

# Lead Dentists in the Public Dental Service in Finland during a Major Reform

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## Abstract

**Background:** A major reform of dental care was conducted in Finland in 2001-2002. As a result, care from the Public Dental Service (PDS) was for first time made available to adults born before 1956 and the reimbursement of basic dental care in the private sector by the National Insurance Institution was extended to cover all adult age groups.

**Aim:** To survey how the position and role of the lead dentists in the PDS and their leadership role had changed during the eight years since the reform was introduced.

**Methods:** Data on leadership qualities and styles and proceedings of the implementation process of the reform were collected from the lead PDS dentists (n=161) in 2011 using an e-mailed questionnaire. Comparisons were made with a previous study performed in 2003. The response rates were the same, 73%, in both years. Factor analysis, chi-square and non parametric tests were used in analysis.

**Results:** The number of lead dentists had fallen by 39% as the sizes of the PDS units had increased. Only a third (30%) had applied for the leadership position and 17% were full-time lead dentists (usually in units having 40,000 or more inhabitants). Although most respondents (72%) felt that they were good goal-oriented managers, and almost all (94%) that they were good people-oriented leaders, they felt that a lead dentist's position in the municipal hierarchy had become weaker although the PDS after the reform had much larger population responsibility locally. Most lead dentists, 72%, claimed that they had been forced to work with insufficient staff in relation to the increased demand for care, especially lack of dentists.

**Conclusions:** Being a lead dentist in the PDS continued to be a rather lonely task and attracted male dentists more than female dentists. Over the years the lead dentists' self-confidence in their leadership role had improved but their independent decision-making power had decreased and their position in municipal decision making had stayed weak. Those who had applied for the leading post themselves worked in larger PDS units and had enough leadership education and were most satisfied with their work.

*Key Words: Leadership; Public Dental Service, Lead Dentists, Lead Doctors, Municipal Politicians, Dental Care Reform*

## Introduction

The Finnish health care provision system is for geographical and historical reasons highly decentralized. The land area is huge (total surface area 390,900 square kilometres) and the population (5.4 million) relatively small: on an average 18 inhabitants per square kilometre. Population density varies greatly between the northernmost part, Lapland, where the population density is two per square kilometre, and the southernmost part, Uusimaa province, 170. Thus, organization of health care in a great number of sparsely populated municipalities with long distances to health care centres has been challenging [1]. In the early 1970s, local municipalities were made responsible for organising and running health and social services, with aid from state subsidies and their own local taxation to finance these services for their local populations. Until 1980, Public Dental Services (PDS) were offered only to children and adolescents younger than 18 years of age. From 1980, young adults were successively, age group by age group, at slow rate given access to subsidized care in the Public Dental Service (PDS) or alternatively, when using private care, to reimbursement of basic treatment from the Social Insurance Institution (SII). Other than special groups most adults had to rely on private services (dentists or denturists) for their oral health care and pay for them. About half of the dentists worked as salaried dentists in the PDS and the other half privately. In 2000-2002, the dental care provision system was reformed

and all adults were given access to the PDS. It also became possible for all adults to obtain reimbursement of fees from the SII for basic items of treatment provided under private dental care. Improved oral health, decreasing edentulousness, and greater need and demand for oral health care among adults and the elderly lay behind the reform.

In the local municipalities the health boards are responsible for planning, organizing and evaluating primary health services including dental care. Lead doctors are in charge of the services and under them lead dentists in charge of the local PDS units. When the authors performed a first survey in 2003 [2,3] the lead dentists in the PDS were facing a challenging situation as at that time they had to implement the Dental Care Reform. This challenge was that all the Finnish adult population had suddenly become eligible for care in the PDS. Very soon it became obvious that demand for public dental care by adults had increased more than had been expected, partly because the PDS was less expensive than the private sector even after reimbursements. This led to long waiting lists. Because two of the then four dental schools in Finland has been closed the 1990s, there was also shortage of dentists.

Health care organisations are expert organisations characterized by strong professionalism [4]. The use of clinicians as leaders can be challenging for the organizations because the clinicians often feel independent of their employer [5], responsible to their patients and loyal to their professional

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organizations. Sipilä (1996) suggested that the authority of an expert leader is based on his or her position, competence, seniority and personal authority [5]. Authority is a necessary but often an insufficient part of leadership [6,7] because power is the basic element needed to start and maintain an activity that changes intentions into action [8] especially when reforms, that influence the daily work of the employees, are implemented. The author's first study showed that being a lead dentist in the PDS was a not highly desired job and that most lead dentists (90%) had to treat patients besides working as leaders [2]. It also showed that only a third, 35%, of the lead dentists was formally qualified for leader posts e.g. had specialist education or equivalent. Most lead dentists (66%) had good leadership motivation and a great majority, 88% felt that they were good *people-oriented leaders* and 61% good *goal-oriented managers*. However, in general, the lead dentists considered that their power in municipal decision making was weak [2,3].

