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Remuneration of primary dental care in England: perspectives of a new service delivery model incorporating incentives for improved access, quality and health outcomes

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4 **Remuneration of primary dental care in England: perspectives of a new service delivery**
5 **model incorporating incentives for improved access, quality and health outcomes**
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Abstract

Objective: To describe stakeholder perspectives of a new service delivery model in primary care dentistry incorporating incentives for access, quality and health outcomes

Design: Observations, interviews and focus groups

Setting: Six UK primary dental care practices, three working under the incentive-driven contract and three working under the traditional activity based contract

Participants: Observations were made of 30 dental appointments. Eighteen lay people, 15 dental team staff and a member of a commissioning team took part in the interviews and focus groups.

Results: Using a qualitative framework analysis informed by Andersen's model of access we found oral health assessments influenced patients' perceptions of need, which led to changes in preventive behaviour. Dentists' responded to the contract, with greater emphasis on prevention, use of the disease risk ratings in treatment planning, adherence to the pathways and the utilisation of skill-mix. Participants identified increases in the capacity of practices to deliver more care as a result. These changes were seen to improve evaluated and perceived health and patient satisfaction. These outcomes fed back to shape people's predispositions to visit the dentist.

Conclusion: The incentive driven contract was perceived to increase access to dental care, determine dentists' and patients' perceptions of need, their behaviours, health outcomes and patient satisfaction. Dentists face challenges in refocussing care, perceptions of preventive dentistry, deployment of skill mix and use of the risk assessments and care pathways. Dentists may need support in these areas and to recognise the differences between caring for individual patients and the patient-base of a practice.

Strengths and limitations of this study

- The research shows that incentive-driven contracting can influence access to dental care and shape predispositions to visit the dentist.
- Increased skill mix can improve the availability of care and patient satisfaction; however, changes in skill-mix are exquisitely sensitive to contracting and practice finance.
- Whilst NHS dental contracting in the UK is currently under-going an evolution, the contracts described in this study were forerunners of these new incentive-driven contracts and the findings remain directly relevant.
- Use of the Andersen model of access was broadly sustained in the data but might be enhanced by greater conceptual clarity.

Introduction

Commissioning of NHS dentistry in England is moving away from volume-based contracts with payment for units of dental activity (UDA) to an approach that rewards quality and oral health improvement alongside activity¹. Payments recognise prevention and reward the contribution of the dental team to improved oral health, reflected in patient progression along care pathways, adherence to nationally agreed clinical guidelines and the achievement of expected outcomes¹. The Department of Health and Social Care (DHSC) dental contract reform programme opened a series of pilots in 2011, subsequently followed by on-going prototype systems, to explore a shift from treatment and repair to prevention and improved oral health via a new clinical pathway and new remuneration models^{2,3}. Whilst the impact of these contracts on process has been investigated, limited evidence exists on their effect on oral health outcomes and patient, commissioner and workforce acceptability.

The care pathway in the pilots and prototypes begins with an oral health assessment (OHA)^{3,4} designed to enable more prevention within personalised care plans, taking into account patients' social and dental histories and clinical status. Patients are then advised of their oral risk status using a red/amber/green rating (RAG) rating, given preventive advice and a follow up or review based on their risk status. The RAG tool allows dentists to perform detailed and consistent assessments that, in turn, direct delivery of care appropriate to needs and aids communication with patients. Evaluation of the pilots reported patient and practitioners views of the new clinical pathway to be strongly supportive⁵. However, evidence on the effectiveness of use of contracting and incentives in health providers is still emerging and is mixed.⁶⁻⁹ Within dentistry, changes to incentive structures, towards a fee for service model increased activity and influenced dentists to target UDAs by shifting towards treatments with high rewards rather than prescribing on the basis of need^{10,11}. However, a recent review found low level evidence and concluded that changes to remuneration may change clinical activity in primary care dentistry but further experimental research is needed¹². Furthermore, there is little literature regarding care pathways in primary dental care¹³. Findings from the national dental contract pilots, suggested small improvements in risk reduction over the short-term¹⁴. The new prototypes are undergoing evaluation¹⁴.

Another potential advantage of a new dental contract would be more effective use of skill-mix. Dental hygienists/therapists may provide treatments such as scaling and polishing, oral health promotion, fissure sealants and fillings on all patients and pulp treatment/stainless steel crowns and extractions on children. The potential contribution of dental therapists to reduce costs and increase access to care

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3 is considerable. Whilst there are few hard data to support skill-mix in dentistry¹⁵, approximately 60 –
4 70% of dentists are prepared to consider employing a therapist although some dentists remain unclear
5 of their roles¹⁶⁻¹⁸.
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10 In 2007 a new incentive-driven contract (INCENTIVE) intended to promote evidence-based preventive
11 interventions, widen access to dentistry and encourage the use of skill mix was introduced in three
12 primary care dental practices in West Yorkshire. The practices were in areas of high oral health need
13 and with high demand for NHS dental care. Whilst it pre-dated the national dental contract pilots and
14 prototypes, the specification of the INCENTIVE model reflected the same ethos and recommendations,
15 with several features identical. Like the prototypes, the INCENTIVE model blended incentives to
16 demonstrate quality, oral health improvements and volume of service. Most of its contract value (60%)
17 was attributed to the delivery of UDAs, with the remainder equally divided between quality (including
18 systems, processes and infrastructure) and oral health improvement via implementation of Delivering
19 Better Oral Health¹⁹. The model also employed the same OHA care pathway.
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30 Our overall aim was to evaluate the incentive driven model of dental service provision implemented
31 in West Yorkshire in the North of England. Our objectives were to (i) explore stakeholder perspectives
32 of the new service delivery model, (ii) assess its effectiveness and (iii) assess its cost-effectiveness.
33 This manuscript reports on the first objective; details of the effectiveness and cost effectiveness
34 evaluation can be found elsewhere²⁰⁻²¹.
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40 **Methods**

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42 This qualitative study focused on the three INCENTIVE practices and three comparator dental practices
43 working under traditional UDA contracts (TRADITIONAL practices). The TRADITIONAL were matched
44 with the INCENTIVE practices by deprivation index, age profile, size of practice and ethnicity.
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48 Data were collected in focus groups and semi-structured interviews, supplemented with observations
49 of dental appointments of the delivery of dental care. Purposive sampling via a sampling matrix
50 supported recruitment of participants with different experiences of the model. The three stakeholders
51 groups were lay people (patients and non-patients), dental teams (dental practitioners, dental care
52 professionals and practice managers) and service commissioners.
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57 Encounters were observed in two INCENTIVE and two TRADITIONAL practices. Staff were sampled so
58 that similar numbers (15 each) of dentists and dental hygienist/ therapists were observed. All eligible
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3 adult patients (18 years or over) with appointments on the observation day were invited to participate.
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5 Two weeks before their appointments, patients were sent a letter informing them of the study, a study
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7 information leaflet and consent form. Patients who expressed interest in participating were given the
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9 opportunity to ask any questions and give consent on the day of their appointment. The 'non-
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11 participant' observer attended appointments passively at a distance close enough to hear the
12
13 conversation to take comprehensive field notes. A brief analysis of observations was conducted as soon
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15 as possible after the observation (the same or following day).

