

Justification for a Public Dental Service: Finnish, Norwegian and Swedish Experiences

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Abstract

Aim: The aim of this survey was to study the rationale for maintaining a public dental service (PDS) in Finland, Norway and Sweden, and to confirm its current responsibilities, resources, leadership, incentives used and desired changes. **Methods:** Postal questionnaires were sent to the chief dental managers in the PDS in Finland (n=30), Norway (n=27) and Sweden (n=26). Data were analysed using statistical software. Chi-square tests were used to compare differences in distribution between groups and Spearman's correlation analysis to study relationships between variables. The statistical significance level was set at 5%. **Results:** The response rate was 76.6%. All but two respondents were in favour of maintaining the PDS because of its responsibility for populations, ability to increase equity in access, and its beneficial influence on private practice. Most Swedish respondents (70.4%) were satisfied with the financial resources allocated to the PDS compared with only 22-23% of the Norwegian and Finnish respondents ($P<0.001$). In spite of this, the majority of the respondents felt that their opportunities to lead were good. Good salary with bonuses together with good work environment and the possibility of further education and skill development were the most usual incentives used in the PDS. A shortage of dentists and difficulties in recruiting them, especially in rural and remote areas, had become a big problem in all three countries. **Conclusions:** Overall, the Nordic chief dental managers who responded to this survey supported the continuing provision of oral health care by PDS. They felt that the professional staff of the PDS should be financially rewarded for productivity through an individualised incentive scheme and that more clinical work should be shared between the members of the dental team.

Key Words: Health Services Research, Nordic Countries, Public Dental Service, Justification, Incentives, Obstacles

Introduction

The oral health care provision system in the Nordic countries (Finland, Denmark, Norway and Sweden) differs greatly from those in other European Union (EU) member states. Typically, in the Nordic countries there is a large public sector, staffed by salaried personnel, and covering even sparsely populated areas. Regular free examinations and any necessary care for all children and adolescents are provided by the public dental service (PDS), as well as oral health care for some special needs groups. This total coverage for these groups is unique in Europe [1]. In addition, the PDS offers treatment to a number of other adults. It is financed by general or local taxation and patient fees. The state has a central role in its goal setting, guidance and supervision. With the exception of the United Kingdom (UK), most other EU countries provide oral health care either largely or totally within the private sector. In a number of countries, private care is subsidised through statutory health insurance

schemes; insurance schemes negotiate fees with dental associations and the role of the state is weak [1].

The general goals of the oral health care provision systems in the Nordic countries originate from the Nordic welfare model [2,3,4]. There is a principle that the population should have access to all areas of primary health care, including necessary dental care, at an affordable price. Care should be based on scientific evidence and provided efficiently. In practice, most of these requirements apply primarily to the public sector although there is a fairly large private sector that complements the PDS.

At the end of the 20th century, global market forces became active in health care. Reforms made in many European countries aimed at controlling costs arising from higher demands from ageing populations and increasingly expensive medical technologies [5]. As regards dental care, adults are seen to be retaining their own teeth to a much greater extent than in earlier generations [6,7] and innovations in prosthetic and aesthetic dentistry have great-

ly increased the demands for care. The key word in many recent oral health care reforms in Europe has been privatisation and this has taken place in Iceland, the Netherlands, and the new Eastern European EU member states. Market-driven health care models were believed to produce services more efficiently, to force prices down, and to improve quality. In the Nordic countries, the PDS has so far not been seriously threatened [8]. However, harmonisation pressures from the EU, together with improvements in dental health, professional interests and political changes, have created a situation where privatisation of dental care could happen during future health care reforms [9]. Against this background, there is a need to investigate the role of the public sector in dental care in the Nordic countries and to ask the question: Is it still needed?

There are some differences in organisation of the PDS between the three countries studied. In Finland and in Sweden, all age groups are entitled to use the PDS. In Norway, services are restricted to those between 0 and 20 years of age, the mentally disabled, the elderly living in institutions or subject to home nursing, and some smaller special needs groups. In Finland, the PDS is run by a large number of municipalities ($n=251$), in Norway and Sweden by a few larger regional units, known as county councils. The Finnish municipalities employ chief dentists responsible for the leadership and management of the local PDS units. In Norway and Sweden, the county councils' chief dental managers have regional leadership and the local PDS units have leading dentists responsible for their management.