A Care Guarantee Act was enacted in 2005. It enabled timeframes for access to first aid and urgent treatment and non-emergency health care, including dental care to be set. The delay for access to routine (non-emergency) dental care was set at a maximum of six months. The length of the waiting lists was monitored by the National Supervisory Authority for Welfare and Health. This created new problems for many PDS units, because of increasing shortage of dental personnel. In 2011, 12.5% (260/2084) of full-time public dentists' posts were without office-holders [9]. Task delegation from dentists to dental hygienists and dental nurses was considered to be an important means to improve efficiency in the PDS. However, it proceeded slowly. In recent years, to improve the capacity of the municipalities to provide the Primary Health Care Services for their ageing populations, the government begun to drive municipal consortia to mergers. In 2003, there were 444 municipalities and in 2011 336 municipalities having the responsibility for organising health care and social services [10]. Thus new challenges for leadership had been created.

### Aim

The aim of this study was to survey how the leadership - from the viewpoint of lead dentists in the PDS - had changed during the eight years since the major Dental Care Reform that gave all adults access to public dental care. It also aimed to investigate how the lead dentists' views on the Dental Care Reform and their own leadership had changed over these years and to compare their answers with those from an earlier study in 2003.

### Methods

The target group was the lead dentists in the municipal PDS units (n=161) in 2011. They were sent a questionnaire consisting of similar questions to those in the first study in 2003 [2]. Ethical permission for the study was given by the Central Ostrobothnia Hospital District. Some new questions on the implementation process of the reform and on other current matters were included in the questionnaire. Both closed and open questions were used, altogether a total of 148 questions in Finnish. For this reason the questionnaire is not presented in this paper. Four options were given to answer closed questions and statements. Two were positive and two

negative. No neutral answer ('cannot say') was possible. Answers assessed as 1-2 on the scale of 1-4 were negative and usually described low, small or bad/poor and answers assessed as 3-4 on the same scale were positive and described as large, great or good.

Responses were transferred to the Predictive Analytics SoftWare (PASW 18) website and Excel 2003 and PASW Statistics 18 were used to analyse the data. Comparisons were made with the results from the previous (2003) study [2]. For analysis both separate variables and sums of variables were used. Sums of variables were formed by factor analysis (Method: Maximum likelihood, Rotation: Varimax) and by using the mean function of SPSS. The reliability of sum variables was assessed using Cronbach's coefficient alpha which is the more reliable the nearer it is to one on a scale 0-1. In the text sum variables have been written in italics (*Table 1*). Where applicable, chi-square and non-parametric tests were used [2]. The PDS units were classified as either small (serving less than 20,000 inhabitants) or large (serving 20,000 inhabitants or more).

## Results

### Respondents

The number of respondents was 117 giving a response rate of 73% (117/161). In 2003, the response rate was the same (194/265). Because of municipal mergers and new PDS co-operation areas formed both the numbers of lead dentists and municipalities had fallen. In 2011, about a third of the respondents -38% (44/117) - had also participated in the 2003 study. In 2011 about half of the lead dentists (47 %; 55/117) worked in small PDS units serving less than 20,000 inhabitants in comparison with 71% (138/194) in 2003 (P<0.001). The mean number of inhabitants per PDS units had increased from 22,000 in 2003 to 34,000 in 2011 (P<0.001). Slightly more than a half of the respondents 61% (71/117; P=0.068) were women (in 2003 50%; 96/192). The average age of the lead dentists had increased and 71% (82/115) were older than 50 years in comparison with 50% (95/192) in 2003 (P<0.001). In both studies, the respondents' average length of service as a lead dentist was the same, 12.5 years.

### Becoming a leader

The proportion of lead dentists having applied for their position as leaders had not changed. Only a third, of the respondents both in 2011 (30%; 34/114) and in 2003 (32%; 57/178) had applied for the lead dentist position in the PDS (P=0.796); the others were actively encouraged by their superiors to take it. In both 2003 and 2011, male dentists had been more eager than their female colleagues to apply for these posts; 44% (20/45) of men and 20% (14/69) of women had done so in 2011 (P<0.01).