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17 Observations were followed by interviews on the same day with four dentists and four dental
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19 hygienists/therapists. Staff commented on the encounters and shared their views on what had taken
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21 place. Questions asked at the post-observation interview were influenced by the nature of the activity
22
23 in the encounters, the team member's attitude, expectations and impressions and reflections of the
24
25 experience. Interviews were recorded and transcribed verbatim.

26
27 Interviews were also conducted with patients, other lay people, commissioners and dental team
28
29 members. Lay people were recruited in two ways: (i) practices mailed information packs to patients;
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31 (ii) Focus groups were held with groups attending a community centre, including one for parents with
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33 young children and another for older residents. In addition, snowball sampling entailed existing
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35 participants passing the study information and the researcher's contact details on to acquaintances.
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37 Participants should be aged 16 years and over. People with no natural teeth were excluded.

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39 Interviews and focus groups followed a topic guide, partly informed by the theoretical framework and
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41 supplemented with themes that emerged from the observations and previous interviews. Interviews
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43 with dental team members took place at the dental surgery, while interviews with patients took place
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45 in patient's homes. All were recorded and transcribed verbatim. Interviews lasted between 15 and 70
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47 minutes.

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49 The Andersen Behavioural model of access was employed as the theoretical framework for the
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51 qualitative analysis (Figure 1). The model sees access as *'the use of personal health services and
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53 everything that facilitates or impedes their use'*²².

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55 The model has evolved in line with advances in understanding to incorporate the interaction between
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57 individual, health care system and external environment²²⁻²⁴. Later versions introduced health and
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59 patient satisfaction as desirable outcomes, said to be determined by predisposing and enabling factors,
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behaviours and need. Many studies in health care, including dentistry, support its use (e.g.²⁵⁻²⁶).

FIGURE 1 HERE

People may be predisposed to accessing care as a result of their demographic factors, social environment and beliefs. Enabling factors include policies, facilities, staff finance, and the organisation of services that might influence utilisation²⁴. From this perspective the INCENTIVE contract is an enabling factor with policy, financial and organisational facets^{1,3,19}. Health needs may include health education, disease prevention, diagnosis, treatment, rehabilitation and palliative care. Andersen distinguished between evaluated (professionally defined, or normative) and perceived (personally defined or felt) need. In turn, these components could influence personal and professional health behaviours. Personal behaviours are activities that shape health status, such as oral hygiene, diet and tobacco use. Health service use is treated as behaviour in itself. Professional behaviours relate to processes such as health education, communication and prescribing. The maintenance and improvement of health should be the primary outcome of access, thus the outcomes are (patient) perceived and (clinician) evaluated health status and patient satisfaction. An important feature of the model is its recursive nature with feedback loops so that the outcomes of access may influence future predisposing and enabling factors, population needs and use of services.

Framework analysis was used to induce the results from the original accounts within the structured policy focus of the research²⁷. Our intention was to explore the effect of the contract as an enabling factor, interacting with other stages of the model. While Andersen's model guided the analysis, it was refined as required to identify the thematic framework. Data were indexed and charted under subheadings derived from the framework to enable a process of constant comparison across themes and cases. Thus, the framework analysis served to either confirm or to challenge the model, with deviant case analysis used to add new categories or revise it. The validity of the findings was supported by discussion of interim and final results for triangulation and corrections with participants in focus groups. The results were also compared against existing knowledge, such as the evaluations of the NHS Dental Contract Pilots⁵.

Patient and Public Involvement (PPI)

Throughout the research cycle and patient contributors worked as integral members of the research team from conception of the research idea to shape our research questions and aid delivery, project management and final data interpretation through to reporting. They ensured our research was of relevance to patients and the NHS. Specifically patient contributors: Helped identify and prioritise the

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3 research questions and develop the research design. (e.g. the sampling matrix was co-designed); were
4 members of the study advisory group; and co-developed participant information leaflets and
5 dissemination materials.
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10 **Results**

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13 Data were collected between August 2012 and February 2014. Observations were made of 30 dental
14 appointments. Eighteen lay people, 15 dental team staff (four traditional practice dentists, 8
15 INCENTIVE dentists, 2 practice managers and a dental therapist) and a member of the commissioning
16 team took part in the interviews and focus groups. The results are presented in two stages. First, the
17 major themes in the data are outlined. Secondly, the interactions between enabling and other factors
18 are described.
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23 **Major themes**

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27 The Andersen Framework was largely sustained in the data, with the only revision being the addition
28 of trust as an outcome of access. Predisposing factors could be characterised as demographic and
29 social characteristics and beliefs. For example, family commitment could facilitate or hamper service
30 utilisation. Enabling factors fell into three sub themes of health policy, finance and organisations. The
31 influence of health policy between the extremes of the changes associated with implementation of
32 the INCENTIVE model right through to an apparent lack of policy in some TRADITIONAL practices. A
33 key part of the contract was dentists' remuneration. Traditional models were problematic for complex
34 cases, whereas INCENTIVE practices focused on the costs of OHAs and building relationships with
35 patients that would enable more prevention. Computing problems featured as organisational factors,
36 and in particular the practice software, which had not been adapted to INCENTIVE.
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45 Evaluated and environmental need and population health indicators were manifest in the data. Two
46 localities in the study are characterised by material deprivation, poor oral health and long-standing
47 under-supply of care. Unsurprisingly, this influenced dental treatment needs.
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51 An example of professional behaviour involved formally assessing patients' risk of disease. Dental
52 team members commented on the relative imprecision of the traffic light system and its three
53 categories. Indeed attitudes and practices towards prevention varied appreciably among the dental
54 teams with one dentist noting: *I do find it hard to talk about their health – I'm trained to drill and fill.*
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58 Health outcomes and satisfaction appeared in the data, as did the concept of trust. One INCENTIVE
59 patient noted: *I do trust them here – they treated me, gave me root canal treatment and saved my*
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3 *tooth, without them, I'd have been minus a few teeth and my appearance would not have been*
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5 *good.*

7 **Interactions**

10 The INCENTIVE contract changes the finance and organisation of dental practices to implement
11 health policy. Its effects can therefore be seen as interactions between these enabling factors and
12 other stages in the model. This can be seen in enabling and pre-disposing factors and need.

