children comes up to 28 per cent, a level that is remarkable also on an international basis.

The oral health status in the adult population is reflected by a low caries prevalence (DMF/T in 35 to 44 year olds = 14 to 15.4) and a high number of functional teeth (24 teeth) with a small number of total edentulous (0.3 per cent) at the medium adult age.

Mainly slighter degrees of intensity that can be controlled were located at the individual teeth in spite of the assumed pattern of periodontal disease prevalence. Destructive states of periodontal diseases requiring therapeutical intervention were found in 7 to 10 per cent of the subjects only.

The prosthetic care can be considered satisfactory in particular from the viewpoint of the preservation of the oral biological structure. Of course, the number of extractions in the treatment increases with advanced age and involves a high prosthetic demand which could also not be satisfied in 60 per cent of the 35 to 44 year olds.

Dental care has reached a high level in the German Democratic Republic. Nevertheless, the efficiency level with its measurable result only represents the accumulation of curative and rehabilitative single measures which could be higher both in quality and quantity with the same resources as to personnel and material in case of a modified strategy of dental care. National goals to obtain a higher health status up to the year 2000 have been formulated for the German Democratic Republic taking the present oral health status as a basis.

National goals for oral health

(1) 5-6 year olds: 60 per cent caries-free.

(2) Not more than 3 DMF teeth in 12 year olds.

(3) Fully preserved teeth in 90 per cent of the population at an age of 18.

(4) 24 functional natural teeth in the age group from 35 to 44.

(5) 20 functional natural teeth in 50 per cent of those older than 64 in which the percentage of edentulousness should not exceed the 25 per cent limit.

For the periodontal health status we orientate in: 18 year olds for 90% with at least 3 sextants TN 0/subject; 35 to 44 year olds for 75 of the subjects with at least 3 sextants with TN 0 and a no more distinct pocket depth than TN 3; 65 year olds for not more than 10% which do not have one or more sextants with TN 4.

A densely branched network of dental care facilities exists today according to the demographic structure as a result of which the German Democratic Republic is divided in 15 counties and 227 districts. Children and adolescents, younger adults and employees of large-scale enterprises are considered special target groups.

Although the formulated objectives confirmed by the Minister for Public Health are representative for an oral health status to be achieved in the German Democratic Republic, they need both an adaptation to the regional and the territorial situation. Naturally, there are variations which have to be taken into account in preparing perspectives on dental care oriented on priority for a period of five years. The knowledge of the oral disease prevalence (community diagnosis) and the strategy of care to be derived from this under consideration of the resources available are essential preconditions for manpower planning to be carried out.

In order to achieve an enhancement of the care as it is carried out up to now, it is necessary to establish a recall system for certain target groups and thus introduce the "progressive form" where the patient is invited by the dental facility for preventive care or treatment.

The tasks have to be planned in defined steps to realize the goals.

1. To achieve the goal in 5 year olds requires a thorough enforcement of primary prevention in all kindergartens, which will result in a higher oral health status of all school beginners in 1990.

2. The DMF index in 12 year olds will thus be under 3 already in 1995.

3. At the same time, the organizational level for secondary prevention will be raised so that the 18 year olds dismissed from pedodontics can be transferred to adult care with fully preserved and treated teeth. This also involves the precondition for a higher oral health status at middle age.

4. The number of preserved natural teeth will increase due to a preventive strategy of care in all dental fields both within the framework of controlled self-care (prevention of periodontal diseases) and at the place of work, and also by a rehabilitative care of high quality preserving the oral residual structure.

5. The aimed care of those that are at an age of 50 today is just as important to prevent the destruction of teeth as it is characteristic at present for those older than 65.

Significant crucial points for care are provided by drinking-water fluoridation and also the application of individual and collective measures in all age groups, the full utilization of material and personnel, not only in the care for children and adolescents, but also for adults, and the improvement of dental facilities in schools and enterprises. All this requires the accurate knowledge about the level of preventive care, the demographic situation and the future trends of developments, the oral disease prevalence (community diagnosis), the cooperation of other social forces (school authorities) and the possibility to use fluorides as well as the state of routine pedodontic care including the qualification and availability of the dental staff. A quality control of the routine dental care will be carried out to obtain a result of the evidence of preventive measures: number of caries-free children; number of natural teeth per subject; periodontal health status (CPITN); number of subjects with balanced occlusion.

The preventive, curative and rehabilitative requirements to determine the demand of treatment and care have to be acquired by mass examinations.