### Leadership education

Over the years, a greater proportion of the lead dentists had received leadership education (*Table 2*). In 2011, about half, 54% (63/117) of the respondents were either specialists, or undergoing specialist training, or had various additional leadership education, or other additional academic qualifications compared with 38% (71/185) in 2003 (P<0.01).

**Table 1.** Summation of factors from the questions on characteristics in the questionnaires.

<i>Goal-oriented manager</i> (Cr. alpha 0.744): Innovative; convincing; purposeful/persistent; passive/indolent (as negative); unsure (as negative).
<i>People-oriented leader</i> (Cr. alpha 0,691): just; empathetic/emotionally intelligent; reliable; authoritative (as negative).
<i>Implementation of the reform</i> (Cr. alpha 0.785): How has implementation of the dental reform succeeded in your PDS unit; How has implementation of care guarantee succeeded in your PDS unit (1=very poorly...4=very well, on a scale 1-4).
<i>Work well-being in total</i> (Cr. alpha 0.781): I feel that I succeed as a leader; I feel that I am appreciated as a leader; my own work well-being graded from 4 to 10 (school grades in Finland); I hold up well under pressure; I have energy to learn new things; it is difficult to match working life with private life (as negative); I am often exhausted by my work (as negative); I have enough time to lead; I have to do too much clinical work (as negative); I have to do too many items of secretarial work (as negative); I have enough independent decision-making authority; I have more responsibility than authority (as negative).
<i>Position as a superior</i> 2011 (Cr. alpha 0.430): Subordinates understand the goals imposed by management; I know expectations of my subordinates towards my leadership; my position is conflicting with expectations of subordinates towards my leadership (as negative).
<i>Position as a subordinate</i> 2011 (Cr alpha 0.654): The goals imposed by the uppermost political management are clear; I know the expectations of the uppermost management towards my leadership, position conflicting towards the goals imposed by politicians (as negative).
<i>Municipal co-operation areas and/or municipal mergers</i> (Cr. alpha 0.460); areas of cooperation formed; municipal mergers carried out.
<i>Coping with the director and subordinate role</i> (Cr. alpha 0.643): I often give feedback spontaneously; I give feedback in development conversations; I listen to and support my subordinates; my subordinates are sufficient with my management style; my subordinates support me in management.

**Table 2.** Numbers of lead dentists' basic and additional educations and degrees in 2011 (N=117) and in 2003 (N=194).

Leadership education	Respondents	
	2011 n=117	2003 n=185
Dentist without additional education	54	114
Dentist with additional education	63	71
-Additional basic academic degree	4	0
-Specialist in Dental Public Health	21	40
-Specialist in clinical dental disciplines	8	13
-PhD (in dentistry or health economics)	8	10
-Special Competence in Health Care Management ('old education') for all health care professionals	8	39
-Special Competence in Dental Administration ('new education') for dentists only	28	2
-Vocational Qualification in Management and Leadership ('new education') for all health care professionals	14	0
-Ongoing specialist training	9	0

Leadership training was unevenly distributed and nearly a third of those lead dentists who had extra qualifications had more than one qualification (32%; 43/134). In 2011, the lead dentists in larger PDS units had significantly more leadership training than those in smaller ones (38%; 21/55 vs. 68%; 42/62) ( $P<0.01$ ). About half (53%; 32/60) in large units and 13% (7/53) in small ones had been asked for leadership qualifications when applying for the post ( $P<0.001$ ). The specific requirement was most often for specialist education in Dental Public Health. Leadership qualifications were also required more often in PDS units where big organizational changes had occurred in form of both municipal co-operation areas and municipal mergers, in these 53% (19/36) of the lead dentists reported that leadership qualifications had been important when applying for the post in contrast to 26% (20/77) ( $P<0.01$ ) in units having had no or only smaller changes.

Since the 2003 study formal leadership education for health care personnel (doctors, head nurses etc.) organized originally by the National Board of Health and leading to a 'subspecialty' called 'Special Competence in Health Care Management', had stopped. For dentists, the Finnish Dental Association had started a new two year educational programme to be taken while continuing ordinary work and leading to a competency called 'Special Competence in Dental Administration'. A number of the lead dentists had also participated in new leadership training for all health

care personnel 'Vocational Qualification in Management and Leadership' taking 18 months. This training started after 2003 and was arranged by universities and some private corporations. Fewer lead dentists had the longer three year specialist education in Dental Public Health in 2011 than in 2003 (*Table 2*).

