

An Introduction to the **Danish Oral Health Care System for Children**

Association of Public Health Dentists in Denmark

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The World's Best Oral Health Care

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The benefits of prevention have hardly been demonstrated more clearly than in Danish oral health care.

Twenty-five years ago Danish children's oral health was among the poorest in Europe. Today children and young people in Denmark have Europe's and the world's best oral health. More than 99% of Danish children receive oral health care.

The success is not due to "natural conditions" but to an extremely targeted, active and preventive effort by the public oral health care service, which is rather unique in the world.

Comparisons of international health figures show that this system has been efficient. No other countries have achi-

eved such a significant improvement in oral health as Denmark.

Consequently, the Danish oral health care system may justly be called the world's best.



The Danish Model

Oral health care is organised publicly by the municipalities. This means that dentists are responsible for providing oral health care for all children in a local community. Thus, the dentists are able to get an overall view of the health of the child population and plan their effort accordingly.

At the same time this overview enables the dentists to ensure that resources are spent on those children who have the greatest need and not on healthy children.

This prioritisation is possible because only one oral health care service is responsible for all children in a local community. The result is that it has been possible to monitor activities, both as regards benefits and finances.

It took 10-15 years to build and extend this oral health care system. From the beginning most clinics were located in the schools. Development was year by year, starting with the first grade and extended with one grade every year. Later pre-school children and adolescents were included in the scheme, and the oral health care system now covers all children from 0 to 18 years of age.

The Current System

According to the Oral Health Care Act all municipalities are obliged to establish local clinical facilities and to employ dentists and ancillary staff to an extent necessary to provide all children and adolescents with full comprehensive oral health care including health education and prevention from newborn to 18-year-old children.

Ninety per cent of all children are residing in municipalities that have established their own clinics, and have employed dental personnel of their own. The oral health care system has been spread to all types and sizes of municipalities and even covers many of the less populated and economically weakest areas, including some of the remote islands.

The former disparity in the oral health care service level among municipalities caused by several factors such as tradition, economy and a shortage of dentists has now been evened out.

However, the Act provides for an exemption from the obligation to establish municipal clinics. According to this provision, the municipalities are obliged not only to pay all expenses but also to secure an oral health care programme of a quality similar to that of the programme specified by law.

The individual preventive and therapeutic treatment is given in private clinics according to a standard contract and a national list of fees agreed upon by the national associations involved.



Dental Manpower and Clinical Facilities

Each municipal oral health care service is autonomous, following the generally accepted principle of decentralisation in Denmark.

The number of dentists employed by municipalities are approximately 1300, who care for approximately 1 million children in Denmark. Three quarters of the dentists are women.

The head of the municipal oral health care service, who is administratively as well as clinically responsible, is a dentist. This is the case even in very large municipalities.

On the average, each dentist has two ancillary staff. The dental nurses manage several tasks.

They assist the dentist with both clinical work and the daily administrative routines, and they are handling preventive measures. In several municipal services the dental hygienist has become a member of the oral health care team, involved mainly in health education, preventive programmes and specific clinical treatments. Besides the dentists, the dental hygienists and the chairside assistants, dental laboratory technicians are sometimes members of the teams. In larger clinics professional clerks and secretaries are employed.

The municipalities have established local clinical facilities, typically small units manned with one or two dentists with two or three dental units at their disposal.

Large clinics with 4-6 dentists are rare and to be found only in highly populated urban areas. The trend is towards a geographically even distribution of clinics in each municipality.

Clinics are often located in primary schools or in their immediate vicinity. Managerial considerations, easy accessibility and integration into the daily life of the children are important factors in the planning of clinical facilities.

Eligibility and Admission of Children

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The municipal oral health care programme offers free oral health care to all children residing in the municipality.

This offer implies the establishment of a detailed register of all children, usually obtained by a transcript from the municipal civil personal registration system - the CPR system - which contains a numbered list of all Danish citizens.

All children entitled to the benefits of the oral health care programme are automatically registered as participants. Thus the effects of lack of parental initiative in enrolment are eliminated. The first visit to the municipal clinic is arranged entirely by the clinic. Prior to the first visit the clinic contacts the home, often in the form of an infor-

mative letter underscoring that the child is now entitled to free dental care.

