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Barriers and facilitators that influence the delivery of prevention guidance in health service dental practice: A questionnaire study of practising dentists in southwest England

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Objective: To investigate the barriers and facilitators influencing the delivery of prevention in accordance with a national guideline (Delivering Better Oral Health, Department of Health England) in health service dental practice. ***Design:*** Self-completion questionnaire. **Setting**: Health service general dental practices. ***Subjects and methods:*** Questionnaires were sent via two mailings to all 508 dentists registered to work in health service general dental practice in Devon, South West England. ***Results:*** In total 266 questionnaires were returned (52% response rate). Examples of barriers and facilitators were evident at various organisational levels of dentistry. These were principally the healthcare system, practice (dental office) arrangements and professional factors. Respondents gave positive responses to questions concerning the flexibility (53%) and benefit of the guideline (63%) and they tended to indicate that they didn't perceive problems in changing their old routines (58%). Opinion was divided among respondents on whether they felt patients followed their advice (49%). There was overall agreement that delivering prevention in practice is problematic if there are insufficient staff (68%), facilities (53%) and time (60%). Encouragingly most respondents felt adequately trained to deliver the evidence based prevention guidance (59%). ***Conclusions:*** This study has identified some barriers and facilitators to the delivery of prevention guidance in this group of health service dentists with no single factor viewed consistently as more important than any others. A further qualitative study is planned to investigate in more depth the reasons underpinning the responses given in this study.

Key words: *Promotion of health, oral health, general dental practitioners, England*

Introduction

Prevention of oral disease and promotion of oral health are key objectives for the National Health Service (NHS) in England. In recent years Government reform of health service dentistry has emphasised the role of prevention in practice as an important vehicle for improving population oral health (Department of Health, 2002). The Department of Health (DoH) through a succession of policy documents has made oral health improvement and prevention top priorities for primary care dental services (DoH, 2005; 2009). As such health service dentists have a pivotal role in supporting patients to achieve oral health but despite this there is a lack of evidence about dentists' perceptions of prevention and what the delivery of prevention actually means in practice (Fox, 2010). Furthermore, evidence to date has demonstrated that in terms of actual delivery, prevention in health service dental practice is variable, inconsistent and the interventions adopted by dentists are not always supported by evidence (Threlfall *et al*., 2007; Tickle *et al*., 2003; Tomlinson and Treasure, 2006).

'Delivering better oral health – an evidence based toolkit for prevention' was published by the DoH in September 2007 and one copy was sent to each health service dental practice. It was developed by an expert working group in response to requests from dentists for clear, practical guidance to deliver effective prevention in dental practice (DoH, 2009). The guideline was publicised and promoted by the DoH including coverage in the popular dental press.

A second edition was published in April 2009 in response to two drivers: to ensure the content of the document was compliant with up-to-date evidence; and, requests from primary care dentists for additional hard copies. The second edition was sent to each NHS dentist rather than a copy to each practice to help support its wider use. With both editions of the guideline there has been an expectation that dentists would adopt the recommendations/interventions for the benefit of patients.

Publication of 'Delivering better oral health' was an important milestone as up until this point no national guidance bringing together all aspects of prevention into a single clinical guideline was available in England. As such the toolkit is a valuable resource providing summary guidance on an aspect of practice which dentists have an ethical and moral obligation to deliver as part of comprehensive patient care, but also a topic which evidence has demonstrated is one which dentists are uncertain about. Despite this, its full impact is difficult to evaluate as no research to date has sought dentists' views or attitudes towards the guideline and not all of the interventions recommended in the guidance are formally monitored by the health service. For those that are, there is some evidence of changes in clinicians behaviour, for example numbers of prescriptions of fluoride containing

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preparations have increased (Karki *et al*., 2011; NHS Information Centre, 2010). In certain parts of England, innovative commissioning models have been developed to support preventive care pathways based on the guidance contained within the toolkit (Harris and Bridgman, 2010). The guideline undoubtedly sets a new strategic direction for health service dentistry but its success depends on its wholesale adoption by the dental profession and translation into clinical practice.