### Lead dentists' satisfaction with their leadership education

A greater proportion of the respondents in 2011 than in 2003 (68% vs. 49%) and of those in larger PDS units than the smaller ones (73% vs. 46%) felt that they had had enough leadership education (*Figure 1*). Furthermore, the respondents who had applied for their leadership posts instead of being persuaded to take it (79% vs. 47%) and the lead dentists with various leadership qualifications, in contrast to those being dentists only (71% vs. 45%), and broken down by gender, men vs. women (65% vs. 48%), were more satisfied with the extent of their leadership education (*Figure 1*). However, in 2011, the male lead dentists, unlike females, were almost as satisfied with their leadership education whether they had a formal additional leadership education or not (*Figure 1*). No statistically significant differences were found between men and women in terms of the extent of leadership training.

### Working time as a lead dentist

In general, the leadership role of lead dentists continued

to be a part-time job. In 2011, 17% (19/111) and in 2003 10% (17/177) of the respondents were full-time leaders and did not work with patients (P=0.069). However, the average percentage of clinical working hours had fallen from 60% in 2003 to 52% in 2011 (P<0.05). Slightly fewer respondents (45%; 52/115) felt that they had to do too much clinical work in relation to administrative tasks than in 2003 (57%; 102/179) (P<0.05). Bigger PDS units required more management and leadership and less clinical work (Table 3 and Figure 2).

Mean percentages of the normal working hours (37 h/week) by size of the PDS unit. P-values were calculated between the size of the unit as an independent variable and management, leadership and treatment of patients as dependent variables.

### Reward of the work and self-perceived leadership qualities

During the eight years since the previous study, career advancement had become more important for the lead dentists. In 2011, almost half (43%; 50/115) of them found it fairly or very important compared with only a quarter (26%; 46/179) in 2003 (P<0.01). Almost all respondents (94%; 108/115) felt that their work was valuable to society and that it was respected. In 2003 the corresponding percentage was 84% (150/179; P<0.001). The vast majority of the lead dentists, 94% (109/116), regarded themselves as fairly or very good people-oriented leaders compared with 88% (162/185) in 2003 (P<0.05). On average two thirds, 72% (83/115) regarded themselves as fairly or very good goal-oriented managers in comparison with 62% (114/185) in 2003 (P<0.05).

### Position as a leader

Membership of the Management Team for Primary Health Care has traditionally been an important channel for lead dentists to make their voices heard in the municipal administration. In 2011, slightly fewer lead dentists, 53% (61/116) had this membership than in 2003 (65%; 123/187); P<0.05). In the same way, the opportunity to participate in the municipal Health Board meetings had marginally decreased: 21% (24/115) in 2011 and 33% (61/185) in 2003 of the lead dentists had the right to participate all meetings they found important (P<0.05). The others could participate by invitation only. Nevertheless, somewhat paradoxically, 70% (79/113) of the lead dentists in 2011 and 64% (119/185) in 2003 stated that the decision-makers seldom or never made decisions about dental care against their opinions (P<0.05). If the lead dentists had no possibility to participate in the Health Board or Managing Team meetings, the best channel to make their voices heard, as reported in 2011 by 29 lead dentists, was through their superiors, usually the lead doctors. Otherwise they had difficulties to influence the course of events.

Over the years, the independent decision-making power of the lead dentists had decreased: 67% (124/184) of the respondents in 2003 and only 20% (22/110) in 2011 reported that they had enough independent decision-making power (P<0.001). Also the same 44 lead dentists who responded to surveys both in 2003 and 2011 felt that their independent decision-making authority had decreased: two thirds (65%; 28/43) in 2003, and quarter (26%; 11/43) in 2011 of them thought that this had happened (P<0.001). The lead dentists

