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Specialist paediatric dentistry in Sweden 2008 – a 25-year perspective

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Background. Paediatric dentistry in Sweden has been surveyed four times over the past 25 years. During this period postgraduate training, dental health, and the organization of child dental care have changed considerably.

Aim. To investigate services provided by specialists in paediatric dentistry in Sweden in 2008, and to compare with data from previous surveys.

Design. The same questionnaire was sent to all 30 specialist paediatric dental clinics in Sweden that had been used in previous surveys. Comparisons were made with data from 1983, 1989, 1996 and 2003.

Results. Despite an unchanged number of specialists (N = 81 in 2008), the number of referrals had increased by 16% since 2003 and by almost 50% since 1983. There was greater variation in reasons for referrals. The main reason was still dental anxiety/behaviour management problems in combination with dental treatment needs (27%), followed by medical conditions/disability (18%), and high caries activity (15%). The use of different techniques for conscious sedation as well as general anaesthesia had also increased.

Conclusions. The referrals to paediatric dentistry continue to increase, leading to a heavy work load for the same number of specialists. Thus, the need for more paediatric dentists remains.

Introduction

Sweden has more than two million inhabitants 19 years old or younger (equivalent to more than 23% of the population). The country has eight recognized odontological specialities – paediatric dentistry, orthodontics, oral and maxillofacial surgery, prosthodontics, endodontics, periodontology, radiology and stomatognatic physiology. Paediatric dentistry was recognized as a speciality in 1963, and specialists in paediatric dentistry are integrated into the dental care system for children and adolescents. The training to become specialist has varied, but since 1993, there is requirement of a minimum of 2 years in general practice before a 3-year postgraduate training programme at a recognized postgraduate training clinic. The specialist is then approved by the National Board of Health and Welfare[1]. There are a limited number of positions for postgraduate training, and the positions are appointed according to formal merits. Thus, in order to qualify for postgraduate training, the dentist has to present a record of several years in general practice as well as merits from theoretical courses applicable to paediatric dentistry.

The Swedish Society of Paediatric Dentistry (SSPD) has conducted repeated surveys regarding specialist paediatric dental services on four occasions since 1983[2–5]. Results from these surveys show an increase in referrals, especially for medically compromised children/children with disabilities as well as for children with uncontrolled caries development, whereas the

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referrals of patients with traumatic dental injuries have decreased. The largest group of referrals constituted children with dental anxiety/behaviour management problems (DA/BMP) in combination with dental treatment needs (37% in 2003)[5].

Since 1974 all children and adolescents up to the age of 19 have been entitled to comprehensive dental care on a regular basis and free of charge, including specialist treatment from paediatric dentists, orthodontists etc. Since a few years back the patients and their parents can chose if they prefer to see a dentist in the public dental service (PDS) or in private practice (PP), and the number of patients seen by PP has increased. Yet, the majority of children and adolescents (approximately 85%) see dentists in the PDS. The general dental care for children is subsidised by the county using a capitation system where the same sum of money is paid regardless of whether the child/adolescent sees PP or PDS dentist. In 2008 amount was approximately SEK 1000 (approximately EUR 100) per child listed at the clinic. Sweden is divided into 21 regions or counties, and all specialist paediatric dentistry is carried out at regional/county level and within the PDS. This is finances within the counties by a set budget, often in combination with a fee for service like system where the county reimburses depending on type and quantity of dental treatment carried out at the specialist clinic. In addition to the PDS specialists, there are paediatric dentists employed at the four universities with dentistry programmes (Umeå, Stockholm, Göteborg and Malmö). Two of the universities (Umeå and Göteborg) have a system where the regional PDS is responsible for all dental care delivered in conjunction with the undergraduate and/or postgraduate training of dentists, and thus specialists working in the clinic are mainly employed by the PDS.