The most challenging aspect of evidence-based practice is not producing or disseminating the evidence, but in furthering its translation into clinical practice. The transfer of research findings into practice is commonly described as a slow and haphazard process (Clarkson and Bonetti, 2009). A systematic review of quality of care studies in UK primary care found that in almost all of the studies the process of care did not reach the standards set out in national guidelines (Seddon *et al*., 2001). A number of reasons have been suggested for why guidelines are not universally adhered to including: the health problem addressed, method of guideline development used, content of the guideline, the route of dissemination, or the format and layout (Grol and Grimshaw, 2003). Four studies have examined the attributes of clinical guidelines which might improve compliance in medical practice and they indicate associations with: the type of health problem (better compliance for guidelines concerning acute rather than chronic care); better quality evidence supporting the recommendations; compatibility of the recommendations with existing values; less complexity of the decision-making process; more explicit description of expected performance; and fewer new skills and organisational changes needed to implement the recommendations (Grol and Grimshaw, 2003).

The methods used to distribute and communicate guidelines to the target audience are collectively termed guideline dissemination and their aim is to increase the awareness, understanding and acceptance of the guideline (Feder *et al*., 1999). Dissemination alone is not sufficient to change clinical practice but it is a prerequisite for guideline implementation. Guideline implementation aims to ensure that clinicians act on the guidance.

It is recommended that before strategies are devised to enhance implementation of clinical guidelines into practice a 'diagnostic analysis' is performed of barriers and facilitators to the change process (NHS Centre for Reviews and Dissemination, 1999).

The study aimed to investigate and identify barriers and facilitators that influence implementation of prevention guidance by health service dentists practising in Devon, southwest England.

Methods

The study was carried out with health service general dental practitioners in Devon in southwest England. Devon is a large area, 6,707 km^2, with rural and urban communities though most general dental practices are concentrated in three major cities. The postal questionnaire study was carried out between February and June 2011 following approval by the NHS South West Research Ethics Committee (H10/HO203/71).

A pre-validated barriers and facilitators questionnaire was selected from the literature chosen for its focus on prevention guidelines (Peters *et al*., 2002). The original questionnaire's authors gave their permission for its use in this study and clarified how it was used. Due to its validated generic stem phrasing design no further piloting and/or re-testing of the questionnaire was necessary.

Data were collected via 37 items, with each item using a five point Likert scale so respondents could rate their level of agreement from 'fully agree' to 'fully disagree' organised in 3 principal domains: 1, implementation of 'Delivering better oral health'; 2, implementation of prevention in general; and 3, demographic details. Frequency analyses were carried out to describe respondent characteristics and demographics using SPSS© v17.

All 508 health service general dentists registered to practise in the NHS in Devon were sent a questionnaire. Their names and practice (dental office) addresses were obtained from a local health service database. Each recipient received a questionnaire to complete, a pre-paid return envelope, an information sheet explaining the purpose of the research and a covering letter explaining why they had been chosen. Measures reported in the literature to increase the completion and response rates of questionnaires were followed (Edwards *et al*., 2009). In addition, the support of local dental representative committees was obtained to encourage a high response rate. Each dentist received two mailings of the questionnaire two weeks apart giving a four week window to return the questionnaire. Return of the questionnaire was taken as assent to the process.

Results

Of the 266 questionnaires returned 246 (92%) were fully completed, 7 were incomplete (3%) and 13 were either defaced or unusable (5%). Two hundred and four questionnaires were not returned (40%) and a further 38 (7%) were returned to sender because the dentists were no longer practising at the address given by the local health service database (Figure 1).

