Developments in Oral Health Policy in the Nordic Countries Since 1990

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Purpose: There is a number of systems for the provision of oral health care, one of which is the Nordic model of centrally planned oral health care provision. This model has historically been firmly based on the concept of a welfare state in which there is universal entitlement to services and mutual responsibility and agreement to financing them. This study reports and analyses oral health care provision systems and developments in oral health policy in the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) since 1990.

Material and Methods: Descriptions of and data on the oral health care provision systems in the Nordic countries were obtained from the Chief Dental Officers of the five countries, and contemporary scientific literature was appraised using cross-case analyses to identify generalisable features.

Results: It was found that in many respects the system in Iceland did not follow the 'Nordic' pattern. In the other four countries, tax-financed public dental services employing salaried dentists were complemented by publicly subsidised private services. Additional, totally private services were also available to a variable extent. Recently, the availabilty of publicly subsidised oral health care has been extended to cover wider groups of the total population in Finland and Sweden and, to a smaller extent, in Denmark. Concepts from market-driven care models have been introduced. In all five countries, relative to the national populations and other parts of the world, there were high numbers of dentists, dental hygienists and technicians. Access to oral health care services was good and utilisation rates generally high. In spite of anticipated problems with increasing health care costs, more public funds have recently been invested in oral health care in three of the five countries.

Conclusion: The essential principles of the Nordic model for the delivery of community services, including oral health care, i.e. universal availability, high quality, finance through taxation and public provision, were still adhered to in spite of attempts at privatisation during the 1990 s. It appeared that, in general, the populations of the Nordic countries still believed that there was a need for health and oral health care to be paid for from public funds.

Key words: health policy, Nordic countries, oral health care, public, private, reform

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Systems for the finance and organisation of general health care in the European Union (EU) member states have their roots in national, historical, political and socio-economical traditions. The

five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) are culturally and ethnically rather similar. For nearly 50 years they have had a common labour market, enabling free movement from country to country. They have followed the 'welfare state model' to finance education, health care and social services through general and/or local taxation and guarantee social welfare through transfer of income from the more affluent to the less affluent via pensions, unemployment benefits, supplementary benefits etc (Palme, 1999). At present, with a total population of slightly less than 24 million, the Nordic countries have wealthy market economies with well- developed democratic and judicial systems that can sustain this approach. Typical features of the 'Nordic model' (Palme, 1999; Kautto et al 2001) are:

- universal public services, such as education and health, often provided free of charge and available to the whole population
- social welfare services that cover people of all ages from welfare clinics for under-two-year-olds to old peoples' homes
- eligibility based partly on rights related to citizenship (pension schemes, supplementary benefits) and partly to earnings (employee pensions and earning-related benefits)
- equity between men and women (average male and female pay are virtually equal).

The concept of common access to health care in the Nordic countries derives from the idea that all citizens are entitled to care on equal terms and that care should be provided according to needs. It presupposes mutual responsibility and a mutually agreed financing. There is considerable governmental involvement at both central and local level in the delivery of education, health services, social services and also oral health care.

At the end of the 20th century, global market forces became increasingly active in health care. There were calls for changes to revitalise and develop health services in the welfare states of the industrialised world. Reforms were made in many European countries (Saltman and Figueras, 1997) aimed at controlling constantly rising costs arising from higher demands from ageing populations and increasingly expensive medical technologies and pharmaceuticals. There have also been reforms in oral health care. The key words have been privatisation, public-private partnership and greater customer responsibility (Holst et al 2001; Widström et al 2001; Abraham et al, 2003; Tiemann et al, 2003).

Against this background, this paper aims to provide an overview of the Nordic oral health care provision model and presents examples of typical features drawn from individual Nordic countries. The paper then considers how the oral health care provision systems in the Nordic countries have developed following the 'privatisation period' of the 1990 s. The authors analyse differences and similarities between the Nordic countries, comment on recent health policy developments in relation to the Nordic model and present future plans. In particular, this paper addresses: the roles of the public oral health services and private care, resource allocation and outcome measures in a health/political perspective.