The oral and dental health of children and adolescents has improved over the years. Official data from the National Board of Health and Welfare describe an increase in the proportion of caries-free 12-year-olds, from 22% in 1985 to 61% in 2000. Yet, at the latest report this figure had declined to 58% in 2005[6]. Parallel data on mean DFMT (number of decayed, filled, or missed teeth) values for the same age group were reported as 3.1 in 1985, which dropped significantly to 1.4 in 1995, and then levelled out to 1.0 in both 2000 and 2005. Yet, calculation of significant caries index (SiC index) clearly indicates that there is an increase in polarization with regard to dental health. For 12-year-olds the SiC index had increased from 2.62 in 2001 to 2.87 in 2005[6]. As national data are based on manifest caries reaching dentine, these do not give the full picture. Surveys from different regions show a more complex picture and there appears to be great variations in dental health depending on age and socio-economic factors[7,8].

Save the Children Sweden produces statistics on the child and adolescent population living in poverty, and in their report for 2007 they stated that 12% of the young population lived under such conditions. This figure has been stable since the turn of the 21st century. The report also stated that almost 25% of the child population had immigrant background, an increase in recent years[9].

Treatment strategies for dental care have changed quite dramatically since the 1980s. Today, the recall system for children is individualized and not all children will see the dental team on a yearly basis. Instead, intervals of 18 or even 24 months are becoming increasingly common especially in areas where the child population has good dental health. At the same time dental hygienists are seeing more of the recall patients and a great deal of effort is being put into preventive strategies, foremost population based strategies for fluoride application, etc. Dentists still see patients in defined age groups and at certain intervals, and are also responsible for treatment planning and all invasive treatments.

It is likely that these kinds of circumstances not only influence the child population's oral health but also affect referral patterns to specialist paediatric dental treatment. Therefore the first aim of this study was to survey services provided by specialists in paediatric dentistry in Sweden during 2008. A second aim was to compare the results with the previous surveys from 1983, 1989, 1996 and 2003.

Materials and methods

A web-based survey was sent to all 30 specialist paediatric dentistry clinics in Sweden (in 17 of 21 counties) by the SSPD. The survey consisted of 30 questions. These were the same questions that were answered in all previous surveys since 1983, plus 10 new questions that were added in the survey in 2003. The questions concern the number of specialists, type of patients referred, distribution of working hours and also open questions concerning the speciality and the future. One clinic (representing one county) could not provide any information except the position and age of the paediatric dentist. Thus, full answers were received for 29 clinics (25 PDS clinic units and 4 universities). Data were compared with results from the surveys in 1983[2], 1989[3], 1996[4], and 2003[5]. Data in Tables and Figure for 1983, 1989, 1996, and 2003 are based on previously published data, and totalled percentage may diverge from 100 as the figures may have been rounded up in the original publications.

Results

Numbers of specialists in paediatric dentistry

Table 1 displays the number of paediatric dentists 1983–2008. The 2008 survey revealed 81 (65 women and 16 men) specialists in paediatric dentistry aged 31–72 years (mean 52.5; SD 8.9), employed at 30 clinics (universities and PDS clinics). There were fewer clinics in 2008 than before, owing to merging of a number of PDS clinics. Seventeen of 21 counties had specialist clinics for paediatric dentistry, in all 64 positions at 25 PDS clinics. The positions at the PDS clinics were held by 73 specialists (61 women, 12 men) with a mean age of 52.1 years (SD 9.2; range 31–72). Yet, owing to part time working, the 64 positions were not occupied to 100%. Totalling the working percentage for all positions showed that 60.6 positions were occupied, whereas approximately 3.5 positions were vacant. In the 2003 survey the corresponding figures were 74 specialists in the PDS with a mean age of 54.5 years. Among the paediatric dentists in PDS, 62% were over 50 in 2008 as compared with 69% in 2003, and 60% in 1996. The corresponding figures for paediatric dentist under 40 were 14% in 2008, 4% in 2003, and 6% in 1996. In 2008, there were 20 positions for postgraduate training in paediatric dentistry held by 16 women and 4 men aged 27–48 years (mean 37.3; SD 6.3). The four counties with no positions for specialists in paediatric dentistry had a total number of 139,592 children and adolescents aged 0–19 years, corresponding to 6.3% of the total child population. On the remaining 17 counties with specialists, there were 2,044,218 children and adolescents 0 to 19 years old, and the number of positions corresponded to 31,941 children per specialist paediatric dentist position (Table 1).

