Dental recall: recall interval between routine dental examinations

NICE guideline

Second draft for consultation, May 2004

> If you wish to comment on the recommendations, please make your comments on the **full** version of the draft guideline.

Contents

The principle underlying this guideline is the individualisation of recall intervals, reflecting the preventive philosophy outlined in *NHS Dentistry: Options for Change* (Department of Health 2002). The recommendations contained in this guideline should be seen as an integral part of the evolution of NHS dentistry towards a more preventive-oriented and clinically effective way of meeting patients' needs. The guideline recommendations are designed to assist dentists in using their clinical judgment to assign recall intervals that are appropriate to the needs of individual patients. Patients should be informed that a single 'set' recall interval for their entire lives may not be deemed appropriate and that the recall interval may vary over time to take into account any changes in their level of risk of or from oral disease. These recommendations are based on a review of the scientific literature that was considered by the Guideline Development Group (GDG) in the context of its collective clinical expertise and views on patient preferences. The grading scheme used for the recommendations (A, B, C, D or good practice point [GPP]) is described in Appendix A; a summary of the evidence on which the guidance is based is provided in the full guideline (see Section 5).

1   Guidance

This guidance is divided into two sections (Sections 1.1 and 1.2). Section 1.1 contains the clinical recommendations. Section 1.2 discusses how the clinical recommendations can be implemented in practice. A 'checklist' is provided that will assist clinicians in the process of assigning a recall interval for a patient. The contents of the checklist and the manner in which it should be used when assessing a patient's risk of or from dental disease are outlined. A diagram is then provided that illustrates and summarises for clinicians the process of selecting, agreeing and reviewing appropriate recall intervals. Lastly, in Section 1.2, a series of clinical scenarios are presented to illustrate how recall interval selection will work in practice when the guidance is followed.

1.1 Clinical recommendations

1.1.1 Patients should be informed that a single 'set' recall interval for their entire lives may not be deemed appropriate and that the recall interval may vary over time to take into account any changes in their level of risk of or from oral disease. **[GPP]**

1.1.2 The recommended interval between oral health reviews should be determined specifically for each patient on the basis of disease levels and risk of or from dental disease. **[D]**

> This interval may vary over time depending on the state of the patient's oral health, their risk of or from dental disease, increasing understanding about the appropriateness of previously used intervals and the preference of the patient. When deciding on an appropriate interval, dentists should consider the modifying factors in the checklist presented in Section 1.2.1.5.

1.1.3 During an Oral Health Assessment or Oral Health Review, the dental team (as led by the dentist) should ensure that comprehensive histories are taken, examinations conducted and initial preventive advice is given. This will allow the dental team and the patient (or parent/guardian of the patient) to discuss, where appropriate:

- the effects of oral hygiene, diet, fluoride use, tobacco and alcohol on oral health **[B]**
- the risk factors (in the checklist) that may potentially influence a patient's oral health and the implication these will have for deciding the appropriate time interval for their next routine visit **[B]**
- the outcome of previous care episodes and the suitability of previously recommended intervals **[GPP]**
- the patient's ability/desire to visit the dentist at the interval indicated by their individualised risk factors and by the clinical judgment of the dental team **[GPP]**

- the monetary cost to the patient of the Oral Health Assessment or Review and any subsequent treatments. **[GPP]**

1.1.4 The interval before the next Oral Health Review (or Assessment) should be chosen, agreed and recorded. This choice of interval should be made either at the end of an Oral Health Review (or Assessment) if no further treatment were indicated, or at the completion of a specific treatment journey. **[GPP]**

1.1.5 The recommended shortest and longest intervals between routine oral health reviews are as follows:

- The shortest interval between oral health reviews for all patients should be 3 months. **[GPP]**

The GDG considered that a recall interval of less than 3 months was not normally needed for a 'routine dental recall'. The GDG acknowledged that there may be circumstances where a patient may need to be seen more frequently. However, this would usually be for a specific reason or reasons (for example, actual disease management, part of current dental interventions, intervals between examinations related to ongoing courses of treatment, emergency dental interventions, intervals between episodes of specialist care) rather than for an Oral Health Review as such.

- The longest interval between Oral Health Reviews for people below 18 years of age should be 12 months. [GPP]

There is evidence that the rate of progression of dental caries can be more rapid in children and adolescents than in many older persons. The rate of progression appears to be faster in primary teeth than in permanent teeth. The latter may be due to anatomical differences between primary and permanent teeth, specifically, the thinner enamel and dentine in primary teeth and their broader proximal contacts (see full guideline).

Recall intervals of no longer than 12 months afford clinicians the opportunity to deliver and reinforce preventive advice and to raise awareness of the importance of good oral health. The GDG considers that this is particularly important in young children who are at a stage in their personal development when all the foundations for life-long dental health are laid down (that is, dietary habits, oral hygiene practices, etc.).