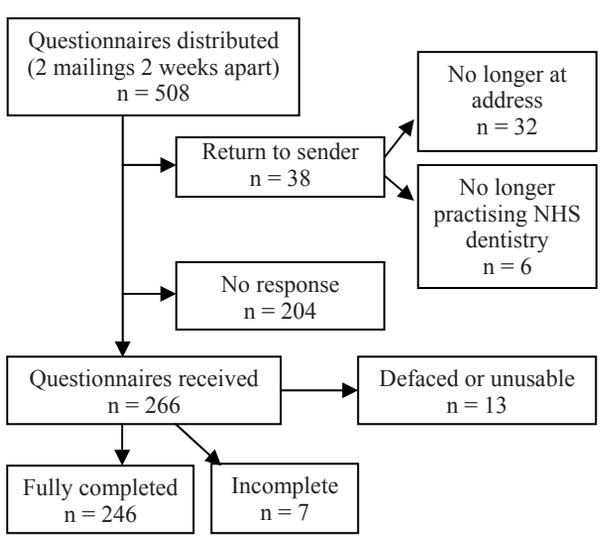

Figure 1. *Responses within the sampling frame*

Respondents were aged between 24 and 69 years (mean 42 years, sd 11) and 56% were males. Forty-three per cent had been qualified for more than twenty years and the most frequently cited practice description was mixed NHS and private (45%) with 75% of respondents spending at least half of their time providing (NHS) health service dental care. Respondent characteristics are shown in Table 1.

Analyses were conducted on 253 questionnaires and the results are presented in Tables 2 and 3. Examples of barriers and facilitators were evident at various organisational levels of dentistry. These were principally the healthcare system, practice (dental office) arrangements and professional factors

Regarding the implementation of 'Delivering better oral health', overall respondents gave positive responses to questions concerning the flexibility (53%) and benefit of the guideline (63%) and they tended to disagree they had problems changing their old routines (58%). Opinion was divided among respondents on whether they felt patients followed their advice (49%) and whether they had support from the local health service in implementing the guidance (51% 'fully disagreed'/'disagreed' that no support was available). Thirty-two per cent of respondents felt that to implement the guideline they required additional funding, whereas only 12% opposed this view with the remainder having no strong opinion. Responses to the remaining questions were mixed with no clear pattern of agreement or disagreement.

In connection with the implementation of prevention in practice, there was overall agreement that delivering prevention in practice is problematic if there are insufficient staff (68%), facilities (53%) and time (60%). Most respondents reported feeling adequately trained to deliver the prevention guidance (59%). Opinion was roughly evenly divided between respondents on the difficulties of providing preventive care to patients from; different cultural backgrounds (32% overall agreed and 32% disagreed); that seem healthy (49% overall agreed and 32% disagreed); of low socio-economic status (42% overall agreed and 41% disagreed); or older patients (47% overall agreed and 37% disagreed).

Table 1. Characteristics of respondents

	n	%
Gender:		
Male	140	57
Female	107	43
Age:		
24 – 34	76	33
35 – 45	59	25
46 – 55	66	28
56 and above	31	13
Not answered	15	6
Years since graduation:		
Under 5	20	8
5 – 10	51	21
11 – 20	69	28
More than 20	107	43
Holds a postgraduate qualification	93	38
Regularly participates in peer review	186	75
Teaches dentistry in a recognised teaching role	32	13
Type of practice you work in:		
Urban	77	31
Rural	59	24
Mixed	111	45
Extent of NHS commitment (% of working time):		
0 – 25%	38	15
25 – 50%	22	9
50 – 75%	36	15
75 – 100%	151	61
Attended a workshop or training event about 'Delivering better oral health – an evidence-based toolkit for prevention'	41	17

Note: With the single exception of age, 246 useable responses were received.

Discussion

The findings of this study indicate that there are a wide range of barriers and facilitators to implementation of prevention guidance in health service dental practice and that these vary between practitioners. This finding is consistent with other studies examining such factors in medicine and allied health professions. Encouragingly and despite the barriers identified, 63% of respondents felt the guideline is beneficial to them. A postal questionnaire of Dutch dentists found that only 54% supported the development and implementation of clinical guidelines (van der Sanden *et al*., 2003). In that study the authors concluded that dentists' opinions on clinical guidelines were unrelated to practice or organisational variables and the most significant barrier identified was fear of restricted professional autonomy. In this study 63% of dentists indicated that working according to 'Delivering better oral health' still gave them enough room to make their own decisions about patient care and 55% reported that patients' wishes could be accommodated. This suggests that a substantial proportion of dentists participating in this study appear comfortable working according to guidelines, particularly as 58% disagreed they had problems following protocols and a further 55% disagreed they had problems changing their old routines.