As a result of the action-oriented approach to having all children in the system, about 99% of all eligible children do participate on a regular basis. The remaining 1% are children who have been withdrawn from the system. In most cases their parents arrange for regular examination and treatment through private practitioners at the parents' own expense.

When parents withdraw their child from the system, this is immediately accepted. Withdrawal is, however, not final. The child can be readmitted any time and without reservations or conditions.

Planning and Evaluation

The planning and evaluation of the dental service are based on the provision of regular epidemiological data and information.

One of the important elements of the Child Oral Health Care Act was the establishment of a nation-wide epidemiological database and recording system.

Once a year, information is collected on caries status, gingival conditions and malocclusions of each individual child.

The information is passed on from the municipality to the child dental health register of the National Board of Health and provides for analysis of local, regional and national trends in the dental health situation in the child population.

The register is based on optical character recognition. This means that forms that are filled out by hand during a routine dental examination can be processed directly in a computer. The original of the completed form used as input for the computer is simultaneously duplicated and one copy remains with the records of the child in the clinic, serving as the dentist's basis for planning treatment.

The registration forms are collected from the dental clinics during the year. At the end of each year the information is processed, and the local chief dental officer receives the results from his or her own municipality in a number of standard tables showing the dental health of the children, thus enabling the chief dental officer to monitor

recent developments in the services and to include fresh data into his or her planning for the coming year with regard to special risk groups, etc.



Methods

The overall objective is to secure the highest degree of oral health for each individual. For this purpose methods are currently developed which aim at a specific group, for example small children or parents, or the individual.

The model is - via communication of knowledge - to influence attitudes and thus achieve a change in behaviour of a permanent nature.

INDIVIDUAL PREVENTIVE ORAL HEALTH CARE
The purpose of individual preventive oral health care is to make the children feel safe in any treatment situation and in general to instruct them in preventive oral health care.

Technically the effort consists in

- cleaning of the teeth
- flour treatment of initial caries attacks
- instruction in the use of appliances - toothbrush, dental floss, etc.
- dietary history and contribution to a change in dietary habits
- sealing

PREVENTIVE ORAL HEALTH CARE FOR GROUPS

It is natural that a large part of the group related activities take place in cooperation with the adults who surround the children in their everyday environment: Staff in day-care centres, teachers, health visitors and paediatricians. Precisely the interdisciplinary idea is important in order to get the message across to the target group.

During many years systematic educational programmes have been developed for children, young people and their parents.

The main subjects are:

- toothbrushing
- diet
- dental diseases, causes and prevention
- dentitions, development - developmental disturbances
- the concept of health - oral health
- appliances for dental care at home

In the presentation it is endeavoured to develop and use the new educational methods offered by modern information technology.

In addition, information material and

activities are offered to:

- expectant mothers
- new mothers - preferably in mothers' groups where the subjects are teething, sucking, toothbrushing, diet.
- play meetings at the dental clinic where small children and their parents are invited to see and talk about tooth problems in a relaxed atmosphere
- parent-teacher meetings in day-care centres and schools where the dental care staff are at the parents' service
- arrangements in the form of exhibitions, campaigns
- good relations to the press, in particular local newspapers and local radio and TV which are generally interested in bringing copy about health

Treatment

ORAL HEALTH CARE ACCORDING TO NEED - GENERAL TREATMENT

Treatment and examination intervals are based on the individual patient's general situation, primarily the possibilities of active treatment in the home, dietary habits, toothbrushing habits and caries activity.

Examination intervals may vary from a few months to an entire year or more, depending on the child's or the adolescent's need.

In one group of children, 20-30% of the population, the caries incidence is above average. For this group of children a specially intensive effort is made to stop the caries progression.

ORTHODONTICS

Orthodontics is an integrated part of preventive oral health care.

The first couple of years the child's tooth development is followed by the dentist at the local clinic. When the children are 10-12 years old, they are screened by specialist dentists who then take over responsibility for orthodontic treatment.