Periodic developmental assessment of the dentition is required in children.

- The longest interval between Oral Health Reviews for people 18 years old and over should be 24 months. **[GPP]**

The GDG considered that recall intervals for patients who repeatedly demonstrated that they can maintain oral health can be extended over time up to an interval of 24 months. However, it was felt that intervals beyond 24 months could unacceptably diminish the professional relationship between dentist and patient. In addition, given that patients' lifestyles may change, it was considered undesirable to extend recall intervals beyond this period.

1.1.6 The specific recommended interval between routine Oral Health Reviews for a patient at a specific point in time should be tailored to meet their needs on the basis of an assessment of disease levels and risk of or from dental disease. This assessment should incorporate the best available scientific evidence and the individual clinical judgement and expertise of dental personnel, and take into consideration the values and expectations of the patient. **[GPP]**

The GDG has prepared examples of how this process can best be achieved and communicated to patients and the dental team. These examples are set out in Section 1.2.

1.1.7 For practical reasons, patients should be assigned (at a particular point in time) a recall interval of 3, 6, 9 or 12 months if they are below 18 years

6

of age, or 3, 6, 9, 12, 15, 18, 21 or 24 months if they are 18 years or over. **[GPP]**

1.1.8 The dentist should record the assigned recall interval within the current record-keeping system, as well as the patient's agreement or disagreement with it. **[GPP]**

1.1.9 The recall interval agreed and assigned will be reviewed again, at the next Oral Health Review, to learn from the patient's responses to the oral care provided and the health outcomes achieved. This feedback and the findings of the Oral Health Review will be used to adjust the next recall interval chosen. **[GPP]**

1.2 How to identify the risk factors

1.2.1 Introduction

1.2.1.1 The selection of an appropriate recall interval for a patient is a multifaceted clinical decision that is difficult, if not impossible, to evaluate mechanistically. In making that decision, clinicians must integrate their own clinical expertise (the proficiency and judgment they have acquired through clinical experience and clinical practice) with the best available clinically relevant scientific evidence relating to a patient's oral and general health. This guideline aims to assist clinicians in this decision-making process by:

- advocating that clinicians should carry out a risk assessment for each patient
- identifying specific factors that form an integral part of this risk assessment and that should be taken into account when assigning a recall interval for each patient.

1.2.1.2 The risk assessment process and its application to the selection of recall intervals is founded on the premise that the frequency and type of oral health supervision needed by a patient depends on the

likelihood that specific diseases or conditions may develop. When carrying out a risk assessment for a patient, clinicians should examine the patient for risk factors that may have a negative impact on oral health and protective factors that may promote oral health. By carrying out a risk assessment for each patient every time they attend for an oral health review, the dental professional will be better positioned to make specific preventive and treatment recommendations, and to assign a recall interval for the patient that is particular to their individual needs (Bright Futures 1996).

1.2.1.3   A number of factors that may modify the choice of recall interval and that feed into the risk assessment process are identified in the form of a checklist presented on the following pages. It should be noted that this checklist is merely intended as a guide to assist the clinician and the dental team when carrying out a risk assessment. It is by no means intended to be an exhaustive list encompassing all of the factors that may influence the choice of a recall interval for a patient. Furthermore, it should be noted that there is insufficient evidence to assign a 'weight' to individual factors included in the checklist and dentists must use their clinical judgment to weigh the risk and protective factors for each patient.

1.2.1.4   In addition, although the Guideline Recommendations are firm, we recommend further research to explore the most effective and practical mechanisms for implementing the key recommendations contained in this guideline in general dental practice. Any proposed delivery mechanism, such as the checklist, must be rigorously piloted and evaluated. We have presented this checklist and the accompanying text as a preliminary guide to assist clinicians in assigning recall intervals. We would also consider it appropriate for patients to receive a copy of their checklist on request.

1.2.1.5   The checklist outlined overleaf is followed by explanatory text that clarifies each individual heading and entry in the checklist. A further

section then explains how this checklist should be used as part of a risk assessment process for each patient.

Checklist of modifying factors

Patient's Name: .... Date of birth: ....