MATERIALS AND METHODS

All Nordic countries (Denmark, Finland, Iceland, Norway, Sweden) have chief dental officers (CDOs) who work as advisors to the national governments on dental matters. In this paper the information on system of delivery of oral health care services and reforms and regulations in health policy in the individual countries since 1990 was collected from the five CDOs (who are also authors of this paper) in 2003 using a questionnaire with open and half-structured questions. The CDOs were also asked, whenever possible, to give references for their answers.

Numerical data on the extent of services, coverage, benefits, finance and reforms and regulations were collected predominantly from national statistics and government reports or scientific literature. Input (workforce, working sector, costs) and output data (DMFT of 12-year-olds, edentulousness in 65-year-olds, service utilisation figures) from national statistics were also presented. Data were appraised using a comparative case study method and cross case analyses to identify generalisable features.

Policy was defined as the course or general plan of action adopted by a government and reform as making a change to a health care provision system by correcting faults or errors and/or adding new features. The term regulations was taken to mean prescribed rules, authoritative directions and outcomes results or visible effects.

Table 1 Population groups entitled to use the Public Dental Services in the Nordic countries and the proportion of dentists working in the PDS in 2003

Country	Age groups having free care in the PDS	Adults entitled to use the PDS	Proportion of dentists employed in the PDS %
Denmark	0–18	elderly in institutions and dependent elderly in home care	23
Finland	0–17[1)]	free choice between PDS and private care introduced in December 2002	46
Iceland	–	–	0
Norway	0–18	mentally disabled persons, elderly in institutions or subject to home nursing care have free treatment, 19–20 year olds get 75% reduction of fees, people living in remote areas have access but need to pay in full	23
Sweden	0–19	free choice between PDS and private care, all specialist care in PDS	56

[1)] 0–18 until 2002

RESULTS

The cross case analysis yielded the following results:

In Denmark, Finland, Norway and Sweden the Public Dental Service (PDS) provides free dental care for all children (Table 1). Iceland has no PDS. In many areas of Sweden it has been possible for parents to choose between private and public care for their children using dental care cheques (vouchers), and from 2004 these became universally available. In Stockholm, according to statistics collected by the County Council, about 10% of children have taken this opportunity. Also in Denmark, a new law now provides a choice between public and private sector for children's oral health care for parents. Apart from 'routine' care and treatment, orthodontic treatment in the PDS is free of charge in Finland, Denmark and Sweden. In Norway, orthodontics is provided mainly by private practitioners, but fees are subsidised by the state up to 100%, 75% or 40% of the costs depending on the severity of the malocclusion. In Iceland, orthodontic treatments are supported from the national health insurance by a fixed subsidy (EUR 1750) per patient.

The arrangements for various groups of adults to obtain care from the PDS are shown in Table 1. In Denmark, elderly people living in nursing homes, or those with nursing support in their own homes, have been able to obtain oral health care from the PDS since 1994 and in Norway since 1984. In Norway, an interesting variation is that other needy groups – such as those under psychiatric treatment, recipients of social welfare assistance and the unemployed – may be offered free treatment, within officially approved county (local) plans, in the PDS as a result of decisions made locally (Sosial-og helsedirektoratet, 2003).

In Iceland, the public school dental clinics that had been operating since 1922 were all closed in 2002. The school dental clinics subsidised by the state were claimed to create inequity in access between municipalities. The demand for the services from these clinics had also dropped dramatically.

Since the early 1990s, public dental services should have been available in Finland to adults born in 1956 or after. However, in practice, for economic and political reasons, the relevant authorities in most of the bigger cities have restricted use of the PDS to younger age groups, whereas most rural areas offered services to the whole population (Widström et al, 1998). In 2000, government policy was changed. The existing laws prioritising access to oral health care provided by the PDS for young people were abolished and subsidised private services were made available to the whole population. Since December 2002, as in the general health care system, everyone has theoretically

had access to care in the PDS when they need treatment. In practice, emergency care has been universally available to people of all ages but, as the demand has been greater than expected, full care has only been available in some municipalities (Widström et al, 2004).