Most of the research examining the use of clinical guidelines in dentistry to date has focused on explicit clinical entities rather than a spectrum (or philosophy) of care. Overall these studies have shown a general tendency to poor adherence amongst dentists to clinical guidelines irrespective of the guideline source. For example, in areas of dentistry where there is the potential for patient harm such as the prescription of dental radiographs, drugs and referral of patients for general anaesthetic, research has demonstrated poor adherence to nationally agreed standards of care (Rushton *et al*., 1999; Soheilipour *et al*., 2009; Thomas *et al*., 2004). This is perhaps surprising given the procedural nature of these disciplines and the importance of the clinical decision to be taken. Arguably prevention, which has to fit the subtleties of patient behaviour and is crucial to maintenance of long-term oral health, is equally important in terms of decision-making. A recent review of what dentists 'perceive' prevention

Table 2. Responses to the statements relating to the implementation of 'Delivering better oral health'

Questions	*Fully disagree*	*Disagree*	*Do not agree or disagree*	*Agree*	*Fully Agree*	*n*
	n (%)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
Working according to '*Delivering better oral health*'						
'*Delivering Better Oral Health*' leaves enough room for me to make my own decisions	8 (3)	32 (13)	76 (30)	106 (42)	27 (11)	249
'*Delivering Better Oral Health*' leaves me enough room to weigh up the wishes of the patient	11 (4)	34 (13)	77 (30)	104 (41)	23 (9)	249
'*Delivering Better Oral Health*' is a good starting point for my self-study of preventive dentistry.	10 (4)	27 (11)	54 (21)	131 (52)	27 (11)	249
I did not thoroughly read '*Delivering Better Oral Health*'	31 (12)	81 (32)	31 (12)	60 (24)	47 (19)	250
I do not remember receiving '*Delivering Better Oral Health*'	93 (37)	59 (23)	19 (8)	38 (15)	42 (17)	251
I wish to know more about the content before I decide to apply it	37 (15)	51 (20)	62 (25)	53 (21)	47 (19)	250
I have problems changing my old routines	35 (13)	105 (42)	56 (22)	46 (18)	7 (3)	249
I think parts of '*Delivering Better Oral Health*' are incorrect	14 (6)	59 (23)	109 (43)	49 (19)	15 (6)	246
I have a general resistance to working according to protocols	22 (9)	125 (49)	59 (23)	27 (11)	15 (6)	248
Fellow dentists (general practitioners) do not co-operate in applying the guidance	19 (8)	43 (17)	105 (42)	65 (26)	15 (6)	247
Other members of the dental team (therapists, hygienists, nurses etc) do not co-operate in applying the guidance	23 (9)	90 (36)	97 (38)	30 (12)	7 (3)	247
The Primary Care Trust do not support implementation of the guideline	6 (2)	124 (49)	37 (15)	28 (11)	28 (11)	223
Patients do not co-operate with the advice in the guidance	11 (4)	18 (7)	93 (37)	108 (43)	16 (6)	246
Working to '*Delivering Better Oral Health*' is too time consuming	11 (4)	49 (19)	78 (31)	94 (37)	15 (6)	247
The guidance does not fit into my ways of working at my practice	10 (4)	87 (34)	99 (39)	40 (16)	11 (4)	247
Working according to this guidance requires financial compensation	2 (0.8)	27 (11)	66 (26)	40 (16)	40 (16)	175
The layout of '*Delivering Better Oral Health*' makes it easy to use	13 (5)	32 (13)	101 (40)	83 (33)	17 (7)	246

Table 3. Responses to the statements relating to the implementation of prevention