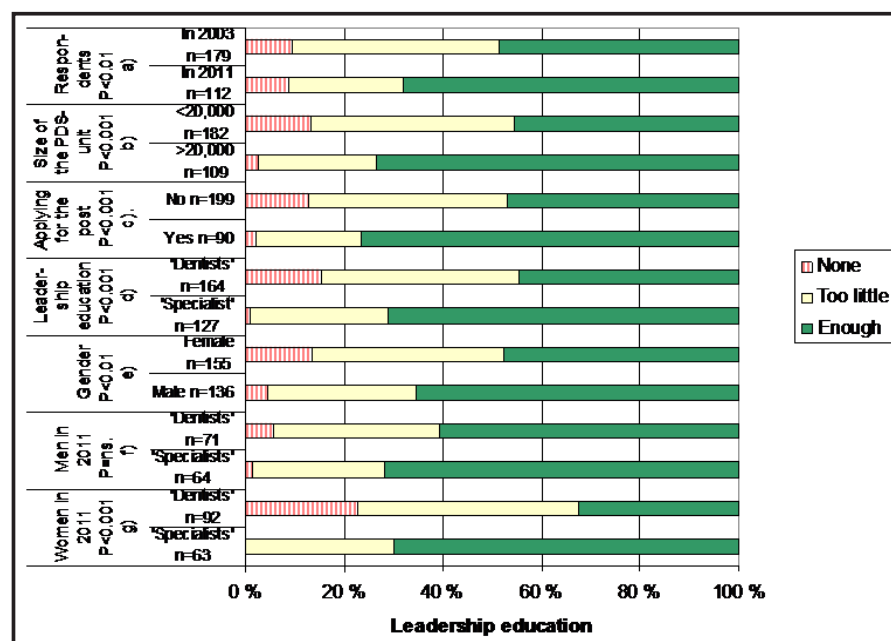


Figure 1: Lead dentists' satisfaction with the leadership education they had  
 a) all respondents in 2003 versus 2011  
 b) "Specialists" in the total material (2003 +2011)  
 c) Female versus male lead dentists in the total material (2003 +2011)  
 d) Dentists versus specialists by gender in 2003 and 2011.  
 "Dentist" = a lead dentist having a basic dental education only, "specialist" = a lead dentist having a specialist degree or some additional formal education including leadership education.

Table 3. Working hours spent on management (issues management), leadership (of people) and clinical tasks by the lead dentists (n=111) in 2011.

Population per PDS-unit	Management mean % of working hours	Leadership mean % of working hours	Treatment of patients mean % of working hours
<20,000	16	10	74
20,000-39,999	29	18	53
40,000-59,999	54	37	8
60,000-99,999	53	41	5
≥100,000	74	23	3
P-value	<0.001	<0.001	p<0.001

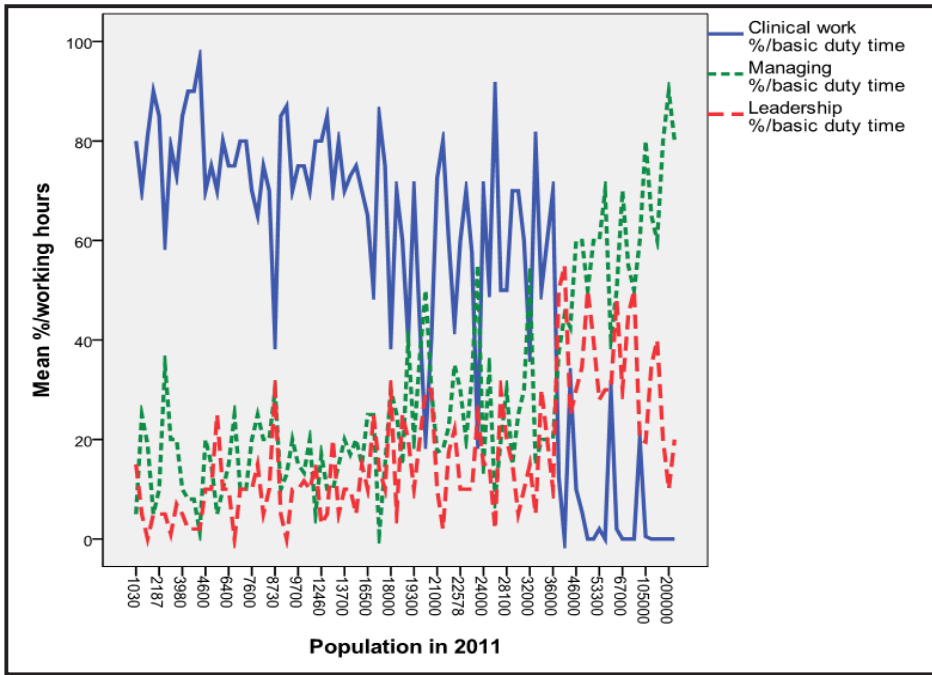


Figure 2. Working hours spent by lead dentists on clinical work, management and leadership in 2011 by size of population per PDS unit.