In Sweden, oral health care from the PDS has always been available to all adults. Since 1974, the dental health insurance with funds derived from general taxation has covered a proportion of the cost of treatment, irrespective of whether provided by public or private sector dentists. In the early years the level of subsidy was generous. A decline in government finances made it necessary to modify subsidies and the dental insurance system was increasingly focused on granting support to expensive treatments for a small proportion of the population. This resulted in lower uptake of regular primary dental care (Statens offentliga utredningar, 1998). During the 1990s, several government task force groups were set up to prepare for a total revision of the economic support policy for oral health care and to change the priority to elderly people and high-need groups. However, due to lack of political consensus the only changes that resulted were cuts in the levels of benefits. The reform of dental care subsidies, which came into force on 1 January 1999, aimed again to promote the dental health of the whole population. The Swedish public dental insurance therefore offered financial support to all adults for primary dental care (at the level of 30% of the cost of care) with additional subsidies for certain groups of elderly people, those with chronic diseases and disabilities. Within the public dental insurance scheme all types of treatment were subsidised, if they were necessary to achieve acceptable oral health from a functional and aesthetic point of view. An expert's assessment on the appropriateness of a treatment plan has always been a prerequisite for the refund of fees for expensive treatments and is included in the National Social Insurance Board's routines when handling pre-treatment dentists' requests for refund for major prosthetic treatments. Since 1999, patient fees have no longer been regulated by the government. The public dental insurance system was reformed again in 2002. This introduced protection against high costs for those aged 65 years or older, and covered prosthetic treatments except for some expensive materials. As a result, Swedish residents over 65 years of age no longer paid more than EUR 850 for any prosthetic treatment. In addition, to reinforce the focus of dental insurance on primary dental care, subsidies for examinations, preventive measures, endodontics, extractions and fillings were increased (Statens Offentliga utredningar, 2002).

A further interesting feature in Sweden is that since 1999 a free outreach system has been available from the PDS. This system actively seeks out those in need of oral health care who have been unable to access it. Health visitors identify these patients, and they are then subsequently visited by health and oral health care workers (Statens offentliga utredningar, 2002).

In all Nordic countries, supplementary social benefits can be claimed if a patient has difficulties in paying for the cost of dental treatment. Throughout the five countries, highly specialised oral health care including maxillo-facial surgery is increasingly being provided in bigger hospitals and paid for in the same way as medical care. This also applies to certain diseases, rare conditions, trauma, handicaps and complications following radiation therapy.

Private Care

In Denmark, most adults use private oral health care services. Part of their costs are refunded by the public health insurance scheme financed by the government out of general taxation (Table 2). Under an agreement between the Danish Dental Association and the National Health Service the regulations include subsidies for examinations, prophylactic and periodontal treatment, fillings, endodontic treatment, extractions and surgical procedures. The refund rates vary from 30% to 65% of the negotiated fixed prices depending on patient's age and the type of treatment. There are no reimbursements or fixed prices for prosthetic treatment.

In Finland, private oral health care has been subsidised through a public insurance scheme since 1986, initially for 19- to 25-year-olds, subsequently for those born in 1956 and later, and from 2002, for all age groups. Prosthetic treatment is reimbursed only for World War II veterans (a small group). Finnish dentists set their own fee levels. However, reimbursements from public funds are based on a fixed price schedule.

In Iceland, the national health insurance system reimburses 75% of the cost of basic treatments for children (using the public fee schedule, which is lower than free-market private fees), with the ex-

Table 2 Publicly subsidised private dental care in the Nordic countries, populations entitled to use it and treatments subsidised in 2003

Country	Tax-financed public health insurance scheme	Coverage	Treatments Covered
Denmark	yes	all adults	basic treatments[1]
Finland	yes	all adults (world war II veterans)	basic treatments[1] (even prosthetic treatment)
Iceland	yes	0–18 year olds long-term patients aged 67 and older special needs patients	basic treatments " removable prosthetics "
Norway	limited	certain groups	specialist treatments, oral surgery
Sweden	yes	all adults	basic treatments, prosthetic and orthodontic treatment within the high-cost protection[2]

[1] basic treatments: no prosthetic or orthodontic treatment
[2] for persons aged 65 and older 100% of the charge above EUR 850 will be covered for prosthetics, eg. crowns, bridges and implants. The cost of some material must be paid out of the pocket.

ception of gold crowns, bridges and orthodontics. Special needs groups and pensioners also have their costs covered in full or in part (Table 2). Removable, but not fixed, prostheses are covered. Implants may be partially covered in special cases.