Aims

The aims of this survey were to study reasons for maintaining the PDS in Finland, Norway and Sweden, its current responsibilities, resources, leadership and management, the incentives used to motivate its staff, and desired changes in the organisation of services and incentive structures.

Methods

Data were collected by postal questionnaires sent to all regional chief dental managers in Norway (19) and Sweden (26) and in Finland to the chief dentists of the 30 biggest municipal PDS units. The regional managers in Norway and Sweden were asked to provide the names and addresses of two unit managers in their counties. One such unit manager per region was then sent the same questionnaire. In Finland, the municipal chief dentists represented both

administration and local units.

A piloted questionnaire (in Norwegian, Swedish and Finnish), consisting of both open and structured questions, was tested. The final version was seven pages long and was also only in Norwegian, Swedish and Finnish and not in English. It is therefore not published in this paper. However, a copy of the questionnaire in any of the three Nordic languages can be obtained from the corresponding author. Data were analysed using statistical software (SPSS; SPSS Inc, Chicago, USA). Chi-square tests were used to compare differences in distribution between groups and Spearman's correlation analysis to study relationships between variables. The statistical significance level was set at 5%.

As all questionnaires were handled anonymously and all those who received questionnaires were under no obligation to return them, it was felt unnecessary to seek ethical approval for the study.

Results

After two reminders, responses were received from 27 chief dentists in Finland, 15 chief dental managers representing regional and 12 representing local administration from Norway, and 16 administrators and 12 local managers from Sweden.

This gave a total of 82 respondents, of whom 50 were male and 32 female, giving a response rate of 76.6%. Forty-eight per cent of the Finnish, 41% of the Norwegian, and 29% of the Swedish respondents were female. In the following paper, all respondents are referred to as chief dental managers.

1. Justification, responsibilities and local goals

Most respondents (97.5%) answered yes to the question "Is there justification for maintaining a public sector in dental care". One Swedish and one Norwegian chief dental manager felt that they could organise corresponding services using the private sector. Reasons to "keep the public sector" (Table 1) were rather similar in all countries and emphasised the public system's responsibilities for populations. Greatest differences were seen in the public sector's perceived influence on private dentists' fees. Most of the Swedish (78.6%), almost half (40.7%) of the Finnish, but only 14.8% of the Norwegian respondents felt that this was an important reason for having a PDS ($P<0.01$).

The next question considered how well the responsibilities of the PDS for given populations

were defined nationally. In all three countries, respondents agreed that the responsibility of organising care for children and youngsters and special needs groups was clearly expressed. Responsibility for adults was least obvious in Norway and applied

to sparsely populated regions only. A smaller percentage of Finnish (26.9%) and Swedish (28.6%) respondents, but no Norwegians, indicated that the public sector was also responsible for socio-economically deprived patient groups (*Figure 1*).

Table 1. Justification for having a public sector in oral health care in Finland, Norway and Sweden according to the chief dental managers of the public dental services (%). It was possible to list several answers to this half-structured question

Reasons given	Finland % (n=27)	Norway % (n=25)	Sweden % (n=28)	Total % (n=80)
The PDS ...				
has population responsibility, guarantees equal access for all	92.6	77.8	96.4	88.8
is responsible for socio-economically deprived groups	51.9	85.2	89.3	76.1
keeps prices down in the private sector	40.7	14.8	78.6	44.9
guarantees equal services in sparsely populated areas	11.1	16.0	14.3	13.8
emphasises a preventive approach to dental diseases	7.4	12.0	7.1	8.8
creates competition between sectors	7.4	0	10.7	6.3
has an important role in setting norms and quality standards in dental care	0	4.0	7.1	3.8