Oral Health Review date:	Date		Date		Date	
	Yes	No	Yes	No	Yes	No
Medical history						
Conditions that potentially put the patient's general health at increased risk if they develop dental disease/infection (e.g. cardiovascular disease, bleeding disorders, immunosuppression)	☐	☐	☐	☐	☐	☐
Conditions that increase a patient's risk of developing dental disease (e.g. diabetes, xerostomia, long term intake of medications containing sugar, epilepsy {phenytoin therapy and gingival overgrowth}, acid reflux leading to tooth surface loss)	☐	☐	☐	☐	☐	☐
Conditions that may complicate the provision of dental treatment or may compromise the patient's ability to maintain their oral health (e.g. special needs, cleft lip/palate, severe malocclusion, anxious./nervous/phobic conditions)	☐	☐	☐	☐	☐	☐
Social history						
High caries in mothers and siblings	☐	☐	☐	☐	☐	☐
Tobacco use	☐	☐	☐	☐	☐	☐
Excessive alcohol use	☐	☐	☐	☐	☐	☐
Family history of chronic or aggressive (early onset/juvenile) periodontitis	☐	☐	☐	☐	☐	☐
Dietary habits						
High sugar intake	☐	☐	☐	☐	☐	☐
Exposure to fluoride						
Use of fluoride toothpaste	☐	☐	☐	☐	☐	☐
Other sources of fluoride eg live in a water-fluoridated area	☐	☐	☐	☐	☐	☐

Clinical evidence /dental history

	Yes	No	Yes	No	Yes	No
Recent and previous caries experience						
New lesions since last check-up	☐	☐	☐	☐	☐	☐
Anterior caries or restorations	☐	☐	☐	☐	☐	☐
Premature extractions due to caries	☐	☐	☐	☐	☐	☐
Past root caries or large number of exposed roots	☐	☐	☐	☐	☐	☐
Heavily restored dentition	☐	☐	☐	☐	☐	☐
Recent and previous periodontal disease experience						
Previous history of periodontal disease	☐	☐	☐	☐	☐	☐
Evidence of gingivitis	☐	☐	☐	☐	☐	☐
Presence of periodontal pockets (BPE code 3 or 4) and/or bleeding on probing	☐	☐	☐	☐	☐	☐
Presence of furcation involvements or advanced attachment loss (BPE Code *)	☐	☐	☐	☐	☐	☐
Mucosal lesions						
Mucosal lesion	☐	☐	☐	☐	☐	☐
Plaque						
Poor level of oral hygiene	☐	☐	☐	☐	☐	☐
Plaque retaining factors (e.g. wearing of orthodontic appliances)	☐	☐	☐	☐	☐	☐
Saliva						
Low saliva flow rate	☐	☐	☐	☐	☐	☐
Erosion and tooth surface loss						
Clinical evidence of tooth wear	☐	☐	☐	☐	☐	☐
Recommended recall interval for next oral health review:	months		months		months	

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Notes:

Dental recall (NICE guideline): draft for second consultation May 2004

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1.2.2 **Explaining the Checklist**

The headings 'Medical history', 'Social history', 'Dietary habits' and so on, are presented in the order in which the clinician would normally acquire and record information at an oral health review. In other words, the clinician would typically commence an oral health review by inquiring about the patient's medical history (and any change in that medical history since the last oral health review), followed by an assessment of the social history and dietary habits of the patient and their use of or exposure to fluoride. The clinician would then glean clinical evidence and the patient's dental history from their clinical examination of the patient by recording the patient's past disease experience, detecting the signs and symptoms of new disease, and determining the progression or lack of progression of existing or early disease that may have been noted and preventively managed at the last visit. During the course of the clinical examination, the clinician would check the patient's oral hygiene and plaque levels, observe their saliva flow rate, and record any evidence of erosion and tooth surface loss.

The various entries in the checklist that appear under each of these headings pertain to factors that influence a patient's risk of or from dental disease. These factors have been selected on the basis of evidence reviewed for this guideline and take into account the collective expert opinion of the GDG.

1.2.2.1 *Medical history*

1.2.2.1.1 Medically compromised patients may be at increased risk of or from dental disease. We have provided guidance for clinicians by identifying conditions that may increase a patient's risk of or from dental disease and for whom more frequent recalls may be required. This is not intended to be an exhaustive exploration of all medical conditions that may have an impact on the dental management of a patient. If the dental team are concerned about aspects of a patient's medical history, they should consult with the patient's doctor or specialist when deciding on the delivery of appropriate care.

1.2.2.1.2 We consider it advisable for clinicians to assess a patient's medical history under the three headings identified in the checklist, as follows.

Conditions that potentially put the patient's general health at risk if they develop dental disease or infection. These conditions include, but are not limited to:

- congenital/acquired cardiovascular disease carrying an increased risk of infective endocarditis
- haematological conditions/bleeding disorders/anti-coagulant therapy (for example, haemophilia, Von Willebrands disease, homozygous sickle cell anaemia, thalassaemia, cyclic neturopenia)
- immunosuppression (for example, HIV/AIDS, transplant patients).

For patients with the above conditions, it is imperative that emphasis be placed on primary prevention (the prevention of oral disease before it occurs) and secondary prevention (limiting the progression and effect of oral diseases at as early a stage as possible after onset), thus minimising the necessity for operative/surgical intervention.

Conditions that increase a patient's risk of developing dental disease. These conditions include, but are not limited to the following.