In Norway, there is no general reimbursement of the costs of private dental care from public funds. However, the costs of specialist care, e.g. periodontal treatment, oral surgery and recently rehabilitation after tooth loss due to periodontal disease, are partly refunded. In Sweden, subsidies for the refund of fees paid by adults are the same for treatment obtained from both the private sector and the PDS.

Approximately 1.5 million Danes have an additional private dental insurance, partly to complement payment for treatments covered by the public insurance and partly to cover dental costs not subsidised by it. In Norway, a private dental insurance was introduced in 1996 without success. In the other countries there are no private dental insurances.

Resource Allocation

The ratios of population per dentist in all the Nordic countries were rather similar (Table 3). There were bigger differences in the population per dental technician ratios than population per dentist ratios. In Denmark about 30% and in Finland 40% of the technicians were clinical dental technicians. The population per dental hygienist ratio was lowest in Sweden and highest in Iceland. The proportion of female dentists was relatively high, in comparison with the Mean for the European Union in 2000 (Eaton, 2002). In Denmark it was 51%, Finland 66%, Iceland 28%, Norway 35% and Sweden 56%. Part-time working was reported as rather common in all five countries. Dentists were educated at a total of 11 dental schools: two in Denmark, two in Finland, one in Iceland, two in Norway and four in Sweden.

With the exception of Finland, about 8% of the GNP was used on health care in the Nordic countries in 2000 (WHO, 2003). The percentage of GNP used for dentistry was lowest in Denmark and highest in Sweden (Table 4). In monetary terms the cost of the PDS in Denmark was EUR 116 million in 2001. Reimbursements from the Public Health Insurance amounted to EUR 81 million, whereas patients paid about EUR 325 million. In Finland, the total spend on oral health care increased from EUR 463 million in 1992 to EUR 589 million in 2000, with 43% spent in the PDS and the rest in the private sector. A further rise to EUR 690

Table 3 Categories and numbers of dental personnel in the Nordic countries per populations

Country	Population (million)	Active[1]			Population		
		Dentists[1]	Technicians	Hygienists	per active dentists	per technician	per dental hygienists
Denmark[2]	5.3	4884	1600	1032	1085	3313	5136
Finland[5]	5.2	4458	863	1141	1068	6032	4562
Iceland[4]	0.3	285	75	27	994	3778	10495
Norway	4.5	4006	393	844	1118	11450	5306
Sweden[3]	8.9	7594	1350	2540	1170	6593	3504

1 = pension age varies between 63–70 years in the individual countries
2 = in 1999
3 = in 2002
4 = 2003
5 = 2002

Table 4 Proportions of GNP spent on health care and oral health care, total expenditure and cost per capita on oral health care in the Nordic countries in 2000

Country	% GNP spent on health care	% GNP spent on oral health care	Total cost EUR million	Cost per capita EUR
Denmark	8.3	0.33	522[1]	99
Finland	6.6	0.45	589	113
Iceland	8.9	0.65[2]	49[2,3]	164
Norway	7.8	0.39	588	131
Sweden	8.4	0.74	1585	178

[1] 2001
[2] Estimate based on national household surveys
[3] Public funding EUR 11.3 million

occurred in 2002 (Stakes, 2003). In Iceland, the total expenditure on oral health from both private and public sources was EUR 49.1 million in year 2000 (Widström and Eaton, 2004). Of this 77% (EUR 37.8 million) was from private sources and the rest from public sources. In Norway, EUR 175 million was spent in the PDS and refunds from the National Insurance Administration for adults and orthodontic treatment for children were EUR 38 million. Out of pocket spending on dental care for adults was estimated to be EUR 375 million (Widström and Eaton, 2004).

