

A survey of specialist pediatric dental services in Sweden during 1989

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SCIENTIFIC ARTICLES

Abstract

A questionnaire to all specialist clinics in Sweden (N = 38) concerning specialist services during 1989 showed that 1% of all Swedish children ages 0–19 years were treated at specialist clinics in pediatric dentistry. The decrease in caries prevalence during the last decade has not decreased the number of referrals. The major reason for referral to a specialist clinic was high caries activity in combination with behavioral management problems. Sixty-nine per cent of the specialists' working hours are spent on clinical treatment and about 11% on educational activities. It is predicted that in the future, specialists will be involved increasingly with medically compromised and socially disadvantaged children. (Pediatr Dent 14:9–12, 1992)

Introduction

According to the Dental Health Act of 1974, the provision of free comprehensive dental care, including orthodontics for all children ages 0–19 years, is the responsibility of the county health authorities. This Act led to a rapid expansion of the number of specialist pediatric dentistry clinics, mainly during 1974–1980.

Pediatric dentistry has been a registered dental specialty in Sweden since 1963. All dental specialists are employed by the Public Dental Service (PDS) and patients are accepted only by referral from general dentists in the PDS. The ratio of specialists in pediatric dentistry to the population is relatively high. In 1989, 38 clinics, including the clinics at the four university dental schools, had 85 specialists for a population of eight million people. Canada has 112 pediatric dentists for 25 million people and England has 37 specialists for 56 million people.¹

The purpose of this study was to survey the services provided by specialists in pediatric dentistry in Sweden during 1989.

Materials and Methods

The heads of all Swedish specialist pediatric dentistry clinics (N = 38) received a seven-page, structured questionnaire about the number of patients referred and the diagnostic panorama, research, and educational commitments and changing trends in specialist services. All 38 clinics responded.

Results and Discussion

Number of Patients Treated

Epidemiological surveys indicate that 93% of Swedish children ages 3–19 years undergo annual dental examination.² During 1989, 0.7% of all Swedish children between 0–19 years were treated at a specialist pediatric dentistry clinic. The percentage of patients

treated varied regionally between 0.1 and 1.6%, depending on the number of specialists in the area. The average specialist/children ratio (0–19 years old) is 1:38,000 children. The ratio was 1:20,000 from clinics (N = 7) where the heads reported that all referrals to a specialist could be accepted without undue delay. Eighty-one per cent of the children were referred from general dentists in the PDS, 9% from pediatricians, 8% from other dental specialists, and 2% from dentists in private practice. The age distribution shows a demand for specialist services throughout the age range 0–19 years. The number of referrals has increased since 1983, despite the improved dental health of children and adolescents.

Nitrous oxide sedation for dental treatment was introduced in Sweden in 1979. The major indication is for children with management problems who previously had been treated with time-consuming behavioral modification techniques. The number of patients treated has doubled between 1983 and 1989.³ The number of children treated under general anesthesia remained unchanged during the same period, indicating that these children constitute a special group representing a stable proportion of the total population.

Distribution of Diagnoses

The distribution of diagnoses in patients referred to specialist clinics is shown in Table 1, next page. The reason for referral in 46% of cases was dental treatment need in combination with behavioral management problems: 73% had high caries activity with extensive decay (Table 2, next page). This is in agreement with studies by Holst & Crossner⁴ and Mejare et al.⁵ who reported higher caries activity in children referred for behavioral management problems than in the general population. The results indicate that these children have rapidly progressive dental caries which cannot be managed

Table 1. Distribution of main diagnosis in referred cases

<i>Reason for Referral</i>	<i>Total 1989</i> \bar{x} (Range) (%)	<i>Total 1983</i> \bar{x} (%)
Dental treatment need in combination with behavioral management problems *	46 (10-73)	46
Traumatic injuries	14 (4-29)	19
Medically compromised children	10 (0-52)	4
Disturbances in dental development	6 (0-23)	8
Disturbances in eruption	5 (0-31)	6
High caries activity, extensive decay	5 (0-24)	5
Diseases of the pulp and/or alveolar bone	3 (0-10)	2
Diseases of the soft tissues excluding gingivitis and periodontitis	2 (0-7)	2
Occlusal disturbances including anomalies in the craniofacial complex	2 (0-4)	2
Disturbances in occlusion	1 (0-4)	1
Gingivitis and periodontitis	1 (0-3)	1
Diverse, e.g., age determinations	5 (0-25)	4

* See Table 2.

Table 2. Distribution of diagnoses in patients referred for dental treatment need in combination with behavior management problems

<i>Reason for Referral</i>	\bar{x} (%)	<i>SD</i>
High caries activity, extensive decay	73	0.7
Diseases of the pulp and/or alveolar bone	14	2.5
Traumatic injuries	6	2.1
Occlusal disturbances	5	0.7
Disturbances in dental development	1	0.7
Medically compromised children	1	2.1

satisfactorily by the general dentist. The reason for referral to the specialist clinic was uncontrolled disease progression combined with behavioral problems. The dentists in the PDS may refer these patients too late, when extensive decay already has developed or when these children already have extensive decay when first seen at the PDS clinic.