- Diabetes. People with diabetes (both type I and type II) are at increased risk of developing destructive periodontal disease. This may be due to an altered periodontal tissue response to plaque. Therefore, individuals with diabetes may need a more frequent recall. Inadequate plaque control and the presence of other risk factors will modify the recall interval further.
- Xerostomia or 'dry mouth' can occur as a side-effect of cancer treatments such as head and neck radiotherapy. It may also be associated with specific conditions such as Sjögrens Syndrome or particular drug therapies (for example, anti-cholinergics, tricyclic anti-depressants, anti-psychotics, tranquillizers,

hypnotics, anti-hypertensives, diuretics, anti-parkinsonian drugs, appetite suppressants, muscle relaxants, expectorants). Patients with inadequate salivary function and reduced salivary flow rate are at increased risk to dental caries because of the loss of cleansing and buffering action of saliva, and may require more frequent oral health supervision.

- Conditions requiring the use of long-term medications containing glucose, sucrose or fructose. These patients are at increased risk to dental caries because of the enhanced cariogenic challenge resulting from the frequent sugar intake. Extended recall intervals are contraindicated in such patients because of the potential for rapid progression of caries.

- Epilepsy. In patients with epilepsy, gingival overgrowth may occur as a side effect of drug therapy, specifically phenytoin. The risk factor most associated with gingival overgrowth in such patients is poor oral hygiene. Such patients may benefit from more frequent recalls to deliver, monitor compliance with, and to reinforce oral hygiene instruction. However, although improved plaque control may treat the inflammatory component of gingival overgrowth, it may be of little benefit for reducing the fibrous component.

- Acid reflux into the mouth increases a patient's risk of developing tooth surface wear, and can occur as a consequence of disorders such as gastro-oesophageal reflux. It is also associated with eating disorders, especially bulimia. Such patients may benefit from more frequent recall to reinforce preventive advice designed to limit the erosive effect of acid reflux (for example, advising patients that they should not brush immediately after vomiting or acid reflux). Regular follow up is essential in such patients to ascertain whether the dentition is stable or deteriorating.

Conditions that may complicate the provision of dental treatment or may compromise the patient's ability to maintain their oral health. These conditions include:

- special needs (a person with special needs has a mental or physical impairment which has a substantial and long-term adverse effect on their ability to carry out normal day-to-day activities)
- cleft lip/palate, severe malocclusion
- anxious/nervous/phobic conditions.

For all of the above patients, emphasis should be placed on primary prevention (the prevention of oral disease before it occurs) and secondary prevention (limiting the progression and effect of oral diseases at as early a stage as possible after onset), thus minimising the necessity for operative/surgical intervention.

The provision of the latter may be extremely difficult in such patients and may, on occasions, necessitate a general anaesthetic with its attendant risks. For extremely anxious, nervous, or phobic patients, more frequent recalls may provide an opportunity for primary prevention and allow for gradual acclimatization to dental procedures via non-invasive preventive interventions.

1.2.3 Using the checklist as part of a risk assessment for each patient

This checklist forms part of a risk assessment process that can be thought of as involving three stages.

1. **Identification** (identifying the risk and protective factors present in each patient)
2. **Evaluation** (evaluating these factors in the context of the patient's past and current disease experience)
3. **Prediction** (using all of the above information to predict the potential future occurrence of disease in the patient and to assign an appropriate recall interval)

1.2.3.1 *Identification*

1.2.3.1.1 The first stage in the risk assessment process involves using the checklist to identify in each patient the risk and protective factors that may negatively or positively influence their oral health. It is important to appreciate that, because some of these factors relate to personal and behavioural habits and practices (for example, dietary habits, oral hygiene practices, smoking, alcohol consumption etc), the information provided by the patient may not be entirely accurate. There is often a marked discrepancy between 'reported' and 'actual' behaviour and some patients may also be unwilling or may exercise their right not to disclose this information. Thus, although these factors can be used to give an indication of a patient's risk status, their overall usefulness in the process of assessing a patient's risk of developing dental disease may be compromised by the validity of the data collected.

1.2.3.1.2 Furthermore, a number of the factors identified in the checklist are necessary but are not sufficient to produce dental disease. They are necessary in the sense that disease cannot occur in the absence of these factors. However, they are not sufficient in the sense that

disease does not inevitably occur in the presence of these factors. For example, dental plaque is recognised as a key aetiological factor in both periodontal disease and dental caries. However, this does not mean that all patients with poor oral hygiene and plaque control will develop periodontal disease and dental caries. In the case of periodontal disease, the attack from dental plaque, the response of the host and the modifying effect of risk factors will account for a variety of disease patterns. Dental caries is also a multifactorial disease and a number of other factors must be acting concurrently for dental caries to occur. Thus, it is frequently the combination of factors present in a patient rather than individual factors per se that are important in terms of their potential impact on that patient's oral health. Hence, the second stage in carrying out a risk assessment for a patient must involve 'weighing and evaluating' the potential impact (both past and present) of these combinations of factors.