In 2002, in Sweden, public dental health insurance for adults was estimated to cost the state EUR 210 million. The county council's contribution to children's oral health care was estimated to be EUR 395 million. Thus, the total contribution from public funds was EUR 605 million. Patient's fees amount to EUR 980 million (Riksförsäkringsverket, 2003; Landstingsförbundet, 2003). Per capita spending on oral health care was highest in Sweden and lowest in Denmark (Table 4).

Only recently, and particularly in Sweden, there have been attempts to reduce the costs of oral health care. Previous changes to regulations during 1990s and the latest reform of the national dental insurance system in 2002 aimed to improve cost-efficiency (Statens offentliga utredningar, 2002). However, in the first year (Statens offentliga utredningar, 2002) higher subsidies for prosthetic treatment for the elderly, resulted in far higher costs; EUR 219 million rather than the estimated EUR 33

Table 5 Most recent percentages of caries free* (not visible caries) and mean national DMFT-index values for 12-year-olds and percentages of edentulous elderly in the Nordic countries

Country	Year	12 year olds		Edentulous
		DMFT = 0 %	DMTF mean	65 years or older %
Denmark	2002	61	0.88	36[1]
Finland	2000	38	1.2	40 (e)
Iceland	1996	48	1.5	55 (e)[2]
Norway	2000	48	1.5	35 (e)
Sweden	2002	63	1.1	17

e = estimate
[1] Petersen et al 2003
[2] Sigurgeirsdottir 2002

million (Riksförsäkringsverket, 2003). Introduction of free pricing of dental fees in both sectors resulted in an average price increase in the PDS of 40% between 1998 and 2002 according to the Federation of County Councils (Landstingsförbundet, 2003). The National Social Insurance Board (Riksförsäkringsverket, 2003) found that private care providers followed the public price increases in their local areas although their prices were generally at a higher level. More recently a purchaser provider split has been introduced in the PDS in Sweden to improve cost efficiency; however there is still little information of the results of this change.

Evolution of Dental Health and Utilisation of Services

Over the past four decades there has been a general improvement in the oral health of those living in the Nordic countries. The mean national DMFT scores for 12 year olds shown in Table 5 are low (Sundhedsstyrelsen, 2002; Stakes, 2000; Eliasson, 1998; Statens helsetilsyn, 2001; Socialstyrelsen, 2003). The proportion of edentulous over 65-year-olds was lowest in Sweden (Table 2; Statistics Sweden, 2001). In all five countries edentulousness in old age is expected to decrease rapidly.

At present, in Denmark, between 95% and 100% of children under 18 years are seen regularly in the PDS and have individual (personal) recall intervals (Sundhedsstyrelsen, 2002). In Norway 93% of the children are seen by the PDS. However, as some have personal recall intervals of more than one year, 68% made visits in 2001 (Social- og helsedirektoratet, 2003). In Finland and in Sweden about 80% of those entitled to free care are seen by the PDS during a calendar year (Stakes, 2003; Socialstyrelsen, 2002). The 'recall intervals' in Sweden are about 18 months. In Iceland, the attendance rates are lower and in 2001/2002, 64% of children aged 0–18 years and 79% of children aged four to 18 years had a dental examination in an 18-month period (Ágústsdóttir 2001, Ágústsdóttir et al 2002).

As far as those aged between 45 and 55 years were concerned, 90% visited a dentist within the past year in Denmark. After the age of 55 years the frequency of visits declined, and 46% of the elderly (> 75 years) used dental services during the past five years. Over the past 10–15 years there has been a decline in regular attendance among young adults, whereas there have been increased attendance rates by older adults and elderly persons. In Finland, a recent survey indicated that about 64% of working aged adults and 50% of pensioners claimed to have been to a dentist within the past year (Kansanterveyslaitos, 2003). No data are available about the use of dental services by adults in Iceland. In 1995, in Norway, a survey indicated that between 70-80% of the adult population visited a dentist during the previous year (Holst and Grytten, 1997). In Sweden, 87% of the adults were regular dental attenders (Statistics Sweden, 2001). Of the 45- to 64-years-olds, 93% claimed that they had visited a dentist within the past two years. In the age group of 65-74-year-olds the cor-

responding figure was 83%. Amongst the elderly (> 74 years of age) 22% had not used the dental services for the past five years (Statistics Sweden, 2001).

