A review and discussion of goals in community dentistry

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ABSTRACT - The author discusses the need for clearly stated goals in community dentistry, the choice of goals, and the chances to achieve them. Goals in community health planning should be based on the values, needs and resources of the community in question. When analyzing goals a distinction should be made between dental health and dental care. Some goals for dental care, e.g. equity of access, may concern social justice but do not necessarily lead to better dental health. It is generally agreed that good dental health for a whole community cannot be achieved by restorative treatment alone; good dental health habits are considered to be a better way to promote dental health. Existing research indicates that there are chances to attain an acceptable level of dental health if the community effort is systematically planned and executed. There are indications that a reduction in the prevalence of dental disease can be brought about by new and effective means in the future. Long-term planning should be flexible enough to respond to new opportunities.

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Social institutions, whether medical, economic, educational, or political, must provide “proof” of their legitimacy and effectiveness in order to justify modern society’s continued support. Increasing pressure is being put on public service and community program workers to evaluate their activities and to judge the worth of their programs. Evaluation is an essential part of planning and management. It relates results to objectives or goals; it is the process of relating the actual achievement of a service or program to the results predicted in the plan. The most essential feature of evaluative research is the presence of a goal, the achievement of which constitutes the main purpose of this research.

Dental health services have been analyzed in numerous studies. (For reviews, see FLOOK & SANCZARO and RICHARDS.) However, goals for dental activities have seldom been discussed. The dental profession is guided by an intuitive idea of what good dentistry is. Good community dentistry is often understood as good individual dentistry for all inhabitants of the community (which may be the world, a nation, a municipality, a factory, or a school). Since the level of unmet need for dental treatment by most objective standards is high, possibly even higher than for physician service, need for a precise definition of goals has not arisen. Most dental activities are accepted as a step in the right direction. However, the complexity and cost of modern dentistry are increasing at such a rate that intuitive planning is no longer adequate, especially if dentistry is considered to be of public interest, a civic right, and not merely a matter between dentists and patients.

The purpose of this paper is to discuss the choice of goals for community dentistry and the chances to attain different goals. It is the hope of this author to provoke further discussion on this matter.

DENTAL CARE AND DENTAL HEALTH
An increasing amount of attention is presently being focused on the study of health services in general. Health services research is concerned with the organization, staffing, financing, utilization, and evaluation of health services. It produces knowledge
that will contribute to improved delivery of health care. It is concerned with understanding the interplay of psychologic, social, cultural, and economic factors that condition both the availability and utilization of services.

According to a WHO Expert Committee, dental health services may be defined as those services which are designed to promote, maintain or restore dental health. Public or community dental health services are those dental health services of an educational, preventive or curative nature which are organized by governments (central, regional or local), with government resources only or with participation from other individuals or agencies, or through organized community efforts. Dental health may be defined as a state of complete normality and functional efficiency of the teeth and supporting structures and also of the surrounding parts of the oral cavity and of the various structures related to mastication and the maxillofacial complex.

The general objectives of the health services system are often expressed as health promotion, and the prevention and treatment of disease. Analogically, the general goals of dental care (in current literature understood as the result of the activities of dental health services or the utilization of these services) could be expressed as dental health promotion, and the prevention and treatment of dental disease.

Goals can be analyzed at different levels. Most researchers dealing with program evaluation agree that although clarification of a program's ultimate goals is one of the most difficult phases of the evaluation, it is also one of the most critical. Studies of intermediate goals are often easier to carry out, but the information gained is more limited. These are justified only when the relationship between intermediate and ultimate goals has already been demonstrated or will be tested in subsequent studies. When analyzing goals in dentistry a distinction should be made between dental care and dental health. The relationship between them is more complex than is generally realized.

Providers of medical care have long been aware of a health paradox: the more care given, the more care is needed. Saved life and cured disease often imply further care for a long time in the future. This paradox applies in dentistry, too. Teeth that some decades ago would have been lost, can now be saved but are very likely to require further treatment later on. The more treatment given today, the more treatment is needed tomorrow. Dental treatment alone does not guarantee good dental health.