Number of children treated

The number of referrals had increased again in the 2008 survey (data from 29 of 30 clinics), and the clinics received a total of 15,792 referrals, an increase of more than 16% since 2003, and nearly 50% since 1983 (Table 2). The number of referrals corresponded to 0.8% of the child population aged 0–19 years in the counties with specialists, as compared

Table 1. Number of paediatric dentists (PD) and number of children per specialist in 1983, 1989, 1996, 2003 and 2008.

Number of	1983	1989	1996*	2003	2008**
PD at PDS clinics and universities	63	85	89	81	81
Positions at PDS clinics	ni	ni	63.5	61.5	64
Postgraduate students	21	ni	8.5	20	20
Children 0 to 19 years old per PD position in PDS	ni	38,000	37,000	32,916	31,941

*Response from 86% of the clinics.
**Thirty clinics.
ni, not investigated.

Table 2. Numbers of patients treated, and flow of patients at specialist paediatric specialist clinics in Sweden 1983, 1989, 1996, 2003 and 2008.

Number of	1983	1989	1996*	2003	2008**
New referrals	10,545	11,288	10,850	13,541	15,792
Treated referred patients (completed referrals)	10,034	11,983	11,408	13,245	14,210
Referred patients under treatment as of 31 December	12,299	8383	8680	9405	10,378
Patients on waiting list as of 31 December	ni	1606	1488	2857	2149
Patients receiving all treatment at specialist clinic	1227	5423	ni	6772	7063
Patients age 0–19 treated	24,216	25,789	ni	29,422	31,651

*Response from 86% of the clinics.
**Twenty-nine of 30 clinics.
ni, not investigated.

Table 3. Age distribution of children and adolescents referred (% of all referrals) 1983, 1989, 1996, 2003 and 2008.

Age (years)	1983	1989	1996*	2003	2008**
0–2	6	7	46***	6	8
3–6	37	38		32	27
7–12	50****	48****	48****	38	35
13–16				17	19
17–19	8	6	6	7	10

*Response from 86% of the clinics.
**Twenty-nine of 30 clinics.
***0–6 years.
****7–16 years.

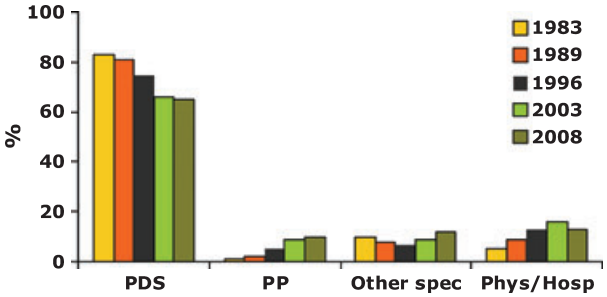

Fig. 1. Distribution of referrals by remitter (in percent of total number of referrals) in 1983, 1989, 1996, 2003 and 2008. PDS, general practitioner in the Public Dental Service; PP, private practitioner; Other spec, other odontological specialist; Phys/Hosp, physician or hospital.

with 0.6% in 2003. The total number of patients treated by paediatric dentists corresponded to 1.6% of the same population. This is an increase compared with 2003 (1.3%) and 1989 (0.7%). The number of patients on the waiting list had decreased, whereas the number of patients receiving all treatment at the specialist clinics had increased. The mean time from referral to first visit was 5.2 months (SD 3.6; range 1–20), and for referrals with high priority 1.4 months (1.3; range 0–5). These waiting times were shorter than in 2003, when the corresponding figures were 7.0 and 1.6 months, respectively.