Table 1 shows a large interclinic variation in distribution of diagnoses. Clinics attached to hospitals treat proportionately more handicapped and medically compromised children and provide oral care for hospitalized children⁶. Fewer referrals of children with behavioral management problems tend to occur in areas where the specialist clinic is well established in terms of referral capacity and continuing education of general den-

tists⁷. The most striking change in the reasons for referral is in the number of referrals of handicapped and medically compromised children, which has doubled since 1983. The number of children referred for traumatic injuries has decreased due to improved attention at the local PDS clinics.

Working Schedule

Sixty-nine per cent of the specialists' working hours are spent on clinical treatment (Table 3, next page). Because of the large number of referrals, clinical services are given priority in most clinics. Time is not allocated for continuing education of dentists in the PDS or for research and development. As can

be seen in Table 4 (next page), most specialists report that because of inadequate resources they cannot cover the full range of specialist responsibilities as defined in the specialist investigation⁸. Specialists increasingly demand a reduction in chairside time and a greater commitment to education such as training general PDS dentists and research and development.

Research and Development (R&D)

Research was undertaken at 24 of 38 clinics, mainly in the fields of epidemiology, progression and prediction of dental caries, dental materials, medically compromised children, and traumatic injuries to the teeth. Specialists devote only 2% of their working hours to R & D. Most of the research is conducted at the university departments and the large specialist centers, while specialists at small clinics have no time scheduled for R & D.

Continuing Education

Specialists in all fields of dentistry in Sweden are involved in continuing education programs for general PDS dentists. Approximately 10% of specialist time is committed to education. All 38 clinics are involved in continuing education of general PDS dentists in the form of visits to the PDS clinics and supervised treatment by general dentists at the specialist clinics and

Table 3. Distribution of specialists' working hours during 1989

Activity	Actual 1989 (N = 32) \bar{x} (%)	Optimal* 1989 (N = 32) \bar{x} (%)
	Treatment of patients	69
Consultations at a public dental service clinic	—	—
Supervision of general dentists attached to clinic	11	21
Continuing education	—	—
Specialist's own education	8	10
Research	2	8
Administration (not related to patients)	8	3
Community dentistry	2	4

courses. Thirty per cent of the clinics report that they meet all general dentists in the area at least once or more a year. Demand is great for courses in behavioral management techniques, premedication and sedation, traumatic injuries, and management of children with high caries risk.

Discussion

Major changes in dentistry in Sweden in the near future also will affect pediatric dentistry as a specialty. With increased continuing education the general dentist will manage some patients currently referred to specialists, such as those with traumatic injuries and behavioral management problems. No indications suggest that the demand for specialist services in pediatric dentistry will decrease in the near future, but marked changes are predicted in the type of cases referred and the range of specialist services.

The decrease in caries prevalence during the last decade often is expressed in terms of mean values and mean treatment times, but a group of children (approximately 10%) with rapid disease progression shows little improvement. This group includes children from socially disadvantaged families and immigrant children. There are no indications that treatment need in this group will decrease.

With their interdisciplinary profile, specialists in pediatric dentistry are in close contact with child health centers,

departments of pediatrics, child psychiatry, and child rehabilitation clinics. The need for dental treatment in handicapped and medically compromised children is expected to increase. Advances in pediatrics will increase the number of children who survive life-threatening conditions, such as malignant diseases, cardiac diseases, and chronic juvenile arthritis. Oral manifestations of the disease itself or oral complications associated with treatment will in turn lead to an increased need for dental care. The specialist has a key role in developing appropriate dental care programs for these patients in close collaboration with the medical team.

Rapid advances in dentistry will accelerate creation of regional coordinating dental centers for diagnosis and treatment planning of rare oral diseases and/or anomalies, such as amelogenesis and dentinogenesis imperfecta.

Table 4. Capacity of current manpower resources in specialist clinics to fulfill prescribed specialist duties

Responsibilities	Number of Clinics (N = 35*)		
	Entirely	Partly	Not
1. Comprehensive diagnosis and treatment of referred patients from dentists of the PDS, departments of pediatrics and child psychiatry and other institutions	20	14	1
2. Monitoring prevalence and extent of developmental disturbances and dental diseases among children in the area	4	20	11
3. Recognition of risk groups (handicap, medically compromised, social handicap)	5	24	6
4. Community dentistry	8	20	7
5. Advisor and supervisor in pediatric dentistry questions	15	18	2
6. Continuing education of the dental team	10	22	3
7. Continuing pediatric dentistry education of medical personnel	4	15	16
8. Advisor in questions concerning regional organization of pediatric dentistry	10	19	6

* University clinics excluded.

Specialists in pediatric dentistry should have scientific training, which is essential for professionals responsible for critical evaluation of scientific developments and initiation and organization of research and development projects. Supervision of scientific projects should be the responsibility of the dental faculties or postgraduate training centers.

Future dental care of children and adolescents will involve all members of the dental team. Changing roles, with increased delegation to dental auxiliaries, will increase the demand for continuing education for all members of the dental team. The pediatric dentist is an important resource in these educational activities.

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Dentistry to become more specialized

Today's dentist will be tomorrow's "oral physician," according to an official of the World Health Organization. He predicted that by the year 2025, dentists will provide much broader health service and will be more focused than today on precision prosthetics, orthodontics, complex surgery and oral medicine.