Statement following the stem "It is difficult to give preventive care …."	*Fully disagree*	*Disagree*	*Do not agree or disagree*	*Agree*	*Fully Agree*	*n*
	n (%)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	
… if there are not enough support staff	14 (6)	28 (11)	35 (14)	125 (49)	48 (19)	250
… if resources needed are not available	14 (6)	14 (6)	28 (11)	124 (49)	70 (28)	250
... because the timing of preventive care is difficult to fit into treatment plans	14 (6)	49 (19)	36 (14)	119 (47)	33 (13)	251
… if physical space is lacking (e.g. oral health education room)	20 (8)	48 (19)	50 (20)	90 (36)	42 (17)	250
… because I am not trained in giving evidence-based preventive care	58 (23)	92 (36)	60 (24)	24 (10)	16 (6)	250
… because I have not been involved in setting up preventive care policies in the practice	43 (17)	88 (35)	68 (27)	31 (12)	21 (8)	251
… to patients with a different cultural background	27 (11)	52 (21)	91 (36)	61 (24)	20 (8)	251
… to patients who seem healthy	22 (9)	102 (40)	49 (19)	50 (20)	28 (11)	251
… to patients with a low socio-economic status	21 (8)	86 (34)	41 (16)	78 (31)	25 (10)	251
… to older patients (60+)	23 (9)	97 (38)	39 (15)	68 (27)	24 (10)	251

to be in practice found that whilst over 50% of dentists felt it desirable to give preventive advice including oral hygiene, diet and or smoking cessation/prevention, fewer dentists felt it is their role to offer advice on public health interventions such as advice on safe alcohol consumption or physical activity (Fox, 2010). It is likely that greater insight into dentists' beliefs, motivation and attitudes towards prevention might provide answers as to why this might be, and further research in this field which should include qualitative methods to better understand how dentists view prevention is warranted.

It is disappointing to record that 43% of respondents in this study reported that they did not thoroughly read the guideline and nearly a third (32%) did not remember receiving it. This finding supports the literature on guideline implementation which indicates that passive dissemination methods are largely ineffective in changing practitioners' behaviour. In addition, only 17% of respondents had attended a workshop or training event about the guideline. It is also of note that seven questionnaires were returned because the recipient was not aware of the guideline, and five were returned with only negative comments written across the front about the study topic.

There are limitations to this study; the response rate of 52% was disappointing although this rate is consistent with other questionnaire based studies of health professionals (Edwards *et al*., 2009). The results may therefore be subject to selection bias. There is no demographic data available locally to compare the profile of responders to the sampling frame and so the results must be interpreted with caution as the issues identified here may not be representative of other dentists locally or nationally in England. Another factor that is relevant to the response rate and with due consideration to the study aims is the possibility that failure to respond to the questionnaire may have been the result of a lack of awareness of the guideline, or a failure to take the guideline seriously. There is some evidence for this in the questionnaire responses discussed but also in the fact that a number of questionnaires were returned for this reason or were defaced. This highlights a potential fundamental primary barrier to participating in the study and strengthens the argument that passive dissemination of clinical guidelines is not an effective strategy to safeguard their implementation in clinical practise.

There are very few comparative data in the dental literature with which to compare the results of this study. In terms of barriers and facilitators to delivery of prevention guidance this study accords well with a study by Watt *et al*. (2004) that sought to identify barriers and facilitators to the general process of change in dental practice which found a range of factors of similar importance. Despite its limitations the results of our study are similar and did not reveal a strong trend in agreement or disagreement among respondents to the majority of the statements in the questionnaire. A similar finding in medical practice concerning implementation of clinical guidelines emphasises the complex nature of healthcare provision with its many inter-dependencies and resulting barriers at various levels (Cabana *et al*., 1999; Grimshaw *et al*., 2004; Oxman *et al*., 1995). Examining such factors enables an understanding of dentists' practising behaviour to be developed and may inform efforts to improve the implementation of prevention into clinical practice for the benefit of patients.

Conclusion

This study has identified some barriers and facilitators to the delivery of prevention guidance in this group of health service dentists with no one factor seemingly more important than another. A further qualitative study is planned to investigate in more depth the reasons underpinning the responses given.

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