The discrepancy between the ambitions of health care – not only of dental care – and what is actually achieved, has made some authors question the very foundations of the present system of health care delivery. According to HELT, many have unrealistic assumptions concerning the relationship between medical care and health. The present American health care system produces more inequality than health. STRAUSS is concerned about the possibilities of lower income groups in the United States to get medical care. The medical care system has never adequately served the lower income groups in the past because it was not designed to do so. Good care for these people cannot be expected without far-reaching reforms in the present system.

The planners are becoming increasingly aware that additional expenditure for medical services will not in itself guarantee a favorable return in health. Investments in dentistry, for instance training more dentists, do not as such guarantee better dental health. As TEELING-SMITH points out, the existing shortages in health care delivery might be better met by a reallocation of existing resources than by simply increasing the total resources available.

Utilization of dental health services is easier to study than is dental health status because exact information on use can be found in existing records. Analysis of dental health is connected with more difficult problems (consistency of diagnoses, difficulties in organizing surveys, etc.). Before considering dental care, for instance in the form of increased utilization of dental health services, as a goal for community dentistry, it should be made certain that maximizing this care also maximizes dental health. Programs and plans should be carefully evaluated in this respect. There can, of course, be special goals for dental health services, such as equity of access, moderation of costs and assurance of quality. Many communities may wish to alter the present pattern of utilization of dental health services to promote equality between different socioeconomic groups. A change of this kind may result in greater social justice but not necessarily in better dental health in the long run.
HOW TO STATE GOALS

The procedure of “goal-setting” for health care starts with some value judgment, either explicit or implicit — for instance, that it is good to live a long time. The goal to be formulated is then derived from this value. In dentistry the value could be: it is good to have healthy natural teeth. There are several alternatives for formulating goals from this value.

Perfect dental health for each person is an unrealistic goal. Philosophically, the goal of complete freedom from disease and struggle is almost incompatible with the progression of life. Giving the present generation all the dental treatment it needs according to prevailing dental treatment standards is also economically unrealistic. KRASSE has approximated how much it would cost to give Swedish people the dental treatment they need for the time being. Although Sweden is one of the wealthiest nations in the world and has a high standard of dentistry, KRASSE’s conclusion is that the cost would be far beyond all available economic and personal resources.

Reducing the goal to “good dental health for most people” implies a choice. What is good dental health and who should have it? For planning purposes there is no universal answer. Health planning must be related to the community and period of time in question. A large number of measurements and standards must be defined: health status and needs of the community, resources, activities and attitudes of staff and clients, standards of practice, and impacts of effects of the programs. This applies also to community dentistry.

The assessment of priorities is a difficult task. Most often it is conducted by a series of informed guesses, value judgments, and percentage additions to or subtractions from past effort. Economists can contribute to decision-making by advising on the allocation of scarce resources between competing uses. ABEL-SMITH suggests that rather than giving a superficial description of the areas where cost-effectiveness analysis might be applied, the economists should help the health planner to rethink his ends and question the means by which these ends are to be achieved. Will this program result in improved health, and if so, could the gain be achieved at lower cost or a much greater gain achieved at the same cost?

HÅRÖ & PUROLA point out that the ultimate goals of health services are similar in all countries. They are derived from basic ethical norms and social values. Very different methods and immediate objectives can be used to achieve them. For instance, the role society plays in organizing health services varies from country to country.

Most people agree that dental care should be provided at least to the extent that everybody can get relief in case of toothache and that everybody is able to chew in some way. Consideration of these basic wishes may constitute a reasonable goal for adult dentistry in some communities.

The dental profession is becoming more and more aware that good dental health, no matter how generously it is defined, will never be gained for a whole community by means of restorative dentistry. Instead, prophylaxis has long been considered to be the right way to dental health. Having accepted that prophylaxis is a rational way to reduce dental disease, the next step for the planner is to investigate how this can be achieved and how long it will take.