About 25% of all children subsequently undergo orthodontic treatment.

SURGERY - OCCLUSAL FUNCTION - CROWN-/BRIDGEWORK

These forms of treatment are relatively rare in child oral health care. In connection with agenesis treatment and after-

effects of traumas, crowns, bridges and implants may be a possibility.



Values

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The success of Danish oral dental care is a result of long-term policies which are based on clear values:

- Child oral dental care is free of charge
 - Prevention is better than cure
 - Any signs of disease must be detected early, and children and parents must be motivated to assume responsibility for their own oral health
 - The necessary information is adapted to each individual child and individual groups of children depending on age
 - The main part of preventive oral health care takes part in the home and not in the clinics where patients and parents only come a few minutes every year. Thus the information given must be of top quality.
- It is important to take a comprehensive view of the child patient. Many factors are of importance for the development/non-development of diseases. A child is a small human being who must be treated with respect and ideally must suffer no pain. A gentle procedure must be followed - it is okay if habituation to the future treatment takes time.
 - In order to help children from less favourable social circumstances or from less well-functioning families, it is necessary to cooperate with other professional groups such as health visitors and teachers.

Results

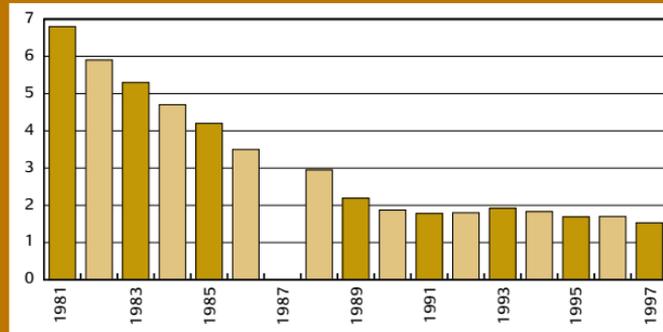
Since it was legally established in 1972 the municipal oral health care service has reported the dental health of each individual child once a year. In 1993 the Danish National Board of Health decided that the duty to report should be reduced to cover only four age cohorts.

The reporting system, SCOR, has provided a unique possibility of following the development in caries in children and young people in Denmark. Locally, in individual municipalities, the SCOR system is used as a planning tool. Registration may be made down to clinical districts so that an overview may be obtained of the caries incidence in individual areas of the local district.

In connection with comparisons with other countries attention should be

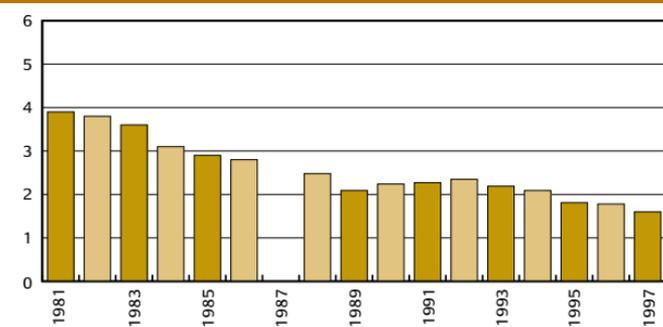
drawn to the fact that reporting is made at surface level, defs or DMF-S and not in DMF-T.

Development in DMF-S 1981-1997 in 12-year-old Danish children



IN THE PERIOD 1981-97 THE AVERAGE DMF-S FELL BY 78% FROM 6.8 TO 1.53.

Development in defs 1981-1997 in 5-year-old Danish children



IN THE PERIOD 1981-97 THE AVERAGE DEFS FELL BY 59% FROM 3.9 TO 1.6.



The Organisation of Dentists

The reasons for the remarkable results achieved are manifold. But at least two factors should be pointed out in particular.

The solidarity and culture of the staff in the municipal oral health care services through the entire period as well as the existence of the Association of Public Health Dentists in Denmark have been of considerable importance.

STAFF IN THE MUNICIPAL ORAL HEALTH CARE SERVICE

As mentioned above, municipal oral health care services in Denmark are characterised by great differences in unit size. From the smallest municipal oral health care units with 1000-1500 children and a single dentist employed, to the very large units in and around

the large cities with district divisions and several hundred employees.