15 INCENTIVE practices had been located based on *"a robust oral health needs assessment prior to*
16 *commissioning these practices and we'd looked very closely at equity in terms of access to dental*
17 *care"* (Service Commissioner). For some participants, the INCENTIVE practices marked a shift from
18 *no* dental care, whereas others moved from private to NHS provision. The new services suited
19 participants' needs in terms of location, personnel and ease of getting an appointment.
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24 Effects of the INCENTIVE contract were evident on the processes of care, personal health practices
25 and the use of personal health resources. In turn, the process of delivering care appeared to be
26 affected in three ways, 1] by the use of the care pathway underpinned by the risk assessment/ RAG;
27 2] by increasing prevention communication and 3] multidisciplinary approach through wider use of
28 skill mix. Of interest the communication of the RAG ratings was not always apparent in the
29 observations and was being used solely by some of the clinicians to document progress.
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35 Participants reflected on their experiences with the pathways. Benefits included the clear link
36 between the risk assessment and care pathways. The INCENTIVE contract embedded DHSC guidance²⁶
37 so that prevention became valued standard procedure. Practitioners felt that it gave them time and
38 space to care for patients. For example, one INCENTIVE dentist noted: *Red, amber or green and then*
39 *they do get the fluoride varnish, the smoking cessation and alcohol use is being taken automatically.*
40 This could be contrasted directly with the TRADITIONAL practices. There was an example of where the
41 focus of care in the incentive contract had penetrated a TRADITIONAL practice, causing them to reflect
42 on their processes of care: *We are pushed towards UDAs rather than improving oral health... The*
43 *prevention emphasis is an issue – we are expected to talk about perio disease and smoking and diet*
44 *and have to squeeze that in.*
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52 The INCENTIVE practices were not mandated to use multidisciplinary teams, but did so to deliver
53 preventatively focused care. One approach was for dentists to examine patients and formulate
54 treatment plans, but some practices did not deduct the value of the delegated treatment from dentists'
55 incomes:
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3 *They readily work with each other. I mean our therapist and the hygienist are generally busy*
4 *the whole day, . . . we pay them on a fixed rate and the therapists are very happy with that*
5 *because they've got full time work, they're busy, the associates are happy because they're*
6 *not having to pay for them ..., the patients get benefit because they get access to a therapist,*
7 *... it may cost more for us to do it but it's a more sensible way of running a business because*
8 *everybody is working together for the same aim*
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15 The new contractual arrangements were seen to influence personal health practices and the use of
16 personal health resources. They also influenced outcomes of perceived and evaluated health and
17 patient satisfaction. Moreover, the interactions could ripple throughout the model to have far-
18 reaching effects. For example the RAG ratings could influence patients' perceptions of their own needs,
19 leading to personal behaviour changes and satisfaction (an outcome). As one INCENTIVE patient said:
20 *I think it's good because if you know, if someone says to you, you know on this rating you are more at*
21 *risk, you're more likely to do something about it aren't you, as opposed to someone not saying anything*
22 *to you...* For dentists use of the ratings to determine recall intervals liberated more time for the process
23 of care and allowed observation of increased health but influenced patient satisfaction both positively
24 and negatively which suggests a need to reconcile contrasting views: the ability to increase access and
25 longer intervals between assessments. In a wholly positive example, one INCENTIVE patient satisfied
26 with her own care encouraged her partner to attend so that professional behaviour enhanced
27 satisfaction to change predisposing factors to increase access to care.
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38 **Discussion**

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40 This study has described stakeholders' views of the INCENTIVE contracting arrangements. The ratings
41 from OHAs influenced patients' perceptions of need, which led to changes in preventive behaviour.
42 Dentists' had responded to the contract in the desired direction with greater emphasis on prevention,
43 use of the ratings in treatment planning, adherence to the pathways and the utilisation of skill-mix.
44 Participants identified increases in the capacity of practices to deliver more care as a result. These
45 changes were seen to improve evaluated and perceived health and patient satisfaction. These findings
46 are compatible with the first year evaluations of the NHS dental contract pilots where almost three
47 quarters of patients said they had a better understanding of their oral health and had changed their
48 behaviour⁵. Furthermore, analysis of OHAs and reviews suggested that RAG ratings improved for small
49 numbers of patients, within two years⁴. Better health and satisfaction increased the predisposition to
50 visit the dentist. These findings demonstrate the potential for a new contract to increase access and
51 to improve health.
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3 Whilst these data are encouraging for continued contract reform, several areas were identified as
4 requiring more consideration, where NHS England, dental teams and the public may need more
5 support. The practices had been placed in areas of high need. As well as meeting immediate needs,
6 the *perception* of low availability of care may also be a barrier to access in areas that have been
7 underserved in the past. Evidence of new services is therefore needed to break this cycle. The results
8 also demonstrate direct benefits of the needs-led local service commissioning of the 2006 dental
9 contract²⁸⁻²⁹. Such local knowledge is less well utilised in the current NHS England single operating
10 model for practice commissioning³⁰, which may render the system less responsive.

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17 Participants at INCENTIVE practices reported professional and lay preventive behaviours leading to
18 better evaluated and perceived health. However, there were concerns over offering preventive advice,
19 the complexities of accounting for the patient's context, the time this took and the difficulties of
20 effective prevention, especially in areas with high levels of disease. These aspects of dentistry are
21 often presented as problems, sometimes beyond the scope of practitioners, rather than part of their
22 job¹⁶. This is a key issue if dentistry is to refocus on prevention. These and other data indicate that
23 change is possible if it is encouraged by the right contractual model. Education may also be required
24 to support contractual drivers. Neither one alone is likely to be sufficient. A Cochrane Review³¹
25 concluded that educational meetings had a small effect on professional practice and health outcomes
26 but the effects were likely to be smaller still for complex behaviours. Both a systematic review of
27 incentives to follow best practice in health care and a Cochrane review of the effect of remuneration
28 on primary care dentists' behaviour cited within it^{12,32} concluded that financial incentives can have a
29 'modest' effect on improving the quality of healthcare.

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40 The emphasis on OHAs and pathways was a key feature of INCENTIVE and the DHSC contract pilots
41 and subsequent prototypes⁵. Some patients were not aware of the RAG ratings; others perceived them
42 to alert them to their preventive needs and to be a motivator. We specifically enquired about the RAG
43 ratings when triangulating the data in focus groups with dental staff. There was near universal use of
44 the ratings as a decision aid (as evident in the data), but their use in patient communication had
45 decreased over time. Dental teams may need clarification of whether and how the ratings are
46 supposed to be communicated to patients. The small number of rating categories concerned some
47 dentists, especially for patients with immutable risk factors such as general health problems. Dentists'
48 concerns might be alleviated by the addition of new categories. Alternatively, they may become used
49 to this system and gain confidence in over-riding the rules of the pathway. Their reluctance to do this
50 may stem from the requirement to justify doing so. Dentists who engaged in the contract pilots
51 requested reassurance about exercising clinical judgement in deviating from recommendations³³, first
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3 that there would be no medico-legal repercussions provided there was evidence of clinical justification;
4 and second, that they would not be penalised contractually.
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7 Dental therapists increased the availability of care and patient satisfaction. However, the use of skill-
8 mix is exquisitely sensitive to contracting and practice finance³⁴. Practices had increased their
9 utilisation of wider skill mix by not reducing the payments to dentists who delegated care. Paying two
10 staff members for the shared treatment incentivised referral across the team and also liberated
11 dentists' time for patient OHAs and more remunerative complex treatments. The impact of funding
12 arrangements on dental practice is well known, and dentists must reconcile the business and other
13 elements of their practices³⁵. Dentists could see how the new contract carried the potential for
14 greater value for money and reduce unnecessary treatment, but there were concerns that the time
15 and costs of the OHAs had been under-estimated. This was also a concern in the dental contract pilots
16 and was evident as reduced patient access^{33,36}. This financial risk may be particularly relevant to new
17 practices. The pilots were conducted in existing practices and experienced falls in access. However,
18 the challenges may be even more severe in new practices (such as the INCENTIVE practices), where
19 all the patients required initial assessments and were more likely to have high treatment needs
20 necessitating more visits. This consideration goes further than dentists' incomes as concerns about
21 costs were seen to influence practitioner behaviour. These concerns support the notion of assigning
22 contract values according to patient needs, which in the contract prototypes is achieved by weighting
23 the capitation element by patient characteristics of age and deprivation status³⁶.
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36 The Andersen Model provided a useful taxonomy for the data and allowed identification of the effects
37 of the new contract. This fit is unsurprising as the model was developed over a forty-year period and
38 remains amongst the most widely cited models of access to health care^{23,24,37,28}. Theoretical models
39 may be tested empirically or by looking for logical coherence³⁹. The Andersen model is somewhat
40 general with overlapping dimensions and others (e.g. social capital) not explicitly incorporated³⁷. Very
41 little is said about how demographic variables may exert effects and why³⁸. A new factor in these data
42 ('Trust') is not explicit in the model but could be regarded as both a belief and an outcome of care³⁹.
43 Dimensions also overlap in the model where dissimilar concepts are grouped together (personal
44 health practices and health service use, perceived and evaluated health and satisfaction). This is
45 important because empirical testing demands careful specification of inclusive relationships and to a
46 certain extent this confounded testing of this model³⁸. One consequence of this might be that the
47 model yields very different results when cross national comparisons are made⁴⁰.
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Conclusion