Evaluating Developments in Oral Health Care Provision

Equal access to dental care and equal quality of treatment independent of peoples' social background and ability to pay has been and still is one of the most important goals in health policy. To meet these goals, in the geographically relatively large, unevenly populated Nordic countries, the aim has been to secure the provision of health care through a PDS-network covering even sparsely populated areas. However, due to financial constraints and the non-life-threatening nature of oral diseases, the volume and role of private services has been greater in oral health care than in general (primary) health care. In practice the Nordic oral health care system is a mixture of public services, publicly supported private services and totally private services. Differences between individual countries indicate that the role of public services is greater in Sweden and Finland than in Norway and Denmark, or in Iceland, which does not follow the Nordic model in this respect.

In all the Nordic countries, the oral health care systems have for a long time concentrated investment on children and special needs groups. Since the 1990s, the elderly have also become a priority group. As summarised in Table 6, both Finland and Sweden have undertaken large-scale oral health care reforms and increased resources to subsidise oral health care services for adults with aim of improving access and 'affordable quality' of services. In Finland this political decision clearly reflects higher demands for dental care by the first generation of middle-aged people who have retained the majority of their natural teeth and improvements in the national economy.

In Sweden the latest reform was probably more of a compromise and attempted to maintain oral health improvements that had occurred in the population and to lower the costs in the long run by more precise targeting of the benefits to needy groups. However, in Sweden the long tradition of conscious public investments in oral health care and the considerable improvements in oral health, which most lay people and practitioners relate to frequent utilisation of dental services and the existence of the general dental insurance, showed that more radical changes were politically difficult to make. Politicians intrinsically are better at giving things to people than they are taking them away (Battistella, 1993).

Interestingly, some ascendancy of 'market values' in the design of health reform strategies can be seen – in Denmark and Sweden, where the previously sacrosanct public oral health care of children has been opened to private competition. The introduction of a formal provider/purchaser split in the Swedish PDS and an informal one in the Finnish PDS reflect changes in ideology. Finally, the extended use of private dental insurances in Denmark and Norway (although less successful in the latter) shows that politicians have been listening to the claims that market-driven health care models should produce services more efficiency, force prices down and improve quality levels.

DISCUSSION

Universal coverage, the high proportion of female dentists and part-time working partly explain the relatively high numbers of dentists and dental auxiliaries and higher costs of oral health care in the Nordic countries in comparison with other old EU/EEA states (Widström and Eaton, 2004). The high utilisation level of services has led to relatively high costs. Nevertheless, apart from in Sweden, the cost of subsidising oral health care with public funds has not been a major issue. At present, Finland is increasing public funding of oral health care considerably. It is also interesting that, in spite of an improved economy, there has not been heavy public pressure in Norway towards supporting adult dental care with public funding, as occurs in neighbouring countries. Lack of interest among the powerful provider interest groups has been claimed to be one of the reasons for this (Holst, 2004).

There are high taxation levels in the Nordic countries. This factor helps to explain the willingness and ability of governments to fund social, health and oral health services. Thus, practically all children are automatically recalled for dental examinations and necessary treatments (including orthodontics) at individualised intervals related to treatment need. Preventive care is universally available for children. University education as well as school ed-

Table 6 Developments in oral health care provision in the Nordic countries since 1990

Scope	Country	Public Dental Service	Subsidised Private Services	Private Care
Population coverage and range of services	SF	Enlarged for adults	Enlarged for adults	Prosthetics services left outside support
	S	Increased subsidy of basic care and prosthetic care for 65 +	Increased subsidy of basic care and prosthetic care for 65 +	
	S	Outreach activities introduced		
	DK, N	Enlarged services for elderly and special needs groups and easier access to specialist treatment		
	ICELAND			Children's dental care fully privatised
	DK, S			Private care made a choice in children's dental care
Financing and fees	SF	Increased funding	Increased funding	
	S	Increased funding Higher patient fees due to free prising	Increased funding Higher patient fees due to free prising	
	DK, N			Private insurance introduced
Management and regulations	S	Purchaser-provider split introduced		
	SF	Free prising Purchaser-provider split made possible		
	N, SF	Local decision making increased in the PDS		
Government strategies	SF	Public private competition introduced		
	S	Public private competition in place		
	N, SF, S	Increased education of dentists		
	DK, N, S	Plans to increase dental hygienist education		
Public behaviour	DK, N, S	Use of services generally on a high level		
	SF, S	Increased demands Queues in the PDS	Increased demands	
	ICELAND	No information available		