MEANS TO ATTAIN THE GOALS

Determining the causes of caries

Much is known about how to prevent dental disease. The problem is that the transition from knowledge to implementation is difficult. It is very possible that continuing research in caries causation and pathogenesis will result in better routes to prevention than any now being pursued. Current strategy in caries research at the National Institute of Dental Research in Washington involves finding effective, safe and practical methods of altering each element in the etiologic triad: the microbiologic agent, the dietary environment, and the host tooth enamel. CARLOS says that the elimination of caries as a public health problem, which 10 years ago was an optimistic hope, is now a realistic expectation. Few other contemporary health problems seem more certain to succumb to intensive, balanced and tenacious scientific effort as that done in caries research. But even if current research succeeds in making caries almost completely preventable, the benefits will take at least two decades to be fully felt on a national scale.

Although this optimism is not shared by all representatives of the dental profession, serious consideration, at least in long-term planning, should be
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given to the possibility that the caries problem will be solved this way.

Changing dental health habits

Much research has also been done regarding the more traditional ways of fighting dental disease. In recent years, increasing numbers of social and behavioral scientists have been devoting their attention to dental problems. (For reviews see KEGELES & COHEN, YOUNG.) They, as well as many dentists, are trying to answer questions like: which factors, psychologic, social, etc., determine the actual dental behavior; can people be motivated to change this behavior in favor of better prophylactic habits? As is often true in medical sociology, the approach has mostly been applied, not theoretical. To date, dental sociology lacks theories. Much of what passes for dental sociology has consisted of collecting facts and statistics.

One of the few theoretical approaches to health services utilization, in addition to the "classic" theories of KEGELES, has been made by ANDERSEN & NEWMAN who analyzed societal and individual determinants of utilization in the United States. Their model assumed that there is a special sequence of conditions that contributes to the volume of health services use. Use is dependent on the predisposition of the individual to use services, his ability to secure services and his illness level. Some individuals have a propensity to use services more than others, and this propensity can be predicted by individual characteristics existing prior to specific episodes of illness.

A striking feature of dental behavior is its strong association with socioeconomic factors. Nearly all studies, national as well as on a smaller scale, give evidence of this correlation. O'SHEA & GRAY analyzed a national survey of the attitudes, beliefs, and behavior in the United States conducted by the National Opinion Research Center (NORC) in 1965. Personal and social characteristics such as age, education, sex, race, income, and size of community were related to positive actions and beliefs about preventing oral disease. They concluded that income and education have the greatest influence on preventive behavior. The majority of the well-to-do, educated people had recently gone to the dentist and gone for the right reasons. Beliefs in the efficacy of dental visits and toothbrushing were almost universally accepted, but these attitudes seem to have relatively little effect on actual behavior. As to other knowledge, lack of accurate information on dental health facts is indicated in several studies. However, the same studies and many others indicate also that even those who are well informed do not take appropriate action to improve or maintain their dental health status. Dental knowledge is not necessarily translated into action.

NEWMAN & ANDERSON used the Automatic Interaction Detector program (AID) on the 1965 NORC data and found the relative importance of different predictors of utilization to be (in descending order): dental health status, education and occupation, and family income. The utilization was directly related to the population per dentist ratio although the relation is not strong. It seems that the decision to seek dental care is made within the context of a few proximate influences which are individual and family based.

TASH, O'SHEA & COHEN analyzed NORC data from 1959 and combined all major social and psychologic concepts related to dental health behavior. Almost every factor considered in the social-psychologic theory of preventive medicine explained at least some of the differences between people who did and did not go to the dentist frequently and those who did and did not go for preventive reasons. The authors stated that changing dental behavior involves a composite of interrelated factors and that the use of the dentist for preventive care is related to a complex of factors, each of which may be thought of as predisposing or motivating, but no one of which explains everything.

CHAMBERS found that dental health is a habit and part of a person's style of living that is not easily influenced by a dentist. He proposed a concept of dental susceptibility, both to disease and to its management, and one of his hypotheses is that the number of people who are susceptible to prevention is a small fraction of those who need it. According to CHAMBERS, evidence supports a negative correlation between need for care and susceptibility to treatment. As a result, those who need it least are the ones most likely to benefit from the present system of delivering treatment. The AMERICAN DENTAL ASSOCIATION presented data from a national survey showing that persons with low socioeconomic status show the least concern for their teeth, consider them to be less important and often feel that
losses are inevitable. This finding suggests that these people are the ones whose life style and orientation to health makes them the least susceptible to preventive programs'). CHAMBERS' gives a warning when talking about motivation in dental care. What dentists mean by motivating patients to better care at home is not motivation but persuasion or an attempt to change attitudes. Motives refer to a very small set of general needs that are shared by all human beings, e.g. food and water, love, and self-respect. Preventive dentistry is not one of them.