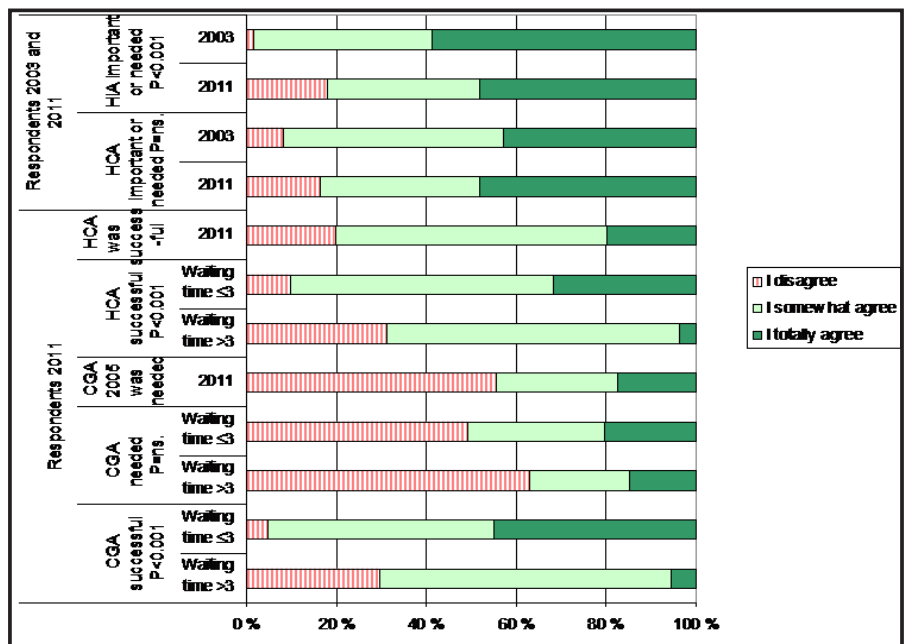


Figure 3. Attitudes of the lead dentists towards changes in the Health Care Act (HCA) and in the Health Insurance Act (HIA) in 2011 and 2003 and towards the Care Guarantee Act CGA in 2011.

also thought that the dental personnel had to some extent lost their influence on decision-making on dental care activities in the years following the reform ( $P < 0.001$ ); 63% (116/184) in 2003 and 40% (46/115) in 2011.

In 2011, slightly less than half 38% (44/116) of the respondents felt that their *Position as a superior* was fairly or very good and 41% (47/115) felt that their *Position as a subordinate* was fairly or very good. There was not much change in this respect; the corresponding figures in 2003 were to *Position as a superior* 40% (71/179) and to *Position as a subordinate* 39% (73/187). They felt, however, that their roles as leaders and subordinates had become more successful because 85% (98/115) in 2011 and 68% (121/179) in 2003 felt that their *Coping with the director and subordinate role* was fairly or very good  $P < 0.05$ ).

### Opinions on the dental care reform and the success of its implementation

In 2011, 48% (56/116) of the lead dentists totally agreed and 35% (41/116) partially agreed that the changes in the Health Care Act - leading to opening the PDS to all adults - had been necessary. As regards the Health Insurance Act (enlargement of reimbursement of basic dental care in the private sector to all adults) the corresponding percentages were 48% (56/116) and 34% (39/116). A much smaller proportion, 18% (20/114) of them totally agreed and 27% (31/114) partially agreed that the Care Guarantee Act had been necessary; slightly more than half (63 persons) found it unnecessary (Figure 3). Length of waiting lists did not influence the respondents' opinion on necessity of the Care Guarantee Act. However, in comparison with leaders in those units where waiting lists were shorter a higher proportion felt

that the Health Care Act and the Care Guarantee Act had not been successful. In 2011, 52% (22/42) of the respondents who had also answered in 2003 and 40% (29/72) of the totally new respondents regarded Care Guarantee Act as an important change ( $P < 0.05$ ).

*Implementation of the reform* had been easier in small as opposed to large PDS units: 88% (46/55) of the respondents in small units and 74% (46/62) in large ones thought that *Implementation of the reform* had been fairly or very successful ( $P < 0.05$ ). However, most respondents, 72% (73/102) thought that shortage of competent applicants to fill posts, especially dentists, had made the implementation more difficult.