The age distribution of patients has been quite stable over time, although there was a trend towards more referrals of teenagers in the 2008 survey (Table 3). Figure 1 shows the origin of referrals. The figures for 2008 were similar to those for 2003. The majority of referrals came from general practitioners in the PDS. An increase was seen in the proportion referrals from other dental specialists, whereas there was a decrease in the proportion of referrals from physicians and hospitals as compared with 2003.

As can be seen in Table 4, there were some changes in the distribution of main diagnoses as compared with 2003. Dental treatment need in combination with dental anxiety/behaviour management problems (DA/BMP) was still the most frequent reason for referral but had continued to decline from 46% in the 1980s and 37% in 2003, to 27% in 2008. Comparing with data from 2003, there was also a decline in referrals regarding medically compromised children/children with disabilities (18% in 2008), whereas disturbances in tooth eruption had increased (10% in 2008) (Table 4).

Use of general anaesthesia and sedation

The number of patients treated under general anaesthesia (GA) continued to increase (Table 5). All treatment under GA is carried out in hospitals. In 2008, a total of 3210

Table 4. Distribution of main diagnosis in referred patients (% of all referrals) 1983, 1989, 1996, 2003, and 2008.

Reason for referral	1983	1989	1996*	2003	2008**
Dental treatment need in combination with DA/BMP	46	46	40	37	27
Medically compromised	6	10	16	22	18
High caries activity	5	5	12	14	15
Disturbances in dental development	8	6	6	6	7
Disturbances in tooth eruption	6	5	7	6	10
Traumatic injuries	15	14	10	5	7
Diseases of the pulp and/or alveolar bone	3	3	16***	2.5	5
Occlusal disturbances/anomalies of craniofacial complex	2	2	–	2.5	3
Diseases of the soft tissues excluding gingivitis and periodontitis	3	2	–	1.5	2
Temporomandibular joint diseases	1	1	–	0.5	2
Gingivitis and periodontitis	1	1	–	0.5	2
Other	4	5	–	2.5	2

*Response from 86% of the clinics.
**Twenty-nine of 30 clinics.
***Refers to all diagnoses below in the table totalled.

Table 5. Use of sedation and general anaesthesia at specialist paediatric dentistry clinics in 1983, 1989, 1996, 2003 and 2008.

Mode of treatment	1983	1989	1996*	2003	2008**
General anaesthesia					
No. of patients	1215	1220	2108	3088	3210
Nitrous oxide sedation					
No. of patients	1143	2290	2852	3431	3608
Rectal/oral/nasal sedation					
No. of patients	ni	ni	1302	1518	3455
No. of treatments	ni	ni	1488	3148	4961

*Response from 86% of the clinics.
**Twenty-nine of 30 clinics.
ni, not investigated.

patients (29 of 30 clinics) were treated under GA, equivalent to 10% of all patients treated by paediatric dentists that year. The mean time on a waiting list for treatment under GA was 3.2 months (SD 2.1; range 1–12), and for treatment with high priority 1.0 month (SD 0.6; range 0–3). This was a shortening of waiting times as compared with 2003, when the corresponding figures were 4.0 and 1.3 months, respectively. Nine of 25 PDS specialist clinics stated that they had sufficient access to general anaesthesia. The use of sedation and nitrous oxide oxygen sedation showed some increase as well (Table 5).

Working schedule

Swedish specialists in paediatric dentistry spent most of their working time on clinical treatment (65%), followed by running continuing educational activities (6%), their own education (6%), and research (5%) (Table 6). There were minor changes as compared with 2003, mainly a decline in clinical treatment, and an increase in working time spent on consultations at PDS clinics and supervision of general practitioners attached to the specialist clinic. Overall the distribution of working schedules has been stable since 1983.