1.2.3.2 *Evaluation*

1.2.3.2.1 Having identified what factors are present or absent in a patient, the clinician must relate this information to the patient's past and current disease experience. This is readily achieved by considering these factors in the context of the clinical evidence obtained from a clinical examination of the patient to detect the signs and symptoms of their past and recent/current disease experience. The patient's past disease experience essentially represents the cumulative effect of all risk and protective factors, known and unknown, to which an individual has been exposed over their lifetime. Past caries experience is the most reliable predictor of future caries experience. However, exposure to risk and protective factors and hence disease activity may vary over time, thus reducing the predictive power of past disease experience at the individual level (Hausen 2003). For example, even if a patient has had no caries experience in the past, if they have developed new carious lesions since their last oral health review, this is a clear indication that there has been recent exposure to risk factors sufficient to initiate and produce the disease

process. In this situation, owing to a change in the patient's circumstances (exposure to risk factors), the non-occurrence of disease in the past has not acted as a reliable predictor of the non-occurrence of future disease. This serves to emphasise the importance of carrying out a risk assessment every time a patient attends for an oral health review and of evaluating the patient's present disease experience, which is a clinical manifestation of the effects of recent and current exposure to risk and protective factors.

1.2.3.3 *Prediction*

1.2.3.3.1 By relating the checklist of factors to the past and current disease experience of the patient, clinicians can then predict what the patient's future disease experience is likely to be and can decide on the frequency of recall and the type of oral health supervision that may be required by the patient in the future. The process of using all of the available information to predict the patient's future disease experience and to assign an appropriate recall interval involves the use of clinical judgment and expertise. The value and practical utility of this clinical judgment is supported by our review of the caries prediction literature. The clinical judgment of the dentist and their ability to combine risk factors, on the basis of their knowledge of the patient and clinical and socio-demographic information obtained during a clinical examination, is as good as, or better than, any other method of predicting caries risk. Hence, dentists should choose a recall interval for each patient that, according to their clinical judgment and their knowledge of the patient and their risk and protective factors, is appropriate for that patient in order to promote and maintain their oral health. This recall interval may need to change over time if the patient's risk and protective factors alter. Both clinician and patient should attempt to reduce the patient's risk factors and enhance their protective factors and alter the recall interval accordingly.

1.2.3.3.2 It is reasonable to assume that the ability of the clinician to predict the likely occurrence or non-occurrence of future disease and their ability to assign an appropriate recall interval for a patient will improve as the clinician builds up an accurate record of the patient's disease experience and determines the rate at which disease is or is not progressing over time. In this context, the longevity of the professional relationship between dentist and patient can be considered as having an important input into the choice of recall interval. By implication, the greatest uncertainty regarding what recall interval to assign for a patient will exist where the dentist is unfamiliar with the patient's disease experience, for example, when the patient is new or recent. In such circumstances, it is good practice for clinicians to manage this uncertainty by adopting a precautionary approach and assigning a conservative recall interval initially and then progressively altering this interval over time (where appropriate) on the basis of the clinical evidence obtained at each oral health review. For example, if a dentist detects a 'white spot lesion' in a new patient, the dentist will be unable to determine if this lesion has recently appeared or has been present without progressing for years. In such a situation of uncertainty, it is prudent for the clinician to err on the side of caution by applying topical fluoride, delivering preventive advice and assigning a short recall interval initially to monitor the lesion. If the lesion fails to progress over time, the recall interval can be modified accordingly.

1.2.3.3.3 The same management principles will apply for patients with a medical history that may impact on their risk of or from dental disease. The recall interval for patients with the medical conditions outlined in section 1.2.2.1 will vary from patient to patient and will depend, as emphasised above, on the clinical evidence and dental history of the patient and the presence of other risk and protective factors. For new patients with these medical conditions, clinicians should adopt a precautionary approach and assign a conservative recall interval initially, extending this interval over time in accordance
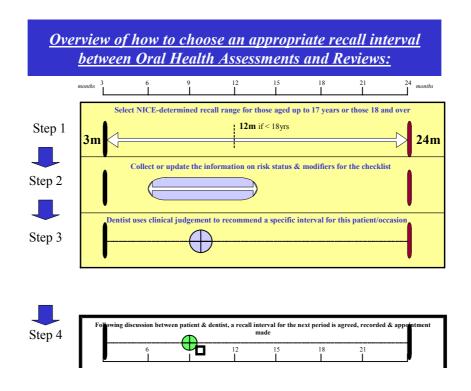
with the clinical evidence and the data obtained at each oral health review.