A continuous actualization of the defined strategy of care will in future be enabled by the correlation of the treatment need, the expenditure of care, the capacities available and the services rendered, and the focus will be on the comparison of the national goal and the results obtained territorially. Not only the level of stomatological care within the whole country can be determined by this but an international comparison is also feasible without acquiring additional data.

Accordingly, the WHO Collaborating Centre at the section of stomatology of the Medical Academy in Erfurt with the support of the Ministry of Public Health will also support the efforts of the WHO and the FDI to organize a global data bank in future (Table 2).

Table 2

Age	Definition	Goals: WHO/FDI global	Goals: GDR national	Goals: Erfurt County regional – District +	⟷	District –
5-6	Caries free %	50	60	70	60	50
12	DMF-teeth	3	3 1.5 TWF/TBF	1.5	3	3
18	Preserved teeth	85	90	95	90	85
35-44	Decline of edentulousness %	50	-	-		
	Percentage of natural teeth	-	75 (24 teeth)	85	85	75
> 64	Percentage of natural teeth	-	50 (20 teeth)	50	50	50
	Edentulousness %	25	<25	<25	<25	<25

Ireland

In May 1977 the Thirtieth World Health Assembly of the World Health Organization (WHO) took the decision that the main social target of governments and of WHO in the coming decades should be the attainment by all the citizens of the World by the year 2000 of a level of health that would permit them to lead a socially and economically productive life.

This important decision was followed in September 1978 by the Declaration of Alma-Ata on Primary Health Care. This Declaration was drawn to the attention of Member States of the European Region of WHO by the Regional Committee who urged that it be taken into consideration in all national health programmes and plans. There is therefore within this United Nations Agency a strong political commitment to the primary health care approach being the key to attaining an acceptable level of health for all by the year 2000.

That oral health is an integral part of general health has never been doubted. In line with the decisions of WHO therefore the General Assembly of the International Dental Federation (FDI) at its meeting in September 1981 adopted an official statement of global goals for oral health in the year 2000. There are six goals described as follows:

(1) 50 per cent of 5-6 year olds will be caries free.

(2) The global average will be no more than 3 DMF teeth at 12 years of age.

(3) 85 per cent of the population should retain all their teeth at the age of 18 years.

(4) A 50 per cent reduction in present levels of edentulousness at the age of 35-44 years will be achieved.

(5) A 25 per cent reduction in present levels of edentulousness at the age of 65 years and over will be achieved.

(6) A databased system for monitoring changes in oral health will be established.

The essential attributes of these goals are that they are stated in measurable oral health terms and, at the global level, they are deemed realizable and therefore realistic. However, since then there has been only limited progress made in the setting of either regional or more importantly national goals for oral health in the year 2000. Indeed a recent article drew attention to the fact that in the absence of stated oral health goals, discussions about oral health manpower levels and types and hence the organization of preventive and curative services are virtually meaningless. Such discussions about services usually focus on the strategies to be adopted leaving unstated for what purposes they are being implemented. Oral health services directed solely towards meeting normative needs, i.e. as defined by dentists, may do little in achieving oral health for the community. Indeed they may only serve to develop a more sophisticated treadmill for oral health workers of all types to work on if oral health goals are not stated. A good example of this is the effects of the British National Health Service as evidenced by the results of the first Adult Dental Health Survey. They show that twenty years of trying to meet normative needs had done little to promote oral health but much to increase dental treatment. The two are not synonymous.

What appears to be essential in the planning of all types of oral health services (preventive and curative) together with the organization of manpower training programmes is a clear statement of the oral health goals to be achieved in a specified time. It is then that different strategies can be examined and the most appropriate one selected, implemented, monitored and evaluated.

Formulating oral health goals for Ireland

The global goals set by the FDI are intended as a guide for the development of national goals. To be realistic such national goals must reflect national circumstances taking into account present levels of oral health and the likely resources available in the next fifteen years to improve them. Although any final decision on national oral health goals in Ireland should be delayed until the results of the current National Survey of Children's Dental Health are available it is the intention of this article to examine already available data and pose oral health goals for discussion by all interested parties.

Using the FDI Global Goals as a framework it is possible to examine existing data systematically to derive national goals for Ireland. Suggested National Oral Health Goals for Ireland by the year 2000 are summarized in Table 3.

Table 3. A summary of national oral health goals for Ireland by the year 2000

Goal 1	50-70% of the 5-6 year old population will be caries free.
Goal 2	12 year old children will have on average no more than 1.5 to 2.0 decayed, missing or filled teeth.
Goal 3	90% of all 18 year olds will retain all their teeth.
Goal 4	No more than 6% of 35-44 year olds will be edentulous.
Goal 5	No more than 54% of those 65 years and over will be edentulous.
Goal 6	All health boards will have established a standardized data based system for monitoring changes in oral health.