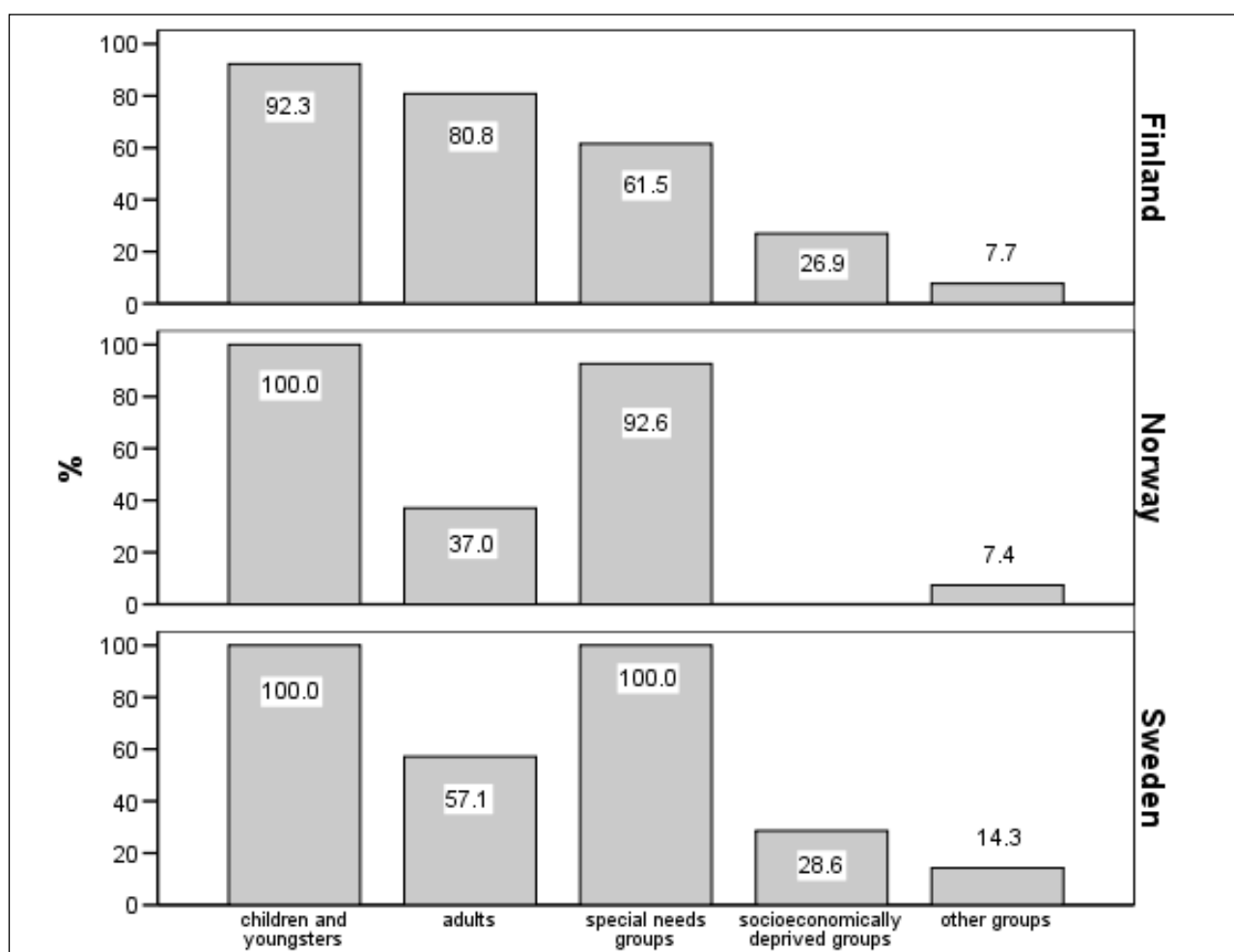


Figure 1. Responsibilities of the public dental service according to the chief dental managers of public dental services in Finland, Norway and Sweden (%).