The incentive-driven contract influenced access to dental care. Participants associated it with more access, greater use of skill mix and improved health outcomes. These outcomes fed back to shape predispositions to visit the dentist.

The policy context in which the INCENTIVE study was funded has remained remarkably constant ever since. The Steele Report of 2010¹ advocated commissioning to align dentistry with the rest of NHS services and to commission for health outcomes; to develop contracts rewarding activity, quality and oral health improvement. It recommended that payments explicitly recognise prevention and reward the contribution of the dental team to improvements to oral health, reflected in patient progression along the pathway, adherence to clinical guidelines and the achievement of expected outcomes¹. The contract prototypes now being tested³⁶ retain the same ethos of shifting NHS dentistry towards prevention and oral health rather than treatment and repair through a new clinical pathway and new remuneration models. Despite pre-dating the Steele report the INCENTIVE contracts were forerunners of these new incentive-driven contracts. Thus, our findings remain directly relevant to the evolution of the NHS dental contract.

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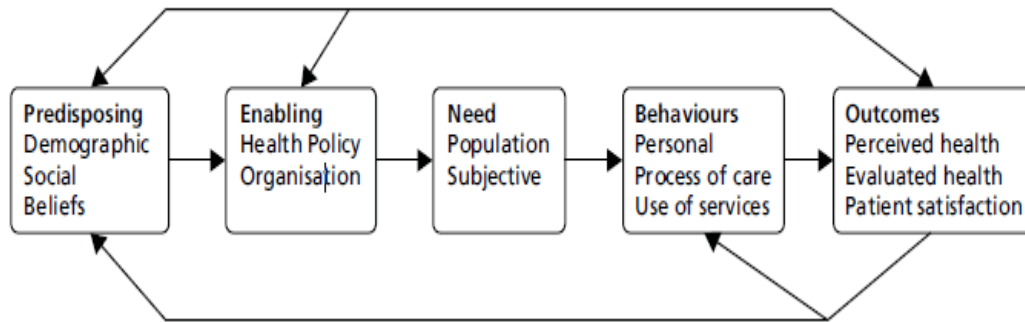
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Figure 1: Andersen's Behavioural model of access (adapted from Baker²⁶)

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3 **Figure 1: Andersen's Behavioural model of access** (adapted from Baker ²⁶)
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BMJ Open

Remuneration of primary dental care in England: A qualitative framework analysis of perspectives of a new service delivery model incorporating incentives for improved access, quality and health outcomes

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4 **Remuneration of primary dental care in England: A qualitative framework analysis of**
5 **perspectives of a new service delivery model incorporating incentives for improved**
6 **access, quality and health outcomes**
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Abstract

Objective: To describe stakeholder perspectives of a new service delivery model in primary care dentistry incorporating incentives for access, quality and health outcomes

Design: Observations, interviews and focus groups

Setting: Six UK primary dental care practices, three working under the incentive-driven contract and three working under the traditional activity based contract

Participants: Observations were made of 30 dental appointments. Eighteen lay people, 15 dental team staff and a member of a commissioning team took part in the interviews and focus groups.

Results: Using a qualitative framework analysis informed by Andersen's model of access we found oral health assessments influenced patients' perceptions of need, which led to changes in preventive behaviour. Dentists' responded to the contract, with greater emphasis on prevention, use of the disease risk ratings in treatment planning, adherence to the pathways and the utilisation of skill-mix. Participants identified increases in the capacity of practices to deliver more care as a result. These changes were seen to improve evaluated and perceived health and patient satisfaction. These outcomes fed back to shape people's predispositions to visit the dentist.

Conclusion: The incentive driven contract was perceived to increase access to dental care, determine dentists' and patients' perceptions of need, their behaviours, health outcomes and patient satisfaction. Dentists face challenges in refocussing care, perceptions of preventive dentistry, deployment of skill mix and use of the risk assessments and care pathways. Dentists may need support in these areas and to recognise the differences between caring for individual patients and the patient-base of a practice.

Strengths and limitations of this study

- Whilst participant numbers are modest, staff were purposively sampled across a range of skill mix so similar numbers were observed
- Patients and 'non-patients' were recruited – the latter to include people who may not engage with local dental care services
- There will inevitably be a degree of bias given that all the practices were self-selected
- The model of access was broadly sustained in the data but might be enhanced by greater conceptual clarity
- Although the new practices increased access, further work is required to understand how best to promote and encourage appropriate dental service attendance

Introduction

Commissioning of National Health Service (NHS) dentistry in England is moving away from volume-based contracts with payment for units of dental activity (UDA) to an approach that rewards quality and oral health improvement alongside activity¹. Payments recognise prevention and reward the contribution of the dental team to improved oral health, reflected in patient progression along care pathways, adherence to nationally agreed clinical guidelines and the achievement of expected outcomes¹. The Department of Health and Social Care (DHSC) dental contract reform programme opened a series of pilots in 2011, subsequently followed by on-going prototype systems, to explore a shift from treatment and repair to prevention and improved oral health via a new clinical pathway and new remuneration models^{2,3}. Whilst the impact of these contracts on process has been investigated, limited evidence exists on their effect on oral health outcomes and patient, commissioner and workforce acceptability.