Preventive action has been compared in dental disease, tuberculosis, and cancer. It was found that people who took one preventive action were the ones most likely to take the other preventive actions. People of higher socioeconomic status consistently took more preventive actions than people at a lower socioeconomic level. The authors point out that there is as yet little scientific basis for proposing effective ways of changing social group norms'. The general population is not eagerly awaiting and accepting preventive measures which may increase the probability of improving their health'.

Some small-scale studies show more promising results, at least on a short-term basis'. Most studies which have indicated some change in dental behavior are characterized by highly enthusiastic dentists or dental educators, good material resources (for instance free toothbrushes and toothpaste to participants, and free dental examinations at regular intervals) and a somewhat selected group of participants (military personnel, employees of a factory). The lowest socioeconomic groups are usually not included.

Studies with another than purely dental orientation also indicate that the public’s concern about dental health is not what dentists might wish. When comparing teeth with other bodily parts, such as the nose, ear, thumb, and big toe, New Yorkers consistently ranked teeth last'.

Knowledge of dental health facts is often the central theme in dental education. Measurement of dental conditions and practices after these programs usually show negative results'. Dental health facts may be learned after childhood but this knowledge does not alter preformed habits. If a child has not learned proper dental health habits during his early years, it is very unlikely that any education will substantially change his habits'.

Learning dental health habits does not seem to follow the traditional sequence of the “knowledge → belief → temporary action → habit” model. SCHAMBERG' points out that children learn best from activity. According to PIAGET's theory, learning is doing and the child makes substantial progress when he has opportunities for sensory-motor activities. Cognitive knowledge, with which educators are primarily concerned, may not develop until behavior, i.e. activity, has occurred. COHEN & LUCYE' point out that children are very interested in how to brush their teeth. Children are more likely to retain ideas obtained in a practical and useful way rather than what has been taught theoretically. In order to take up the brushing habit it is not necessary to know which are your bicuspids.

RAYNER has found that children’s dental practices are closely related to their mothers’ dental practices. She also stresses that dental attitudes are products of behavior rather than predecessors. KRIESEBERG & TREIMAN have also found that dental health values are a family affair. If parents go to the dentist for preventive treatment, a high percentage of their teenage children also do so – in high and low income groups alike.

In some countries free dental treatment is offered to schoolchildren. Treatment alone, when not combined with any educational effort, does not give long-term relief from caries'. Systematic combination of education and treatment has given good results. An example is the county of Kronoberg in Sweden. Mothers are informed already at maternity centers about the importance of diet and preventive measures for their babies’ teeth. Contacts are repeated, and when the child is 4 years old a dental examination is made. Dental treatment is given each year throughout the preschool and school years. Fluoroprophylaxis is given collectively to school classes. Children are taught very early to brush their teeth and the habit is maintained and refined through theoretical dental education and dis-
cussion later at school. The reduction in the caries prevalence has been remarkable compared with earlier years when early contacts were not made. Since the Swedish county councils are required by law to arrange free dental care for all schoolchildren, the caries reduction represents a considerable saving for this county. Children have shown their appreciation and there is good reason to believe that they will continue good dental habits beyond school age.

Children who do not respond to education but show a high caries incidence can be identified already at 7 years of age. Identification at the age of 9–10 years is almost too late; the risk is then that the child will need more and more treatment. Martinsson, who studied schoolchildren with high caries frequency, also emphasized the great importance of timely intensive prophylaxis in these children.

Short-term goals are usually considered as those to be attained within 1 or 2 years, long-term goals in 5–10 years. Keeping in mind that it is easier to form a habit than to change it, it might be suggested that the planning for long-term goals should be done with a view to a whole generation and not only to 5–10 years.

Long-term planning for better health services is fraught with difficulties. There is a serious danger of planning on assumptions which in a few years will be obsolete. The pace of change in scientific and social development is such that rigid planning may restrict future capacity to respond to new opportunities. This is true in dentistry, too.

REFERENCES


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