Table 2. *Factors believed to influence the productivity of dentists in the PDS according to the chief dental managers of the PDS in Finland, Norway and Sweden*

Factors	Finland (n=27) %	Norway (n=27) %	Sweden (n=28) %	All
Remuneration	44.4	74.1	42.9	52.4
Good work environment and sufficient auxiliary staff	66.7	66.7	25.0	52.4
Personal characteristics	33.6	14.8	32.1	26.8
Motivation	33.3	7.41	32.1	24.4
Experience and skills	29.6	11.1	17.9	19.5
Organisation of work, leadership	14.8	24.6	32.1	25.6
Pressures from patients	0	18.5	17.9	12.2

Because the general goals of the public sector in the Nordic countries are set by governments, respondents were asked whether any additional local or regional goals were set in their areas. Answers were provided by 14 (50.0%) Swedish, 10 (37.0%) Finnish, and 8 (29.6%) Norwegian chief dental managers. The local goals in Finland dealt mostly with desired improvements in access to care or emergency services. In Norway, the local goals defined desired oral health improvements in children and detailed various preventive programs to be carried out. In Sweden, cost-effectiveness was a current issue.

2. Resources and perceived powers of leadership

The respondents were asked whether they had enough resources to achieve the goals set by their organisations. Most Swedish respondents (70.4%) were satisfied with their resources, in contrast to only 22.2% of Norwegian and 23.1% of Finnish respondents ($P<0.01$). In Sweden, county councils are free to set the PDS patient fees regionally whereas in Finland and Norway the fees are set by the central government.

Furthermore, in Sweden, almost all leaders (92.9%) considered their mandate to lead their organisations to be good. In Finland and Norway, the corresponding figures were 64.0% and 61.5% respectively ($P<0.05$). A positive correlation was found between perceived powers of leadership and adequacy of resources ($r=0.383$, $P<0.01$).

Just over half of the respondents (62.5% of Norwegians, 50.0% of Finns and 55.6% of Swedes) listed obstacles other than financial resources that frustrated achievement of goals. A shortage of staff (mainly dentists and dental hygienists), difficulties in recruiting them, high attraction of the private sector, high turnover of staff, especially in rural

areas, were the most frequently listed obstacles in all countries. Negative staff attitudes against changes in work routines in combination with rigid professional norms regulating task sharing between dentists, dental hygienists and dental assistants were complained about, especially in Finland and Sweden. A smaller number of the respondents were worried about the appropriateness of dentists' skill-mix in relation to the increasingly complicated treatment needs of many adult patients.

3. Incentives used to facilitate goal achievement

According to the respondents' experience, good salary (preferably combined with some type of bonus pay), closely followed by a good work environment had most influence on the effectiveness and productivity of their dentists (Table 2). In Norway and Sweden, patients were also mentioned as a factor. In all three countries, the PDS dentists (and other personnel groups) received monthly salaries. In Finland, on average, 30.3% of dentists' pay was based on treatments provided (fee for item) and their salary varied from month to month. Most respondents (82.1% in Sweden, 73.1% in Norway, and 64.0% in Finland) reported that they could give their dentists and dental hygienists, and sometimes even dental assistants, smaller individual supplements to their wages based on achieved results or completion of special tasks.

In Finland, where the variable part of the wage was greatest, 85.2% of the leaders believed that their dentists were satisfied with the existing remuneration system. The corresponding number in Sweden was 71.4% and in Norway 34.6% ($P<0.05$). The low level of satisfaction in Norway was explained by considerably higher earnings in the private sector.

The professional incentives used to motivate the staff to work towards the goals set to the PDS were the same in all countries:

1. Good work conditions, atmosphere, and leadership.
2. Good access to further education, possibility to develop skills.
3. Freedom and influence over one's work.
4. Encouragement and acknowledgement.

4. Consequences of the use of economic incentives on treatment decisions

In Sweden, half of the respondents believed that the economic incentives stimulated the development of good teamwork whereas in Finland respondents held the opposite view. The Finnish chief dental managers suspected over- and under-treatment to a greater extent than their colleagues in Norway and Sweden. Dentists' remuneration system was believed to encourage frequent examinations, fillings and other quick treatments and discourage time-consuming root fillings and periodontal treatment. In Norway, 26.1% of the respondents believed that bonuses stimulated treatment of healthy adults and discouraged complicated treatment on special needs patients (*Table 3*). In Sweden, dentists' remuneration was not believed to influence treatment decisions, because bonuses formed a minor part of the dentists' salaries.