The care pathway in the pilots and prototypes begins with an oral health assessment (OHA)^{3,4} designed to enable more prevention within personalised care plans, taking into account patients' social and dental histories and clinical status. Patients are then advised of their oral risk status using a red/amber/green rating (RAG) rating, given preventive advice and a follow up or review based on their risk status. The RAG tool allows dentists to perform detailed and consistent assessments that, in turn, direct delivery of care appropriate to needs and aids communication with patients. Evaluation of the pilots reported patient and practitioners views of the new clinical pathway to be strongly supportive⁵. However, evidence on the effectiveness of use of contracting and incentives in health providers is still emerging and is mixed.⁶⁻⁹ Within dentistry, changes to incentive structures, towards a fee for service model increased activity and influenced dentists to target UDAs by shifting towards treatments with high rewards rather than prescribing on the basis of need^{10,11}. However, a recent review found low level evidence and concluded that changes to remuneration may change clinical activity in primary care dentistry but further experimental research is needed¹². Furthermore, there is little literature regarding care pathways in primary dental care¹³. Findings from the national dental contract pilots, suggested small improvements in risk reduction over the short-term¹⁴. The new prototypes are undergoing evaluation¹⁴.

Another potential advantage of a new dental contract would be more effective use of skill-mix. Dental hygienists/therapists may provide treatments such as scaling and polishing, oral health promotion, fissure sealants and fillings on all patients and pulp treatment/stainless steel crowns and extractions

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3 on children. The potential contribution of dental therapists to reduce costs and increase access to care
4 is considerable. Whilst there are few hard data to support skill-mix in dentistry¹⁵, approximately 60 –
5 70% of dentists are prepared to consider employing a therapist although some dentists remain unclear
6 of their roles¹⁶⁻¹⁸.
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12 In 2007 a new incentive-driven contract (INCENTIVE) intended to promote evidence-based preventive
13 interventions, widen access to dentistry and encourage the use of skill mix (skill-mix in dentistry
14 describes a model which might include, for example dentists, dental therapists, dental hygienists and
15 dental nurses) was introduced in three primary care dental practices in West Yorkshire. The practices
16 were in areas of high oral health need and with high demand for NHS dental care. Whilst it pre-dated
17 the national dental contract pilots and prototypes, the specification of the INCENTIVE model reflected
18 the same ethos and recommendations, with several features identical. Like the prototypes, the
19 INCENTIVE model blended incentives to demonstrate quality, oral health improvements and volume
20 of service. Most of its contract value (60%) was attributed to the delivery of UDAs, with the remainder
21 equally divided between quality (including systems, processes and infrastructure) and oral health
22 improvement via implementation of Delivering Better Oral Health¹⁹. The model also employed the
23 same OHA care pathway.
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35 Our overall aim was to evaluate the incentive driven model of dental service provision implemented
36 in West Yorkshire in the North of England. Our objectives were to (i) explore stakeholder perspectives
37 of the new service delivery model, (ii) assess its effectiveness and (iii) assess its cost-effectiveness.
38 This manuscript reports on the first objective; details of the effectiveness and cost effectiveness
39 evaluation can be found elsewhere²⁰⁻²¹.
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45 **Methods**

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47 This qualitative study focused on the three INCENTIVE practices and three comparator dental practices
48 working under traditional UDA contracts (TRADITIONAL practices). The TRADITIONAL were matched
49 with the INCENTIVE practices by deprivation index, age profile, size of practice and ethnicity.
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54 Data were collected in focus groups and semi-structured interviews, supplemented with observations
55 of dental appointments of the delivery of dental care. Purposive sampling via a sampling matrix
56 supported recruitment of participants with different experiences of the model. The three stakeholders
57 groups were lay people (patients and non-patients), dental teams (dental practitioners, dental care
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3 professionals and practice managers) and a service commissioner. The sampling matrix for the public
4 and patient group included criteria linked to demographic factors (age, gender, ethnicity,
5 socioeconomic status), risk category and treatment need.
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9 Encounters were observed in two INCENTIVE and two TRADITIONAL practices. Staff were sampled so
10 that similar numbers (15 each) of dentists and dental hygienist/ therapists were observed. All eligible
11 adult patients (18 years or over) with appointments on the observation day were invited to participate.
12 Two weeks before their appointments, patients were sent a letter informing them of the study, a study
13 information leaflet and consent form. Patients who expressed interest in participating were given the
14 opportunity to ask any questions and give consent on the day of their appointment. The 'non-
15 participant' observer (a researcher whose background lies in sociology) attended all appointments
16 passively at a distance close enough to hear the conversation to take comprehensive field notes. A brief
17 analysis of observations was conducted as soon as possible after the observation (the same or
18 following day).
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26 Observations were followed by interviews on the same day with four dentists and four dental
27 hygienists/therapists. Staff commented on the encounters and shared their views on what had taken
28 place. Questions asked at the post-observation interview were influenced by the nature of the activity
29 in the encounters, the team member's attitude, expectations and impressions and reflections of the
30 experience. Interviews were recorded and transcribed verbatim.
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36 Interviews were also conducted with patients, other lay people, commissioners and dental team
37 members. Lay people were recruited in two ways: (i) practices mailed information packs to patients;
38 (ii) Focus groups were held with groups attending a community centre, including one for parents with
39 young children and another for older residents. In addition, snowball sampling entailed existing
40 participants passing the study information and the researcher's contact details on to acquaintances.
41 Participants should be aged 16 years and over. People with no natural teeth were excluded.
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47 Interviews and focus groups followed a topic guide, partly informed by the theoretical framework and
48 supplemented with themes that emerged from the observations and previous interviews. Interviews
49 with dental team members took place at the dental surgery, while interviews with patients took place
50 in patients' homes. All were recorded and transcribed verbatim. Interviews lasted between 15 and 70
51 minutes.
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56 The Andersen Behavioural model of access was employed as the theoretical framework for the
57 qualitative analysis (Figure 1). The model sees access as *'the use of personal health services and
58 everything that facilitates or impedes their use'*²².
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3 The model has evolved in line with advances in understanding to incorporate the interaction between
4 individual, health care system and external environment²²⁻²⁴. Later versions introduced health and
5 patient satisfaction as desirable outcomes, said to be determined by predisposing and enabling factors,
6 behaviours and need. Many studies in health care, including dentistry, support its use²⁵⁻²⁶.
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21 People may be predisposed to accessing care as a result of their demographic factors, social
22 environment and beliefs. Enabling factors include policies, facilities, staff finance, and the organisation
23 of services that might influence utilisation²⁴. From this perspective the INCENTIVE contract is an
24 enabling factor with policy, financial and organisational facets^{1,3,19}. Health needs may include health
25 education, disease prevention, diagnosis, treatment, rehabilitation and palliative care. Andersen
26 distinguished between evaluated (professionally defined, or normative) and perceived (personally
27 defined or felt) need. In turn, these components could influence personal and professional health
28 behaviours. Personal behaviours are activities that shape health status, such as oral hygiene, diet and
29 tobacco use. Health service use is treated as behaviour in itself. Professional behaviours relate to
30 processes such as health education, communication and prescribing. The maintenance and
31 improvement of health should be the primary outcome of access, thus the outcomes are (patient)
32 perceived and (clinician) evaluated health status and patient satisfaction. An important feature of the
33 model is its recursive nature with feedback loops so that the outcomes of access may influence future
34 predisposing and enabling factors, population needs and use of services.
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45 Framework analysis was used to induce the results from the original accounts within the structured
46 policy focus of the research²⁷. Our intention was to explore the effect of the contract as an enabling
47 factor, interacting with other stages of the model. While Andersen's model guided the analysis, it was
48 refined as required to identify the thematic framework. Data were indexed and charted under
49 subheadings derived from the framework to enable a process of constant comparison across themes
50 and cases. Thus, the framework analysis served to either confirm or to challenge the model, with
51 deviant case analysis used to add new categories or revise it. The validity of the findings was supported
52 by discussion of interim and final results for triangulation and corrections with participants in focus
53 groups. The results were also compared against existing knowledge, such as the evaluations of the
54 NHS Dental Contract Pilots⁵.
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3 Ethics approval was obtained from the National Research Ethics Service (NRES) Committee (London –
4 Bromley, 12/LO/0205) on 5th April 2012.
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7 ***Patient and Public Involvement (PPI)*** 8 9