The percentage of the 5-6 year old population who will be caries free in the year 2000

Dramatic improvements have already been achieved in this area since the introduction of water fluoridation in 1964. However, as yet it is estimated that only about 60% of the population receive fluoridated water. Improvements are therefore likely to be patchy. Nonetheless it seems reasonable to set a

national figure higher than that given as the global goal (50%). Recent data from fluoridated and nonfluoridated areas would suggest that between 28.6% and 42.6% of five year olds are now caries free. For the year 2000 it is suggested that the range should be 50-70% of five year olds caries free.

The number of decayed, missing and filled teeth (DMFT) at 12 years of age

Current data for twelve year-olds are not readily available. There are, however, data for 11 and 13-14 year-olds, which can provide a satisfactory basis for discussion until the national survey data become available. The current range would appear to be between 4.4 and 2.1 DMF teeth on average per child. Again it would seem reasonable therefore to suggest a goal for the year 2000 lower than the suggested global figure of an average of 3 DMF teeth per 12 year-old Irish child. However, in the light of the following goal it must be assumed that this would be composed almost entirely of decayed and filled teeth.

Total retention of teeth at age 18 years

The FDI goal is that 85% of eighteen year-olds should retain all their teeth. Current trends would suggest that a slightly higher figure might be achievable here. Ninety per cent is therefore suggested, although it is recognized that in Ireland there is a relatively high level of need for orthodontic care which may well result in the extraction of teeth for orthodontic treatment purposes. These are excluded from the FDI global target.

The percentage of the population edentulous at 35-44 years

A survey of Irish adults aged 16 years and older was conducted in 1979 by O'Mullane and McCarthy. Overall 26% of the adult population were found to have lost all their teeth. At the ages of 35-44 years 12% had no teeth although it varied between the sexes and the regions. The FDI goal is that this figure should be halved. The proposed goal for Ireland is therefore that by the year 2000 only 6% of the 35-44 year age group will be edentulous.

The percentage of the population edentulous at 65 years and over

The figure from the 1979 survey referred to above is that 72% of all men and women of 65 years and over had no teeth. The FDI goal is to reduce this by a quarter. The goal for Ireland for the year 2000 should therefore be that 54% of 65 year olds and over should be edentulous.

The establishment of a data based monitoring system

All health boards should establish a standardized data based system for monitoring changes in oral health.

Discussion

Although this paper is short we believe it to be central to the development of a coordinated programme involving all sectors of the dental profession to achieve the overall goal of health for all by the year 2000.

However, unless such goals are to be no more than mere slogans a much deeper understanding will have to be gained of what is meant by Primary Health

Care Approach as it relates to Oral Health in Ireland. To confuse primary health care with the primary health care approach is all too often to fall back into a treatment-oriented, professional health worker dependant system. Such methods of providing health care fail no matter what level of sophistication or simplicity of care is provided. The objective of the primary health care approach is to help ordinary people to manage and maintain their own oral health with a minimum of professional supervision and intervention. It is believed that this can only be achieved when individuals and communities feel able to be actively involved in health matters. There is therefore a strong component of health in education inherent in the primary health care approach, which of necessity will be linked to the programmes of health promotion. In Ireland after twenty years of water fluoridation (in many areas) oral health is making real advances. Yet with one of the highest sugar consumptions in Europe (the per capita daily sugar available for consumption in 1978 was 130 g in Ireland and in the UK 112 g in 1976) and many people still outside even the possibility of the benefits of fluoridated water mainly for geographical reasons, much remains to be done, but nonetheless Ireland has a good head start over all her neighbours.

That the adoption of the primary health care approach in oral health will have implications for the primary oral health services cannot and must not be denied. Primary oral health care services should:

- be built on the principle of community participation,
- be staffed by a multidisciplinary team,
- serve as first point of contact to the whole national oral health services,
- be supported by an effective referral system,
- prevent oral diseases, promote oral health, care for and rehabilitate people with respect to their oral health,
- maintain a continuity of relationship with every member of the population it serves,
- reach out into all homes and workplaces systematically to identify those at highest risk,
- help people assume greater responsibility for their own oral health.

Clearly changes will take time to be developed but having clear goals will at least focus the attention of those involved on what is to be achieved. After implementation they will also form a valuable part of the monitoring and evaluation system.

Clearly in the attainment of oral health goals by the year 2000, it will be necessary to set interim targets, some of which may relate more to the levels of treatment than to the absence of disease.