1.2.3.3.4 The stages in the risk assessment process outlined above represent good clinical practice. It is not desirable to be unduly prescriptive about types of patients with specific conditions or specific factors that warrant assigning a particular recall interval. The GDG are simply advocating that clinicians consider the factors outlined in the checklist each time they examine a patient and understand the importance of considering these factors in the context of the patient's past and current disease levels as determined by a careful clinical examination of the patient. Patients (or the parent/guardian of the patient) must be informed that a single 'set' interval for all patients for the whole of their lives is no longer deemed appropriate and that for any individual, this interval may vary throughout life*.*

1.2.3.3.5 It is envisaged that an experienced clinician should be able to carry out a risk assessment for each patient quickly, easily and intuitively as part of an oral health review. In order to illustrate how this can operate in practice, we have presented in the following sections:

- a diagram that demonstrates to the dental team the stages involved in selecting an appropriate recall interval for a patient
- a number of *'*clinical scenarios' involving the assignment of recall intervals. These scenarios are not intended to be an exhaustive exploration of the myriad clinical situations that dentists may encounter on a daily basis. Rather, they merely *serve to highlight the logic and rationale behind the key recommendation contained in this guideline, namely that "the recommended interval between oral health reviews should be determined specifically for each patient depending on disease levels and risk of or from oral disease."*

1.3 How to choose the recall interval

The following diagram has been designed and developed by the GDG to illustrate to the dentist and dental team the sequential process used to select a recall interval appropriate to a particular patient at a particular time. This diagram may ultimately be used as a leaflet, poster, model or interactive computer graphic.

Overview of how to choose an appropriate recall interval between Oral Health Assessments and Reviews:

Step 1 — Select NICE-determined recall range for those aged up to 17 years or those 18 and over — **3m** ... **12m** if < 18yrs ... **24m**

Step 2 — Collect or update the information on risk status & modifiers for the checklist

Step 3 — Dentist uses clinical judgement to recommend a specific interval for this patient/occasion

Step 4 — Following discussion between patient & dentist, a recall interval for the next period is agreed, recorded & appointment made

1.3.1   The first step is to consider the patient's age and the corresponding upper and lower limits stipulated in this guidance.

1.3.2   The second step involves considering the checklist of modifying factors carefully in the context of the patient's histories (medical, social and dental) and the evidence obtained during the clinical examination.

1.3.3   The third step is when the clinician (advised on many occasions by other members of the dental team) integrates all the diagnostic and prognostic information available at this particular time and uses their

clinical judgement to recommend a specific recall interval between now and the next Oral Health Review.

1.3.4 The fourth step involves discussing the recommended interval with the patient and exploring their preferences and expectations. An agreed interval should result and this will be recorded and a recall appointment made. If for any reason the patient is unable to accept the recommendation, this should also be recorded.

1.3.5 The appropriateness of the chosen interval should be considered at the next Oral Health Review in order to learn from the patient's responses to the oral care provided and the health outcomes achieved. In this way, the next interval may be adjusted accordingly, depending on the patient's ability to maintain oral health between Oral Health Reviews.

1.3.6 It may be that the interval is maintained at the same level if it is achieving its aims. Alternatively, in a patient with low disease activity, it may be possible to gradually extend the interval out towards the 24-month maximum period – once the patient and the dental team are confident that this is satisfactory. However, patients whose disease activity continues unabated in spite of attempts at preventive care may need the interval to be shortened and may need to receive more intensive preventive care and closer supervision.

1.4 Recall interval: example clinical scenarios

1.4.1 A number of clinical scenarios devised by the GDG are presented in the following sections. Additional scenarios are presented in Appendix B. These scenarios have been created in order to illustrate the process of assigning a recall interval for a patient on the basis of an assessment of their risk of or from oral disease. The scenarios are for illustrative purposes only and are by no means intended to capture every conceivable clinical situation that a dentist may encounter. Furthermore, although a specific recall interval will be agreed at the end of an Oral Health Review, patients should be informed to seek advice from a dentist if there are any significant changes in their medical history, dietary habits, oral hygiene practices etc in the interim that may influence their risk of or from oral disease. In this context, it should be appreciated that (as is the case with the current 6-month recall regime) no guarantee can be given to patients that new disease will not develop between recall visits.