10 Throughout the research cycle patient contributors worked as integral members of the research team
11 from conception of the research idea to shape our research questions and aid delivery, project
12 management and final data interpretation through to reporting. They ensured our research was of
13 relevance to patients and the NHS. Specifically patient contributors: Helped identify and prioritise the
14 research questions and develop the research design. (e.g. the sampling matrix was co-designed); were
15 members of the study advisory group; and co-developed participant information leaflets and
16 dissemination materials.
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24 **Results** 25 26

27 Data were collected between August 2012 and February 2014. Observations were made of 30 dental
28 appointments. Eighteen lay people, 15 dental team staff (four traditional practice dentists, 8
29 INCENTIVE dentists, 2 practice managers and a dental therapist) and a member of the commissioning
30 team took part in the interviews and focus groups. The results are presented in two stages. First, the
31 major themes in the data are outlined. Secondly, the interactions between enabling and other factors
32 are described.
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37 ***Major themes*** 38 39

40 The Andersen Framework was largely sustained in the data, with the only revision being the addition
41 of trust as an outcome of access. Predisposing factors could be characterised as demographic and
42 social characteristics and beliefs. For example, family commitment could facilitate or hamper service
43 utilisation. Enabling factors fell into three sub themes of health policy, finance and organisations. The
44 influence of health policy between the extremes of the changes associated with implementation of
45 the INCENTIVE model right through to an apparent lack of policy in some TRADITIONAL practices. A
46 key part of the contract was dentists' remuneration. Traditional models were problematic for complex
47 cases, whereas INCENTIVE practices focused on the costs of OHAs and building relationships with
48 patients that would enable more prevention. Computing problems featured as organisational factors,
49 and in particular the practice software, which had not been adapted to INCENTIVE.
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3 Evaluated and environmental need and population health indicators were manifest in the data. Two
4 localities in the study are characterised by material deprivation, poor oral health and long-standing
5 under-supply of care. Unsurprisingly, this influenced dental treatment needs.
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9 An example of professional behaviour involved formally assessing patients' risk of disease. Dental
10 team members commented on the relative imprecision of the traffic light (RAG) system and its three
11 categories. Indeed attitudes and practices towards prevention varied appreciably among the dental
12 teams with one dentist noting: *I do find it hard to talk about their health – I'm trained to drill and fill.*
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16 Health outcomes and satisfaction appeared in the data, as did the concept of trust. One INCENTIVE
17 patient noted: *I do trust them here – they treated me, gave me root canal treatment and saved my*
18 *tooth, without them, I'd have been minus a few teeth and my appearance would not have been*
19 *good.*
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23 **Interactions**

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25 The INCENTIVE contract changes the finance and organisation of dental practices to implement
26 health policy. Its effects can therefore be seen as interactions between these enabling factors and
27 other stages in the model. This can be seen in enabling and pre-disposing factors and need.
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29 INCENTIVE practices had been located based on "*a robust oral health needs assessment prior to*
30 *commissioning these practices and we'd looked very closely at equity in terms of access to dental*
31 *care*" (Service Commissioner). For some participants, the INCENTIVE practices marked a shift from
32 *no dental care, whereas others moved from private to NHS provision. The new services suited*
33 *participants' needs in terms of location, personnel and ease of getting an appointment.*
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41 Effects of the INCENTIVE contract were evident on the processes of care, personal health practices
42 and the use of personal health resources. In turn, the process of delivering care appeared to be
43 affected in three ways, 1] by the use of the care pathway underpinned by the risk assessment/ RAG;
44 2] by increasing prevention communication and 3] multidisciplinary approach through wider use of
45 skill mix. Of interest the communication of the RAG ratings was not always apparent in the
46 observations and was being used solely by some of the clinicians to document progress.
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51 Participants reflected on their experiences with the pathways. Benefits included the clear link
52 between the risk assessment and care pathways. The INCENTIVE contract embedded DHSC guidance²⁶
53 so that prevention became valued standard procedure. Practitioners felt that it gave them time and
54 space to care for patients. For example, one INCENTIVE dentist noted: *Red, amber or green and then*
55 *they do get the fluoride varnish, the smoking cessation and alcohol use is being taken automatically.*
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60 This could be contrasted directly with the TRADITIONAL practices. There was an example of where the

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3 focus of care in the incentive contract had penetrated a TRADITIONAL practice, causing them to reflect
4 on their processes of care: *We are pushed towards UDAs rather than improving oral health... The*
5 *prevention emphasis is an issue – we are expected to talk about perio disease and smoking and diet*
6 *and have to squeeze that in.*
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10 The INCENTIVE practices were not mandated to use multidisciplinary teams, but did so to deliver
11 preventatively focused care. One approach was for dentists to examine patients and formulate
12 treatment plans, but some practices did not deduct the value of the delegated treatment from dentists'
13 incomes:
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18 *They readily work with each other. I mean our therapist and the hygienist are generally busy*
19 *the whole day, . . . we pay them on a fixed rate and the therapists are very happy with that*
20 *because they've got full time work, they're busy, the associates are happy because they're*
21 *not having to pay for them ..., the patients get benefit because they get access to a therapist,*
22 *... it may cost more for us to do it but it's a more sensible way of running a business because*
23 *everybody is working together for the same aim*
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30 The new contractual arrangements were seen to influence personal health practices and the use of
31 personal health resources. They also influenced outcomes of perceived and evaluated health and
32 patient satisfaction. Moreover, the interactions could ripple throughout the model to have far-
33 reaching effects. For example the RAG ratings could influence patients' perceptions of their own needs,
34 leading to personal behaviour changes and satisfaction (an outcome). As one INCENTIVE patient said:
35 *I think it's good because if you know, if someone says to you, you know on this rating you are more at*
36 *risk, you're more likely to do something about it aren't you, as opposed to someone not saying anything*
37 *to you...* For dentists use of the ratings to determine recall intervals liberated more time for the process
38 of care and allowed observation of increased health but influenced patient satisfaction both positively
39 and negatively which suggests a need to reconcile contrasting views: the ability to increase access and
40 longer intervals between assessments. In a wholly positive example, one INCENTIVE patient satisfied
41 with her own care encouraged her partner to attend so that professional behaviour enhanced
42 satisfaction to change predisposing factors to increase access to care.
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52 Discussion