Twenty-one of 25 clinics participated in continuing education of general practitioners, and nine of the clinics had educational activities targeting different medical health professionals. There were also courses directed towards dentists enrolled in postgraduate training, and to parents/users. All specialist clinics had an established network of cooperation with other dental specialities as well as with paediatricians, child psychiatry departments, and paediatric departments in hospitals.

The survey also contained open ended questions in which the clinics were encouraged to describe the work of specialists today as compared with 5 years ago, and the challenges for paediatric dentistry as a speciality today and for the future. The majority of answers concerned worry, mainly heavy work loads both in clinical work and administrative duties. There were several comments giving the impression that referrals had more extensive treatment needs today, young

Table 6. Distribution of specialists' working hours (%) during 1983, 1989, 1996, 2003 and 2008 (specialist paediatric dentistry clinics in PDS).

Activity Number of clinics	1983 34	1989 32	1996 31	2003 31	2008 25
Treatment of patients	68	69	71	68	65
Consultations at PDS clinic	4	11*	ni	2	3
Supervision of general dentist attached to the specialist clinic	3	ni	ni	2	5
Community dentistry	3	2	ni	2	1
Administration (not related to patients)	10	8	ni	ni	ni
Continuing education	5	ni	ni	7	6
Specialist's own education	4	8	5	4.5	6
Research	3	2	5	5.5	5
Other	5	ni	ni	9	9

*Consultations, supervision and continuing education.
ni, not investigated.

children with severe dental caries problems, and more patients with social problems. Many clinics reported of an increase in administrative obligations such as more meetings within the PDS organizations, more responsibilities on the clinic level for quality insurance, staff matters, etc. Several answers related to the need for more positions for paediatric dentists, or concerns about succession when older colleagues retired. Positive answers were also given, although they were in the minority and usually concerned that the new ways of organizing the clinic had been successful, for example, efforts in continuing education for general practitioners or consultations at PDS clinics had led to fewer and more structured referrals.

Discussion

This study has shown persistence in the increase in referrals for specialist paediatric dental treatment as well as in the numbers of patients treated by specialists over the past 25 years. The increase of referrals may have many reasons but is essentially a result of attempts to offer every child the dental treatment her/his condition requires. If this need cannot be achieved within general dentistry the child will be referred for specialist care. Modes of treatment have changed, illustrated by a rise in dental treatment under general anaesthesia and different types of sedation. Despite these changes, the number of specialists in paediatric dentistry has been stable for the last 20 years.

This is the fifth survey of paediatric dentistry in Sweden during a 25-year period conducted by SSPD, and it provides unique information about the development of the speciality in a country. Such repeated surveys are important in order to evaluate dental care for children and adolescents, and in the work of planning for the future. The high response rate, where all clinics with active paediatric dentists provided detailed information about their clinics and activities for 2008, suggests that the surveys are also of importance to the individual clinics as a source of data, or for benchmarking activities, etc.

The results of these series of surveys, and certainly the last one from 2008, show that specialist paediatric dentistry is constantly developing. There has been an enormous increase in productivity, more referrals, more patients treated, and at the same time there are indications of higher treatment needs in the patients taken care of, etc. Still, the number of paediatric dentists has been relatively constant during this period of time, as have the working hours devoted to clinical treatment. Apparently the organization of paediatric dentistry has improved and become more efficient. The mechanisms are not fully explored in the surveys, but the changes in modes of treatments, such as much more use of general anaesthesia and sedation techniques, more consultations and more frequently having general practitioners practicing for a period of time at the specialist clinics might have had an impact here. Changes regarding auxiliary personnel,

including more dental hygienists, and dental nurses trained in chair-side prevention and introduction of patients, have also helped to improve productivity. The question, however, is: is it really possible to go even further in this direction? How much more patient treatment, referrals, etc., can the paediatric dentists manage without risking either the good quality of the dental care provided or their own health?