It would hardly have been possible to effect the major changes in resource basis and job content without the common culture and common goal existing among the employees during the entire establishment period of the municipal oral health care service. The employees have been committed and enthusiastic about systematic, preventive and active health care.

This common corporate culture takes root and is developed at various conferences and courses held under the auspices of the Association of Public Health Dentists in Denmark. Here, the employees are informed of the latest results and ideas on the operation of

municipal oral health care services, professional odontological issues, management philosophies, etc.

Personal contacts and networks have been formed, functioning as active professional forums for the development of new ideas and for the handling of existing problems. Precisely this high degree of solidarity formed the basis for the establishment in 1985 of the Association of Public Health Dentists in Denmark, the major goal and perspective of which have been to secure a comprehensive supply of oral health care to all parts of the population.

THE ASSOCIATION OF PUBLIC HEALTH DENTISTS IN DENMARK

In many ways the Association of Public Health Dentists in Denmark have been

at the centre of developments in recent years.

First and foremost the Association organises employees in municipal oral health care services, handles collective bargaining and other pay and employment matters of interest to the staff.

But in addition to the best possible pay and employment conditions, the Association also has declared health care policy goals.

The Association of Public Health Dentists in Denmark arranges course activities, the exchange of experience, etc. within professional subjects such as quality development in oral health care and the securing of the best possible treatment offer for the patients.

But also more policy-oriented subjects such as strategic planning and staff policy have been included in the policy programmes of the Association. Subjects such as the modernisation of prophylactic measures and more general development of methods have also characterised the activities of the Association.

Today the Association has a comprehensive, systematic continuing education programme within all the above areas.

Via the activities and experience forums among its members the Association of Public Health Dentists in Denmark may be said to be a precondition for the dynamics and readiness to develop which have characterised the municipal oral health care service.

Appendix

THE LEGAL BACKGROUND

The history of the child oral health care service in Denmark reflects the development of the total welfare and health systems in Denmark.

The organised preventive programmes for large groups of children were initiated around 1960 by the municipal school dental staff in order to reduce the heavy demand for curative treatment that was common among school-children.

The advantages of a basic change from a disease-oriented to a health-oriented ideology were clearly demonstrated during the 1960s by the dental staff working in schools. There was no doubt that this basic change from therapy to prevention lead to considerable impro-

vement in the dentist's image among politicians, administrators and the public.

During the 1970s the most important changes took place and thus transformed the school dental services to an oral health care delivery system for children.

From a situation where the establishment of dental clinics was on a voluntary basis in the municipalities, the local authorities were now obliged to offer comprehensive dental care according to national legislation.

THE LEGISLATIVE PROCESS

During the 1960s the Commission for Child Oral Health Care appointed by the government was analysing the pro-

blems involved in regular child dental care. The commission consisted of representatives of the national associations of municipalities and counties, the ministries, the dental schools and child oral health care. In 1966 the commission published the report "Public Preventive Dental Care For Children". The report contained a detailed situation analysis and recommendations for the development of a free and comprehensive oral health care programme including all Danish children. The report also contained a fully prepared proposal for a framework Act to be negotiated in Parliament.

The report expressed the aim of the future child oral health care system in preventive terms:
To prevent the onset of dental diseases

Though the national economic situation led to significant reductions in the public budgets at the end of the 1970s and the beginning of the 1980s, the general principles and concepts guiding the development of the child oral health care system have not been changed. The exemption from the obligation to establish public clinics for certain municipalities has been prolonged and some reductions in the orthodontic treatment programme have been introduced.

In 1987 the Child Oral Health Care Act was substituted by a new Act which extended the public obligation to comprehend dental care for all children and adolescents until 18 years of age.

The most recent amendment to the Oral Health Care Act adds another objective to the public dental care service. Dental care for the elderly living in nursing homes and for the mentally and physically handicapped living in their own homes but who are not able to use the normal dental care service is now a part of the objective of the municipal dental care service. This task is solved partly by using mobile equipment.



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