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56 This study has described stakeholders' views of the INCENTIVE contracting arrangements. The ratings
57 from OHAs influenced patients' perceptions of need, which led to changes in preventive behaviour.
58 Dentists had responded to the contract in the desired direction with greater emphasis on prevention,
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3 use of the ratings in treatment planning, adherence to the pathways and the utilisation of skill-mix.
4 Participants identified increases in the capacity of practices to deliver more care as a result. These
5 changes were seen to improve evaluated and perceived health and patient satisfaction. Although
6 participant numbers were relatively modest, these findings are compatible with the first year
7 evaluations of the NHS dental contract pilots where almost three quarters of patients said they had a
8 better understanding of their oral health and had changed their behaviour⁵. Furthermore, analysis of
9 OHAs and reviews suggested that RAG ratings improved for small numbers of patients, within two
10 years⁴. Better health and satisfaction increased the predisposition to visit the dentist. These findings
11 demonstrate the potential for a new contract to increase access and to improve health.
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19 Whilst these data are encouraging for continued contract reform, several areas were identified as
20 requiring more consideration, where NHS England, dental teams and the public may need more
21 support. The practices had been placed in areas of high need. As well as meeting immediate needs,
22 the *perception* of low availability of care may also be a barrier to access in areas that have been
23 underserved in the past. Evidence of new services is therefore needed to break this cycle. The results
24 also demonstrate direct benefits of the needs-led local service commissioning of the 2006 dental
25 contract²⁸⁻²⁹. Such local knowledge is less well utilised in the current NHS England single operating
26 model for practice commissioning³⁰, which may render the system less responsive.
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33 Participants at INCENTIVE practices reported professional and lay preventive behaviours leading to
34 better evaluated and perceived health. However, there were concerns over offering preventive advice,
35 the complexities of accounting for the patient's context, the time this took and the difficulties of
36 effective prevention, especially in areas with high levels of disease. These aspects of dentistry are
37 often presented as problems, sometimes beyond the scope of practitioners, rather than part of their
38 job¹⁶. This is a key issue if dentistry is to refocus on prevention. These and other data indicate that
39 change is possible if it is encouraged by the right contractual model. Education may also be required
40 to support contractual drivers. Neither one alone is likely to be sufficient. A Cochrane Review³¹
41 concluded that educational meetings had a small effect on professional practice and health outcomes
42 but the effects were likely to be smaller still for complex behaviours. Both a systematic review of
43 incentives to follow best practice in health care and a Cochrane review of the effect of remuneration
44 on primary care dentists' behaviour cited within it^{12,32} concluded that financial incentives can have a
45 'modest' effect on improving the quality of healthcare.
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56 The emphasis on OHAs and pathways was a key feature of INCENTIVE and the DHSC contract pilots
57 and subsequent prototypes⁵. Some patients were not aware of the RAG ratings; others perceived them
58 to alert them to their preventive needs and to be a motivator. We specifically enquired about the RAG
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3 ratings when triangulating the data in focus groups with dental staff. There was near universal use of
4 the ratings as a decision aid (as evident in the data), but their use in patient communication had
5 decreased over time. Dental teams may need clarification of whether and how the ratings are
6 supposed to be communicated to patients. The small number of rating categories concerned some
7 dentists, especially for patients with immutable risk factors such as general health problems. Dentists'
8 concerns might be alleviated by the addition of new categories. Alternatively, they may become used
9 to this system and gain confidence in over-riding the rules of the pathway. Their reluctance to do this
10 may stem from the requirement to justify doing so. Dentists who engaged in the contract pilots
11 requested reassurance about exercising clinical judgement in deviating from recommendations³³, first
12 that there would be no medico-legal repercussions provided there was evidence of clinical justification;
13 and second, that they would not be penalised contractually.

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Dental therapists increased the availability of care and patient satisfaction. Whilst contract reform is
seen to play a key role in use of wider dental team skill mix and enabling different models of care³⁴
use of skill-mix is exquisitely sensitive to contracting and practice finance³⁵ Practices had increased
their utilisation of wider skill mix by not reducing the payments to dentists who delegated care. Paying
two staff members for the shared treatment incentivised referral across the team and also liberated
dentists' time for patient OHAs and more remunerative complex treatments. The impact of funding
arrangements on dental practice is well known, and dentists must reconcile the business and other
elements of their practices³⁶. Dentists could see how the new contract carried the potential for
greater value for money and reduce unnecessary treatment, but there were concerns that the time
and costs of the OHAs had been under-estimated. This was also a concern in the dental contract pilots
and was evident as reduced patient access^{33,37}. This financial risk may be particularly relevant to new
practices. The pilots were conducted in existing practices and experienced falls in access. However,
the challenges may be even more severe in new practices (such as the INCENTIVE practices), where
all the patients required initial assessments and were more likely to have high treatment needs
necessitating more visits. This consideration goes further than dentists' incomes as concerns about
costs were seen to influence practitioner behaviour. These concerns support the notion of assigning
contract values according to patient needs, which in the contract prototypes is achieved by weighting
the capitation element by patient characteristics of age and deprivation status³⁷.

The Andersen Model provided a useful taxonomy for the data and allowed identification of the effects
of the new contract. This fit is unsurprising as the model was developed over a forty-year period and
remains amongst the most widely cited models of access to health care^{23,24,26,38}. Theoretical models
may be tested empirically or by looking for logical coherence³⁹. The Andersen model is somewhat

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3 general with overlapping dimensions and others (e.g. social capital) not explicitly incorporated²⁶. Very
4 little is said about how demographic variables may exert effects and why³⁸. A new factor in these data
5 ('Trust') is not explicit in the model but could be regarded as both a belief and an outcome of care³⁹.
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7 Dimensions also overlap in the model where dissimilar concepts are grouped together (personal
8 health practices and health service use, perceived and evaluated health and satisfaction). This is
9 important because empirical testing demands careful specification of inclusive relationships and to a
10 certain extent this confounded testing of this model³⁸. One consequence of this might be that the
11 model yields very different results when cross national comparisons are made⁴⁰.
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17 **Conclusion**

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19 The incentive-driven contract influenced access to dental care. Participants associated it with more
20 access, greater use of skill mix and improved health outcomes. These outcomes fed back to shape
21 predispositions to visit the dentist.
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25 The policy context in which the INCENTIVE study was funded has remained remarkably constant ever
26 since. The Steele Report of 2009¹ advocated commissioning to align dentistry with the rest of NHS
27 services and to commission for health outcomes; to develop contracts rewarding activity, quality and
28 oral health improvement. It recommended that payments explicitly recognise prevention and reward
29 the contribution of the dental team to improvements to oral health, reflected in patient progression
30 along the pathway, adherence to clinical guidelines and the achievement of expected outcomes¹. The
31 contract prototypes now being tested³⁷ retain the same ethos of shifting NHS dentistry towards
32 prevention and oral health rather than treatment and repair through a new clinical pathway and new
33 remuneration models. Despite pre-dating the Steele report the INCENTIVE contracts were forerunners
34 of these new incentive-driven contracts. Thus, our findings remain directly relevant to the evolution
35 of the NHS dental contract.
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54 Health Services and Delivery Research programme or the Department of Health.
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Contributor-ship statement

Peter Robinson led the qualitative study. He designed the study, collected data, oversaw the analysis and interpretation and drafted the paper. Gail Douglas designed the study, collected data, and input to the interpretation and analysis and to the paper. Barry Gibson designed the study, collected data, and input to the interpretation and analysis and to the paper. Jenny Godson designed the study, input to the interpretation and analysis and to the paper. Karen Vinall-Collier designed the study, collected data, and input to the interpretation and analysis and to the paper. Sue Pavitt designed the study and input to the interpretation and analysis and to the paper. Claire Hulme was chief investigator for the overall study, designed the study and input to the interpretation and analysis and drafted the paper.