### Work well-being

Between 2003 and 2011, lead dentists' *Work well-being in total* had not changed significantly: only 31% (36/117) in 2011 and 30% (56/186) in 2003 of them all gave positive responses (points 3-4 on a scale 1-4) to this question. Nevertheless, the lead dentists felt that the general work atmosphere had improved: 96% (111/116) of them in 2011 and 81% (146/180) in 2003 thought that the general atmosphere in their unit was fairly or very good ( $P < 0.001$ ).

### Discussion

The response rate in this study, 73%, can be considered moderately good as it can be presumed that many lead dentists were tired of completing evaluation surveys after the biggest reform in dental care in three decades. The most usual cause for non-participation was that a number of PDS units had, because of municipal mergers, not yet appointed a lead dentist or the post was held by a temporary deputy who felt that he or she could not answer the questionnaire.

During the eight years since 2003, the total number of lead dentists fell by 39% as the size of the PDS units increased due to municipal mergers or the formation bigger health care consortiums of municipalities. Cutting down the numbers of small municipalities and instead building fewer and bigger municipalities is high on the political agenda in Finland today [11]. In addition, the present Government Programme aims to divide the country into larger health care districts to take over the responsibility of organizing and financing health care and social services from the individual municipalities. This change is motivated by a number of factors including the ageing population and increasing costs of specialized health care. Although the average size of the PDS units had grown significantly, the amount of full-time leaders has not increased in the same proportion. The current study showed that lead dentists worked full-time as leaders when the PDS unit had 40,000 or more inhabitants. In units smaller than 16,000 inhabitants the lead dentists spent only about 20% of their working time on leadership and management, which is natural for units having a small staff. Overall, the average clinical working time of the lead dentists decreased slightly as the average size of the units increased from about 22,000 to 34,000. Thus, the lead dentists were responsible for larger units in 2011 than in 2003.

The average age of the respondents had increased significantly. Half of the respondents in 2003 and nearly three quarters (71%, in 2011) were 50 years or older. In general,

there is little opportunity for further career advancement for lead dentists. Career development was reported to be more important for the lead dentists in 2011 than in 2003. Scarcely a third of all respondents in both years had applied for the post as a lead dentist; the others were persuaded to take up such a post for various reasons, e.g. because of a small unit with only a few dentists or because of shortage of suitable candidates. However, the results showed that when new bigger PDS units were created the lead dentist posts were properly advertised and requirements for postgraduate qualifications were high. Most often specialist education in Dental Public Health was requested. It is interesting to note that the decentralized health care system in Finland was one of the main reasons why specialist education in Dental Public Health started in Mid 1970s [12].

As the number of female dentists among the lead dentists had increased since the previous study and slightly more than half of the respondents were women, it would seem that the female lead dentists were breaking "the glass ceiling" in relation to gender division of the leadership positions, but the result was not statistically significant. A similar trend has been seen in medical health care: the number of female lead physicians in primary health care units and hospitals had also increased [13]. Nevertheless, as Beacher-Lind stated in her thesis: "Leadership positions should be held by women in proportion to the number of women entering our specialty..." and continued: "In fact, the actual proportion of women holding leadership positions in obstetrics and gynecology is significantly lower than expected" [14]. In the current study 61% of the lead dentists and 80% of all dentists in Finland in 2012 were women [15]. It seemed that in 2011 men had been more eager than their female colleagues to apply for positions as lead dentists.

Rather big changes had taken place in the leadership education system and also in the lead dentists' postgraduate qualifications. The number of specialists in Dental Public Health had dropped, probably due to difficulties taking a three year full-time education at one of the three Universities where the necessary programme is offered. Instead the shorter two year course in Dental Administration, run by the Finnish Dental Association (FDA) had become popular. The disadvantages of the FDA educating leaders for the municipal health care system are that the participants cannot network with leaders in other health care areas and that they might have difficulties identifying themselves as representatives of their municipal employers. Professional loyalty has been shown to be one of the big problems with clinicians as leaders [4,5]. A fair number of the respondents had participated in the new education Vocational Qualification in Management and Leadership run by the Universities for all health care leaders. It was apparent from the results of the current study that the lead dentists, who had extra qualifications in leadership, often had several degrees. The respondents in larger PDS units had significantly more leadership degrees than those in smaller units. They had also needed them more often than their colleagues in smaller units when applying for their post.

The proportion of lead dentists considered to have had enough leadership education had increased from 2003 to 2011. Unlike men, female dentists without extra qualifications

considered their leadership education poorest. It may be a masculine feature, and even good to trust in one's own abilities to cope with the challengers of big reforms. In advancing careers, women seem to have higher rates of attrition at all stages. Perhaps, as suggested by Isaac et al., gender-biased leadership training for eliminating "female weaknesses", as poor self-confidence or self-esteem, would be necessary for women with appropriate postgraduate qualification to increase their leadership self-efficacy [16].