SCENARIO A

Age: Patient A is 4 years old.
Attendance record: Patient A is attending your practice for the first time (for an Oral Health Assessment).
Medical history: Patient A has no medical history of note.
Social history: Patient A has two older siblings aged 7 and 10 years, who have been patients of yours for the last 2 years. Both older siblings have no decayed, missing or filled teeth and have good oral hygiene.
Dietary habits: Patient A has apparently healthy dietary habits that suggest no specific factors likely to increase risk of caries developing.
Use of fluoride: Patient A brushes with fluoride toothpaste twice daily.
Clinical evidence/dental history: No previous history of dental caries and no other factors that may increase caries risk
Plaque: Oral hygiene is good, with only minimal plaque deposits.
Saliva: No specific factors that may lead to reduced salivary flow
Other: None

Recall interval recommended by clinician for next oral health review:
6 months

Rationale: The history taking and clinical examination for this patient reveal no medical or social history of note – the patient has no cavities and has good oral hygiene and dietary practices. However, although there are no obvious risk factors as this is a 'new patient' with no established dental history, you feel it is prudent to assign a conservative recall interval of 6 months initially.

SCENARIO B

Age: Patient B is 3 years old.

Attendance record: Patient B has attended twice before, although this visit is the first time at this practice.

Medical history: Patient B has no medical history of note.

Social history: The father of Patient B is a smoker.

Dietary habits: Discussions with the mother suggests that the patient's sweet consumption is relatively low, although the review of the parents' consumption at their OHA found quite a high consumption, with sugar being used in tea and coffee.

Use of fluoride: Parents use a major brand of toothpaste, which patient B also uses, although the mother says she doesn't like the taste too much.

Clinical evidence and dental history: All primary teeth are present and there are no signs of any clinical lesions.

Plaque: Small amounts visible on the buccal sulcus around the Ds and Es.

Saliva: Nothing abnormal detected

Other: Both parents have a DMF of above 10, although they commented that they have improved their oral hygiene habits following discussions with their previous dentist. They have not had any new fillings for the past 3 years.

Recall interval recommended by clinician for next oral health review:

6 months

Rationale

While no clinical lesions have been detected, on balance, the modifying factors are slightly negative. Oral hygiene is not particularly good, and the child is probably not using enough toothpaste as 'she doesn't like the taste'. Oral hygiene instruction and dietary advice is being offered (to parent and child) as part of the treatment being proposed following the present visit. Should there be no lesions present and OHI has improved at the next visit, then it may be possible to extend the recall interval.

SCENARIO C

Age: Patient C is 11.5 years old

Attendance record: Patient C is attending your practice for the first time (for an Oral Health Assessment).

Medical history: Patient C has no medical history of note.

Social history: Patient C has two older siblings aged 13 and 15 years, who have been patients of yours for the last 2 years. Both older siblings have had decay in the primary and permanent dentition. The patient's mother also has a high DMF.

Dietary habits: Patient drinks carbonated drinks at least 3 times per day.

Use of fluoride: Irregular brushing and resident in an area with sub-optimal levels of fluoride in the water supply.

Clinical evidence/dental history: Three restorations present in primary teeth and there is one carious lesion requiring restoration. There is gingival inflammation in all areas.

Plaque: Oral hygiene is poor.

Saliva: No specific factors that may lead to reduced salivary flow.

Other: None

Recall interval recommended by clinician for next oral health review:

3 months

Rationale: The presence of a large number of additional risk modifiers (including that this is the patient's first visit to the practice) indicates that a short review interval would be prudent, hence 3 months.

SUBSEQUENT HISTORY: After pro-active prevention, patient's compliance is good, drastically reducing in-between meals drinking of carbonated drinks, improving oral hygiene and using a fluoride toothpaste regularly twice daily. Over subsequent visits no new caries is seen and the recall interval is extended to 6 months.

SCENARIO D

Age: Patient D is 14 years old.
Attendance record: Patient D has been attending your practice for regular reviews since 5 years of age.
Medical history: Patient D has no medical history of note.
Social history: Patient D has one younger sibling aged 11 who is caries free. The patient's mother is also caries free.
Dietary habits: Patient D has dietary habits which suggest no specific factors likely to increase risk of caries developing
Use of fluoride: Brushing with fluoride toothpaste regularly twice daily
Clinical evidence/dental history: No previous history of dental caries and no other factors which may increase caries risk. The gingivae are healthy.
Plaque: Oral hygiene is good with only minimal plaque deposits
Saliva: No specific factors that may lead to reduced salivary flow
Other: None

Recall interval recommended by clinician for next oral health review:
12 months

Rationale: Long-standing patient in permanent dentition with known past history. No past history or current evidence of dental disease and medical history clear. No additional modifiers. Hence considered to be at low risk and review interval of 12 months seems reasonable.
SUBSEQUENT HISTORY: Patient develops new caries in two premolars at 15 years of age. It becomes apparent that a habit of frequently 'grazing' between meals has become established and the dentist also records that OH has deteriorated. The patients recall interval is reduced to 6 months. After intensive prevention, the lapses in dietary practices and oral hygiene are reversed and no new caries is subsequently seen.