5. Changes desired in the PDS

Respondents from all three countries highlighted the need for increased delegation of tasks from dentists to hygienists and dental assistants. Individualised salaries were proposed by a third of the respondents (*Table 4*). With regard to the distribution of tasks between the public and private sectors, most Swedish respondents were content with the present system. In Finland, respondents claimed that a proposed increase in subsidies for private dental fees would hopefully depress the current too high demand for public services. In Norway, most respondents wished that the private sector would take more responsibility for the whole population and not just for selected patients.

Discussion

In most European countries, dental care operates outside mainstream health care systems and the role of private services is more significant than in other areas of health care. There appears to be little understanding of the benefits of public dental services apart from in the sparsely populated Nordic countries and the UK. With the exception of widely reported data on the oral health of children, little information concerning the achievements of the PDS in the Nordic countries is available internationally. Within the Nordic countries, the public health service has been strongly supported by the

Table 3. Chief dental managers' answers to given statements about how the economic incentives used in the PDS can influence the work of dental personnel and treatment provided

Present economic incentives	Finland % (n)	Norway % (n)	Sweden % (n)	All % (n)	P†
Stimulate task sharing between personnel categories and development of new work routines	29.2 (24)	33.3 (27)	53.6 (28)	39.2 (79)	0.262
Enhance the work of the organisation and prevent positive developments	68.0 (25)	30.8 (26)	17.9 (28)	40.0 (79)	0.000***
Influence the amount of treatment provided:					
a) promote over-treatment	38.5 (26)	11.1 (27)	14.8 (27)	21.3 (80)	0.017*
b) promote under-treatment	50.0 (26)	7.7 (26)	22.2 (27)	26.6 (79)	0.005**
Allow dental hygienists to take too much time on individual patients	46.2 (26)	33.3 (27)	48.1 (27)	42.5 (80)	0.815
Influence the choice of therapy:					
a) some treatment items are encouraged	70.4	26.1	4.0	34.7	0.000***
b) some treatments are discouraged	40.7	14.3	0	19.2	0.000***

† Chi-square test was used

*=P<0.05

**=P<0.01

***=P<0.001

Table 4. Suggestions for improvements given by the chief dental managers of the PDS in Finland, Norway and Sweden

	Finland	Norway	Sweden	All
If you had a free hand to choose, which economic incentives would you use to achieve your set goals?	% (n=25)	% (n=25)	% (n=18)	% (n=68)
- Individual payments based on results achieved	28.0	44.0	50.0	35.5
- Higher wages	0	56.0	0	20.5
- Bonuses for the working teams instead of individuals	40.0	16.0	16.7	23.5
- Capitation payment	0	16.0	0	5.8
If you had a free hand to change the distribution of work between the members of your staff, what would you do?	% (n=19)	% (n=25)	% (n=18)	% (n=62)
- Give more tasks to hygienists and dental assistants and increase team work	78.9	36.0	72.2	59.6
- Nothing, current distribution is fine	0	24.0	22.2	16.1
If you had a free hand to influence the distribution of work between the PDS and the private dental services in your area, what would you do?	% (n=23)	% (n=25)	% (n=23)	% (n=71)
- Nothing, current distribution is good	0	16.0	60.9	25.3
- Demand increased societal responsibility from the private sector	13.0	44.0	0	19.7
- Increase the share of public dental care	0	20.0	8.7	10.0
- Increase reimbursement of private dental care	26.1	0	0	8.4
- Introduce private clinics to rural areas	0	0	8.7	2.8

population and by politicians, and the services have slowly but steadily expanded. Finland opened the PDS to the entire population in 2001-2002, Sweden has improved the outreach care among elderly people, and Norway has included alcohol and drug addicts in the special needs groups to be treated in the PDS.

The chief dental managers of the PDS were chosen to evaluate the public service and the appropriateness of policy in their own field of work because they are probably the only people who have a total view of the roles of both the public and the private dental services as well as the treatment needs of the population in their regions. Thus, the results need to be interpreted with some caution. The 30 biggest health centres (covering about 60% of the population) were included in the study in Finland, as large municipal PDS units were believed to be more comparable than smaller units to the health regions in the other two countries.