The lead dentists' position in the municipal hierarchy appears to have become weaker between 2003 and 2011 although the PDS units after the Dental care Reform had much larger population responsibility locally. In contrast with 65% in the first study, only half of the respondents (53%) were members of their local Health Centre Management Team, the traditionally important channel to impact on oral health care decisions in municipalities. The opportunity to participate in local Health Board meetings remained at the previously low level of one third of the respondents. Not being on good terms with their immediate superior, generally the lead doctor could mean that a lead dentist could have difficulties getting heard by the Health Board. However, this did not appear to be a problem as, with few exceptions, in 2011, the lead dentists thought that decision-makers did not make decisions about dental care against the advice of the lead dentists. This can also be an indication of that public dental care in the local municipalities is considered as minor and a rather simple and independent part of the health care and its leaders are competent in their own field but do not have much to contribute to the overall system.

Most lead dentist felt that the Dental Care Reform, both as regards the removal of age restrictions to improve access to the PDS and the extended subsidy of private treatment costs had been necessary measures. However, more than half of them opposed the Care Guarantee legislation, which was not primarily directed towards dental care but in practice was the only way to force the local municipalities to increase the capacity of their dental services. Especially in the PDS units where waiting lists were longer than three months the opposition against Care Guarantee was considerable. Guarantee of treatment in six months had forced municipalities, at least to some extent, to increase the resources for dental care even though several municipalities had had to pay fines when exceeding the six months limit. Most lead dentists claimed that since the Reform they had been forced to work with insufficient staff, especially lack of dentists, to meet the increased demand for care. Because of closure of two of the then four Finnish dental schools in 1990s, there were few new dental graduates available to meet the increased demand [17]. The two dental schools that were closed have been reopened recently. Delegation of dentists' work to dental hygienists, particularly the dental care of children was seen as a way to solve the problem, freeing dentists to treat more demanding adult patients after the Dental Care Reform [18]. Employing dentists from other EU countries would have been possible, but was in practice not easy for relatively small PDS units having no experience in recruitment from abroad and

the Finnish language was also a barrier. Furthermore, the two different channels of financing adult dental care often lead to a situation where many municipalities did not even try to employ more dentists because they could save municipal tax money if patients became tired of waiting for care in the PDS and instead went to the private sector subsidized through the state, as opposed to local, taxation as stated by one of the directors of the city of Helsinki in a recent television program [19].

A great majority of the respondents felt that they were rather or very good *goal-oriented managers* (72%), and almost all (94%) that they were quite or very good people-oriented leaders, which indicated good self-confidence. Lead dentists considered that the working atmosphere in the PDS had improved since 2003. Antagonistic feelings of the personnel aroused by the rapid change in type of patients treated and lack of resources had calmed down over the years. The lead dentists' own total work well-being, was not very good and had not changed much at all since 2003. This is understandable as it has been suggested that well-being is linked to many other personally experienced issues [20]. According to Lundqvist et al. "managers' leadership, health and work conditions are dynamically and reciprocally related to each other" [21]. Being a lead dentist in the PDS continues to be a rather lonely task; this was already noticed in a study in 2002 [22]. All PDS units participating in the study had only one lead dentist, but in larger units he or she could often work together with a team consisting of various specialists and/or local/regional Chief Dentists. As regards the lead dentists' position and possibilities to lead public dental care the big changes planned in municipal health care organization towards a more centralized system can be welcomed.

## Conclusion

Over the eight year period since the Dental Care Reform the lead dentists' self-confidence in their leadership role and working atmosphere in the local PDS units had improved. However, their independent decision-making power had decreased and their position in municipal decision making stayed weak although the PDS units after the Dental care Reform had much larger population responsibility locally. This can be seen as an indication of that public dental care in the local municipalities is considered as minor and independent part of primary health care and its leaders competent in their own field but not contributing much to the overall system. The lead dentists were most satisfied with their work when they had applied for the leading post themselves, when they felt they had had enough leadership education and when they worked in larger PDS units.

## Contributions of Each Author

1. PA: Principal investigator, planned the study, collected the data, performed statistical analyses, and wrote the manuscript.
2. EW: Main supervisor, participated in planning and designing the study, and wrote the manuscript.

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