Competing interests

All authors have completed the International Committee of Medical Journal Editors (ICMJE) uniform disclosure form at http://www.icmje.org/coi_disclosure.pdf. Jenny Godson was employed within the Primary Care Trust commissioning the dental services during the conduct of the study; Claire Hulme and Sue Pavitt were on NIHR research boards during the conduct of the study . There were no other financial relationships with any organisations that might have an interest in the submitted work in the previous three years and no other relationships or activities that could appear to have influenced the submitted work.

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Data sharing statement

Patient-level data are available from peter.g.robinson@bristol.ac.uk. Participant consent for data sharing was not obtained but the data are anonymised.

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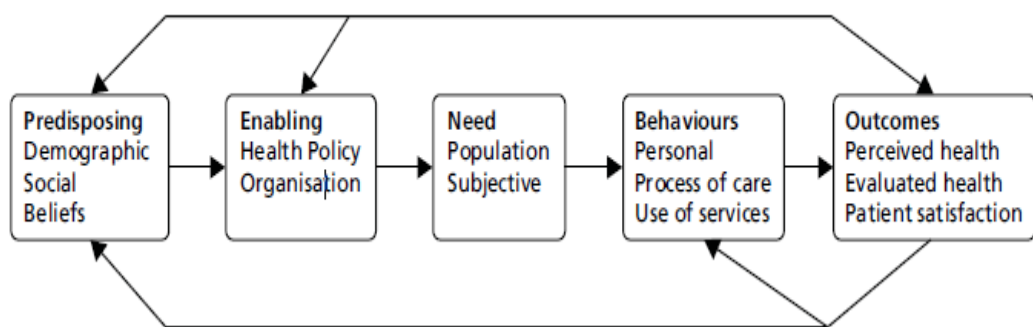
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Figure 1: Andersen’s Behavioural model of access (adapted from Baker ²⁶)



For peer review only

Reporting checklist for qualitative study.

Based on the SRQR guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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	Reporting Item	Page Number
Title		1
	#1 Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g. ethnography, grounded theory) or data collection methods (e.g. interview, focus group) is recommended	
Abstract		2
	#2 Summary of the key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results and conclusions	
Introduction		3-4
Problem formulation	#3 Description and significance of the problem / phenomenon studied: review of relevant theory and empirical work; problem statement	

1	Purpose or research	#4	Purpose of the study and specific objectives or	4
2	question		questions	
3				
4	Methods			
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7	Qualitative approach and	#5	Qualitative approach (e.g. ethnography, grounded	4-6
8	research paradigm		theory, case study, phenomenology, narrative	
9			research) and guiding theory if appropriate; identifying	
10			the research paradigm (e.g. postpositivist,	
11			constructivist / interpretivist) is also recommended;	
12			rationale. The rationale should briefly discuss the	
13			justification for choosing that theory, approach,	
14			method or technique rather than other options	
15			available; the assumptions and limitations implicit in	
16			those choices and how those choices influence study	
17			conclusions and transferability. As appropriate the	
18			rationale for several items might be discussed	
19			together.	
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27	Researcher	#6	Researchers' characteristics that may influence the	5
28	characteristics and		research, including personal attributes, qualifications /	
29	reflexivity		experience, relationship with participants,	
30			assumptions and / or presuppositions; potential or	
31			actual interaction between researchers'	
32			characteristics and the research questions, approach,	
33			methods, results and / or transferability	
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39	Context	#7	Setting / site and salient contextual factors; rationale	5
40				
41	Sampling strategy	#8	How and why research participants, documents, or	4-5
42			events were selected; criteria for deciding when no	
43			further sampling was necessary (e.g. sampling	
44			saturation); rationale	
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48	Ethical issues pertaining	#9	Documentation of approval by an appropriate ethics	7
49	to human subjects		review board and participant consent, or explanation	
50			for lack thereof; other confidentiality and data security	
51			issues	
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55	Data collection methods	#10	Types of data collected; details of data collection	4-7
56			procedures including (as appropriate) start and stop	
57			dates of data collection and analysis, iterative	
58				
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1		process, triangulation of sources / methods, and	
2		modification of procedures in response to evolving	
3		study findings; rationale	
4			
5	Data collection	#11 Description of instruments (e.g. interview guides,	5
6	instruments and	questionnaires) and devices (e.g. audio recorders)	
7	technologies	used for data collection; if / how the instruments(s)	
8		changed over the course of the study	
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12	Units of study	#12 Number and relevant characteristics of participants,	7
13		documents, or events included in the study; level of	
14		participation (could be reported in results)	
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17	Data processing	#13 Methods for processing data prior to and during	6
18		analysis, including transcription, data entry, data	
19		management and security, verification of data	
20		integrity, data coding, and anonymisation /	
21		deidentification of excerpts	
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26	Data analysis	#14 Process by which inferences, themes, etc. were	5-6
27		identified and developed, including the researchers	
28		involved in data analysis; usually references a specific	
29		paradigm or approach; rationale	
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33	Techniques to enhance	#15 Techniques to enhance trustworthiness and credibility	6
34	trustworthiness	of data analysis (e.g. member checking, audit trail,	
35		triangulation); rationale	
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38	Results/findings		
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40	Syntheses and	#16 Main findings (e.g. interpretations, inferences, and	7-9
41	interpretation	themes); might include development of a theory or	
42		model, or integration with prior research or theory	
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46	Links to empirical data	#17 Evidence (e.g. quotes, field notes, text excerpts,	7-9
47		photographs) to substantiate analytic findings	
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50	Discussion		
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52	Intergration with prior	#18 Short summary of main findings; explanation of how	9-12
53	work, implications,	findings and conclusions connect to, support,	
54	transferability and	elaborate on, or challenge conclusions of earlier	
55	contribution(s) to the field	scholarship; discussion of scope of application /	
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generalizability; identification of unique contributions(s) to scholarship in a discipline or field

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4 Limitations [#19](#) Trustworthiness and limitations of findings 9-12 & 2

5
6 **Other**

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8 Conflicts of interest [#20](#) Potential sources of influence of perceived influence None
9 on study conduct and conclusions; how these were
10 managed
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14 Funding [#21](#) Sources of funding and other support; role of funders 12
15 in data collection, interpretation and reporting
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18 None The SRQR checklist is distributed with permission of Wolters Kluwer © 2014 by the Association
19 of American Medical Colleges. This checklist can be completed online using
20 <https://www.goodreports.org/>, a tool made by the [EQUATOR Network](#) in collaboration with
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