ucation is free in all the Nordic countries. In Finland and Sweden all children have free meals at school. The result is that recently presented ideas of health promotion through community actions have long ago been put into practice by the educational and health care systems in these countries (Sheiham,

2000). A disadvantage is a certain amount of over-treatment of healthy children. However, even in the Nordic countries some differences in oral health and utilisation of services exist. They appear to be related to levels of education and income (Hjern et al, 2001; Poutanen and Widström, 2001; Socialstyrelsen, 2002). Reducing inequalities is an important goal in all Nordic health policy programmes. In Sweden and Denmark, much attention has been paid to outreach activities to enable people unable to visit dentists because of age, physical isolation, cultural dissonance or inability to pay to access oral health care (Socialstyrelsen, 2003).

There have been discussions in all Nordic countries about the future profile of their oral health care workforces. The discussions have frequently been on numbers of dentists and hygienists. Concentration of dentists in the bigger cities and vacancies in the PDS in rural areas are a concern. In Finland, not unexpectedly, the recent reform resulted in long waiting lists for treatment by the PDS in some bigger urban areas where publicly funded adult care had previously been strictly limited. Notwithstanding the fact that a number of municipalities have increased the use of dental auxiliaries (Widström et al, 2004), the increased demands for treatment by the PDS have put pressure on politicians to increase numbers of dentists. Thus a decision was made to reopen the dental school in Turku. Norway has also decided to open a new dental school, in the northern part of the country, at Tromso, in an effort to improve access to dental care in remote areas (Social- og helsedirektoratet, 2003; Helsedepartementet, 2003). In addition, a working group appointed by the Ministry of Health has recommended more extensive use of oral hygienists. Better utilisation of the skills mix of dental teams consisting of dentists, hygienists and dental assistants has been suggested in Sweden, too. It is hoped that dental hygienists in the future will have a considerably broader role than before. The number of dental hygienists is expected to increase by some 1500 by the year 2010. In Denmark a reduction in the number of dentists from 5000, at present, to 4160 in 2015 and an increase in the number of dental hygienists from 1470 to 2600 (Sundhedsstyrelsen, 2001) has been planned. A migration of dentists may start in 2004 now that the Baltic states have joined the EU. It is possible that a number may be recruited to the Nordic countries to help overcome the shortage of dentists in remote areas.

Although oral health and performance data collection is generally good, and data on oral health care provision and costs in the PDS and public insurance system are reported annually to central authorities in all Nordic countries, there is a need for better assessment of health care technology in all five countries to improve the cost-effectiveness of the services. As far as caries in children and edentulousness in adults are concerned, the data show that there has been a considerable improvement in the oral health of the Nordic population over the past 30 years. Although no single factor is likely to have contributed to this improvement, apart from the now almost universal use of fluoride-containing toothpaste, the Nordic system for the provision of oral health care through both a managed and largely targeted public service and 'free-trade' private sector is believed to have played a part. As such, the Nordic system for the provision of oral health care should be of interest to all health care planners. Furthermore, its success has been apparent to both the Nordic general public and to politicians. As a result, at present there is little evidence of any political will to reduce the extent of, or funding for, oral health care provision. However, changed economic and political conditions and unemployment levels have created a situation in which this could happen during future welfare reforms when demand for oral health care provision from the public sector competes with the demands of other health care sectors. Nevertheless it seems unlikely that there would be sufficient political will to revise the basic principles of the 'Nordic model', which are firmly ingrained in the hearts, minds and pockets of the population.

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