Respondents from all three countries based the justification for the existence of a public sector in dental care on its responsibility to the population (as opposed to individual patients) and to cater for

socially, economically or medically deprived/at-risk groups. This is in contrast with the private sector, which is free to choose its patients. The PDS was considered to guarantee equal access to oral health services for all members of the population. Interestingly, the existence of a public sector was believed to create competition between the two sectors and to control pricing. Also, in some qualitative aspects the public sector was considered to be a good model for the private sector.

The goals and tasks given to the PDS by the national governments are clearly stated in all three countries. In Norway, one of the wealthiest countries in the world, the population responsibility of the PDS was considerably weaker than in Finland and Sweden. There are probably several explanations for this. Historically, the public service started before Norway became wealthy and it concentrated on children and adolescents. Recently, there has been a big and costly organisational reform in primary health care. Dental professionals have so far been reluctant to promote changes in the existing care provision system [10], and according to a recent policy document, Norwegians are today

wealthy enough to use and pay for private services [3].

The study revealed great differences in the perceived sufficiency of the financial resources of the PDS. Most Swedes were content, in contrast with smaller numbers of colleagues in Finland and Norway. As the Swedes had power over pricing of their services and the prices were allowed to vary between regions, this is understandable. It made the managers less dependent on political will and frequent policy changes. A study comparing total expenditure on dental care between Nordic countries revealed that almost 40% more money was used in Sweden than in Finland and Norway [8], which indicates true differences between the three countries.

Earlier research found that different remuneration systems have different effects on dentists' behaviour [11,12,13,14]. Interestingly, a recent British study recommended that different remuneration systems should be used in the PDS from those in private practice [15]. In the PDS, a fixed salary combined with additional bonuses or fee-for-service combined with capitation was suggested and in private practice only fee-for-service. In this study, economic incentives were believed to be a powerful steering mechanism in the PDS. If the chief dental managers could have a free hand when deciding on the remuneration system, about half of the Norwegian and Swedish respondents would have chosen individual payments based on results instead of the present fixed salaries with or without bonuses. In Finland, where this type of productivity incentive is already used, bonus payments for dental teams instead of individual dentists were suggested.

Little thought has been given to consequences of the provider-oriented incentives on patient selection and treatments in the public sector. Professional ethos and ethics have been thought to guide decision making in the best interest of patients. In Finland, the fee-for-service component in public dentists' remuneration had introduced a clear financial incentive towards choice of economically profitable treatments and avoidance of non-profitable ones. Norwegian respondents had also noticed similar features.

Doctors' work has also been shown to be influenced by non-economic incentives, such as public appreciation, diplomas, feelings of pride, self-respect and self-esteem invoked by performing highly skilled work, learning new tasks, and having

responsibilities [16,17,18,19]. The non-economic incentives used in the PDS in the Nordic countries were very much the same as these. In all three countries, the chief dental managers reported that dentists placed high value on variable and innovative treatments and freedom to apply these in their work as well as being able to participate in courses and education. Llewellyn et al. (1999) [20] suggested that there is an "incentive curve" for doctors comprising financial (monetary) and professional (appreciation, autonomy, responsibility) incentives. If the marginal effect of one incentive decreases, it is (at least in theory) more efficient to use several incentives in parallel rather than just one. It seemed that the respondents in our study did so.

In all three countries, the chief dental managers felt that increased task sharing between personnel groups and improved teamwork was needed in the PDS. This is a strong statement, as the public sectors in these countries already use more hygienists than most other European countries. However, dentists and dental hygienists have expressed a lack of enthusiasm in task sharing [21].

The biggest worry in all three countries was the shortage of dentists. Dentists' interest in working outside big cities and undertaking full-time work seems to have decreased and might become a serious threat to the PDS, especially in remote parts of the countries, in the future. A small number of dentists have been recruited from other EU member states. At present, private practice is more attractive probably because it offers shorter hours, better pay and the opportunity to select patients. Little political consideration has so far been given to the discrepancy in work conditions and terms between sectors.

Conclusion

Overall, the Nordic chief dental managers supported the continuing provision of oral health care by PDS. They felt that the professional staff of the PDS should be financially rewarded for productivity through an individualised incentive scheme and that more clinical work should be shared between the members of the dental team.

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