Looking at the country from a geographical point of view there is a real problem today of too few trained specialists. Many patients live in counties without access to specialized paediatric dentistry. Many specialists work alone without any other paediatric dentist colleagues in their county, which is of course a very vulnerable situation. Illness, parental leave, etc., may result in a specialist clinic without supervision with paediatric dentist competency. This is not acceptable from the point of view of patient safety. The fact that a high proportion of the Swedish specialist paediatric dentists do not work full time could be interpreted as an indication of a heavy work load, leading to a perceived need for fewer working hours and more time off. This assumption was supported in answers to the open ended questions many of which described a more constrained working situation. Based on this information and the fact that the mean age of paediatric dentists is over 50, it is only fair to appeal for more postgraduate education and more paediatric dentists if Sweden is to be able to maintain its reputation of high quality dental care for children and adolescents.

Sweden has reported relatively good oral/dental health in the child population for many years[6]. Bearing this in mind, it might appear ambiguous that parallel to improvements in oral health, there is also an increase in referrals to specialists in paediatric dentistry. Yet, it is important first to acknowledge that paediatric dentistry means much more than treating dental caries in patients not willing or able to cooperate. Today, specialists in paediatric dentistry have the highest competency regarding dental care for children and adolescents. The UN Convention on the Rights of the Child states in Article 3 'Best interests of the child' that 'States Parties shall ensure that the institutions, services and facilities responsible for the care or protection of children shall conform with the standards established by competent authorities, particularly in the areas of safety, health, in the number and suitability of their staff, as well as competent supervision'[10]. This is an important aspect of the work of paediatric dentists. The specialist is important in order to ensure high quality care for the young patients in dentistry, to provide continuing education for all dental heath care professionals working with children and adolescents, and to make sure that the child's perspective is considered when planning and evaluating dental care. With specialists, the level of knowledge and interest in child dental care will evolve, which may lead to greater insights into the complexity of child oral health. It is highly plausible that some of the increase in referrals actually reflects recognition by general practitioners, physicians, etc., that there are many problems that need the service of paediatric dentists. This could be one explanation for the shift in reasons for referrals.

The most common reason for referrals was still dental anxiety or behaviour management problems in combination with need for dental treatment. Yet, as compared with 25 years ago, or with 2003, this group of referrals has decreased. When making this comparison, the huge increase in referrals over the same period must be born in mind. Thus, the actual numbers of referrals owing to DA/BMP has fluctuated with the lowest number in 2008 (approximately 4300) and the highest in 1989 (around 5200 referrals). Accordingly, the number of DA/BMP referrals in 2008 was 14% lower as compared with 1983, 19% lower than in 1989, and 15% lower than in the 2003 survey. The occurrence of DA/BMP is probably quite constant in the child population[11]. Still, it is likely that fewer patients are referred because of DA/BMP today. One reason could be better capacity and knowledge among general practitioners about how to handle these patients. Furthermore, the use of sedation (mainly midazolam) is widespread in general dentistry in the PDS. Paediatric dentists have also devoted a great deal of effort

to providing consultation and training concerning management of these groups of patients. Possibly, most patients referred today for DA/BMP have additional odontological problems and extensive treatment needs, mainly dental caries, or more complex problems such as neuropsychiatric disorders, etc.[12]. This complexity in dental treatment needs could be one reason for the high number of dental treatments under general anaesthesia. Yet, there are no follow-up studies on how patients with DA/BMP are taken care from a population-based point of view, so we do not know from what level patients are referred. There is no knowledge about how general practitioners treat anxious or uncooperative children or about whether the treatment/referral depends on what their dental problems are, for instance caries. From a psychological point of view, it is important that children receive adequate help and treatment to overcome problems related to DA/BMP. It would be discouraging if patients were not referred until they had extensive unmet needs for dental treatment. This is an area for future research.