Such changes will also have important implications in the training to be given to future generations of oral health workers of all types as well as to the retraining through continuing education of existing workers. The

discussions of the WHO European Intercountry Workshop on Organized Changes in Educational Systems for Oral Health Manpower , held this September in Trinity College, Dublin, are particularly important in this respect. What may be the most difficult task to accomplish will be a reasonable level of attainment of the oral health goals by all sectors of the community. That preventive and curative services are responded to differently, with different outcomes, by different sectors of the community is well documented.. Indeed fluoridation alone was shown in the study cited to be insufficient to eradicate the effects of differing social backgrounds on children's experience of dental caries. In Ireland it can be predicted that similar differences exist and may, in the present economic situation, be increasing. Such differences may not always exist but that they can occur should re-emphasize the need to monitor regularly the effects of these programmes on all sections of the community. Reducing these social class differences in oral health must be one of the preoccupations of all those involved in the oral field if the setting of oral health goals is to mean anything in terms of benefits to other than a relatively small sector of the population.

Annex 2

GLOSSARY

Action research	The manipulation of service inputs to test their relative impact in controlled experiments.
Activity	A general category of work performed by personnel in the attainment of an objective.
Activity studies	Studies carried out usually to analyse the work of groups or individuals over a given period.
Adequacy	The allocation of activities and resources in manner and quantity sufficient to permit the achievement of desired objectives.
Administration	The planning, programming and evaluation of an activity.
Allocation	The distribution of resources, tasks, responsibilities to and within a programme.
Approach	Means or methods of attaining an objective or target.
Appropriate health technology	Methods, procedures, techniques and equipment that are scientifically valid, adapted to local needs and acceptable to the community and which can be maintained and utilized with resources the community or country can afford.
Appropriateness	The degree to which one alternative set of activities and resources has the potential for ameliorating health status relative to that inherent in other alternatives.
Baseline	Data reflecting the state of affairs at the beginning of a programme or programme phase, which serve as a point from which subsequent changes can be measured.
Constraints	The limits of flexibility that the planner has in choosing alternatives to be submitted to the decision-maker.
Data bank	A system for accepting and storing data concerning defined groups of persons, events or institutions in such a way that the information may be aggregated and retrieved according to the user's needs.

Effect	A general term covering the impacts, outcomes and results, but distinguishing these from the direct outputs of activities *per se*.
Effectiveness	The degree to which a plan, a programme or a project has achieved its purpose within the limits set for reaching its objective.
Efficacy	The benefit or utility to the individual of the services, treatment regimen, drug, preventive or control measure advocated or applied.
Efficiency	The effects or end results achieved in relation to the effort expended in terms of money, resources and time.
Epidemiology	The study of the factors determining the frequency and distribution of diseases in humans.
Evaluation	The systematic and scientific process of determining the extent to which an action or sets of actions were successful in achievement of predetermined objectives.
Feedback	The flow of information from a later phase of a process to an earlier phase.
Forecast	Conjectural estimate of something future; prediction (see also technological forecasting).
Goal	The intended outcome of a programme or project.
Guidelines	Document which sets out the steps to be taken in performing a task or implementing a policy and the manner of doing so.
Health information system	A mechanism for the collection, processing, analysis and transmission of information required for organizing and operating health services and also for research and training.
Impact	The overall effect which a programme has.
Indicator	Variable which can measure changes directly or indirectly in a valid, objective, sensitive and specific way.
Input	The basic resources required in terms of human resources, money, materials and time.
Management	The guidance of an undertaking towards the achievement of its purpose.
Monitoring	The continuous follow-up of activities to ensure that they are proceeding according to plans.

Objective	The end result a programme seeks to achieve.
Outcome	The actual result of a certain activity representing one of the major parameters in the assessment of effectiveness.
Output	The amount of benefit or the effect produced as a result of the use of certain resources.
Parameter	Measurable or quantifiable characteristic or feature.
Planning	A process by which provision is made for resources required in the future on the basis of available knowledge and through specialized methods and techniques.
Process	Course of action.
Programme	An integrated series of activities, each focused on one or more aspects of a central problem.
Project	An organized interrelated set of activities designed to accomplish a specified objective over a prescribed period of time with a specific amount of resources.
Projection	The logical consequences of assumed courses of action or events.
Relevance	Compliance with the needs and social and health policies and priorities a programme has been designed to meet.
Strategy	Broad lines of action required to achieve a certain target.
Target	An intermediate result towards the objective that a programme seeks to achieve within a given period of time.
Task	One of the units of work into which an activity can be subdivided.
Technological forecasting	Scientific discipline for prediction of future technological or scientific breakthroughs.

Annex 3

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