At the same time as the use of sedation is likely to have increased within general dentistry (specialist paediatric dentists have played an important role in providing training in sedation for general practitioners) this study reported a substantial increase in use of sedation among specialists. An important and plausible reason for this is the access to more reliable sedation drugs and also a more generous attitude using sedation during surgery, extractions, and other complicated treatments.

The increase found in referrals owing to disturbances in tooth eruption was unexpected. The reason is not known, and should be further investigated. It is possible that these patients were not initially identified correctly within general dentistry. This is a potential risk, especially as the recall intervals have been extended and patients are not always examined by dentists. The reported increase in referrals owing to disturbances in tooth eruption may also be spotted in other parts of the most recent survey. It is probable that many of these referrals came from other dental specialists, mainly orthodontists. Frequent clinical problems in this group are ectopic eruption of canines needing surgical exposure, impacted teeth, etc., and many of the patients are teenagers. Owing to the relatively good oral health in the Swedish child population, many patients requiring these kinds of treatment have no previous experience of dental treatment, such as filling therapy. Having to undergo a surgical procedure implies increased levels of stress in these otherwise healthy patients. Thus specialist dental care is also needed in terms of training, sedation or general anaesthesia to manage treatment needs.

While official data in the 1980s and early 1990s reported that around 85% of the child population received comprehensive dental treatment every year, and more than 95% were seen on a once every 2 years basis, the situation is quite different today. Data are no longer compiled at national level and the organization differs between the counties. Some counties urge all children are examined by dentists at specific ages, while others advocate more individually tailored dental care, and reports on the proportions of children and adolescents who have dental appointments each year vary from less than 70% to over 80% in different counties. In the light of this decline in dental appointments and dental examinations this kind of survey is even more important as referrals to specialist dental care are an important indicator of the quality of dental care for children and adolescents.

The decline in 2008 regarding referrals of medically compromised children/children with disabilities was unexpected, as these groups of patients have increased in numbers owing to more advanced medical technologies for both diagnosing and treating various conditions. These patients are likely to be more vulnerable in relation to all medical and dental health care. For many patients, such a diagnosis implies numerous appointments with many different heath care professionals and there is a potential risk that the oral health issues will be neglected or forgotten for these patients[13,14]. In the 2008 survey there was also a decline in referrals from medical doctors, which makes the finding of fewer referrals even more alarming. In order

to promote oral health, children with complex medical conditions must be identified at an early age and referred to a specialist in paediatric dentistry for examination and treatment planning.

The series of repeated surveys of specialist paediatric dental care Sweden provides essential information about referral systems and working conditions, and is, thus an important tool in ensuring quality in dental care for children and adolescents at a national level. The surveys not only describe the picture at the time of the individual surveys but also enable us to identify issues that could be early signs of systematic changes in dental care for the young population. These systematic changes could be either good or questionable, and in the latter case it is important to further investigate matters. This study, for example, has identified three main groups that are referred to specialist in paediatric dentistry. The reasons for this distribution are not known, why it is fair to suggest a need for more knowledge concerning how children with DA/BMP are taken care of, how disturbances in tooth eruption is diagnosed, and how good dental care is provided for children and adolescents with medical conditions or disabilities. When further investigating these issues, it is important also to evaluate the need for children and adolescents to see a dentist, and how quality can be improved in dental care for children regardless of whether it is carried out by general practitioners or specialists in paediatric dentistry.

What this paper adds

- Knowledge about how the speciality of paediatric dentistry has developed in Sweden over a 25-year period.
- Referrals to paediatric dentists continue to increase and there is an increase of 16% in 5 years.
- There have been some changes in the panorama of referrals, but dental anxiety and behaviour management problems remain the most common reasons for referrals.

Why this paper is important to paediatric dentists

- It provides knowledge about how the speciality has developed over time, which is essential for both evaluation of the service provided, and for the future planning of dental care for children and adolescents.

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