SCENARIO E

Age: Patient E is a 35-year-old female.
Attendance record: Patient has been attending your practice regularly for 6 years.
Medical history: Patient has no medical history of note.
Social history: Patient does not smoke and drinks alcohol occasionally at the weekends.
Dietary habits: Patient has a healthy diet with plenty of fresh fruit and vegetables and rarely consumes sugar containing foods and drinks.
Use of fluoride: Patient brushes twice a day with a fluoride containing toothpaste.
Clinical evidence and dental history: Patient has no missing teeth and five occlusal amalgam fillings are present, all in permanent molar teeth. These fillings were placed 15 years ago and have not needed replacement over this period. All fillings are still in excellent condition. Bitewing radiographs taken 12 months ago revealed no interproximal lesions. On examination, her periodontal health is excellent (Basic Periodontal Examination code 0 all sextants) and she has not needed oral hygiene advice for over three years.
Plaque: Patient brushes twice a day and uses dental floss once a day.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall interval recommended by clinician for next oral health review:
24 months

Rationale for 24 month interval: Over a 6-year period at your dental practice, this patient has not required any restorative intervention. The patient has not had any new carious lesions over a 15-year period and has excellent oral hygiene and dietary habits. The patient's periodontal health is also excellent. The patient's dental status appears stable at this point in time suggesting that a recall interval of 24 months is appropriate for this patient.

SCENARIO F (*Altering the recall interval from 24 months to 6 months*)

Age: Patient F is a 20-year-old male
Attendance record: Patient has been attending your practice every 12 months for the last 5 years
Medical history: Patient has no medical history of note.
Social history: Patient does not smoke and drinks alcohol occasionally at the weekends.
Dietary habits: Patient reports a low frequency of intake of sugar containing foods and drinks.
Use of fluoride: Patient brushes twice a day with a fluoride containing toothpaste.

Clinical evidence and dental history: Patient has two occlusal amalgam fillings present, all in permanent molar teeth, that were placed 8 years ago. All fillings are still in excellent condition. Bitewing radiographs taken 12 months ago revealed no signs of interproximal lesions.
Plaque: Patient brushes twice a day and uses dental floss once a day. The patient's oral hygiene is excellent and he has not needed oral hygiene instruction or any debridement for three years.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall interval recommended by clinician for next oral health review:
24 months

Rationale: Over a 5-year period at your dental practice, this patient has not required any restorative intervention. The patient's past caries experience is minimal and he has not had any new carious lesions over an 8 year period and has good oral hygiene and dietary practices. The patient's periodontal health is also excellent. The patient's dental status is judged to be stable at this point in time suggesting that a recall interval of 24 months is appropriate for this patient. However, you inform the patient that they should reattend before this time if there is any change in their medical history, dietary practices etc that may impact on their oral health, or if they experience any signs or symptoms of dental disease.

24 months later: Patient F returns for an oral health review. The patient has been living away from home for the last 18 months, having just started college.

Attendance record: At the last oral health review, the patient was advised to re-attend in 24 months. Prior to this, the patient had been attending your practice every 12 months for the last 5 years.
Medical history: Patient has no medical history of note
Social history: Patient does not smoke but drinks alcohol occasionally at the weekends.
Dietary habits: Patient reports a change in dietary practices over the last 18 months. He consumes a lot of carbonated soft drinks and 'junk food.'
Use of fluoride: Patient's normal brushing routine has not been followed over the past 18 months and use of fluoride toothpaste is less frequent than previously reported.
Clinical evidence and dental history: Patient has developed one new carious lesion (requiring restorative intervention) on the occlusal surface of one molar tooth. Bitewing radiographs reveal one interproximal lesion. Two 'white spot' lesions are present on the buccal surfaces of two molar teeth. There is evidence of gingivitis in all sextants with calculus deposits on the lingual surfaces of the lower anterior teeth (BPE codes 1-2)
Plaque: Patient's oral hygiene has deteriorated over the last 18 months and he has used floss only occasionally.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall interval recommended by clinician for next oral health review:
6 months

Rationale: The patient's risk status has clearly changed since his last oral health review. The patient's altered social environment and the resultant changes in dietary and oral hygiene practices have adversely influenced his oral health. The patient subsequently undergoes a course of treatment involving restoration of the carious lesions, oral hygiene instruction debridement of all plaque and calculus, dietary advice, and the application of topical fluoride to white spot lesions. In light of the patient's recent caries experience and altered diet and oral hygiene, they are recalled for an oral health review in 6 months to reinforce preventive advice and monitor status of white spot lesions. The reason for the short recall interval is explained to the patient and they are informed that it may be possible to extend this interval in the future if dietary habits and oral hygiene improve.

SCENARIO G
Age: Patient G is a 45-year-old male.
Attendance record: Patient has been attending your practice every 6 months for five years.
Medical history: Patient has no medical history of note.
Social history: Patient does not smoke and is a moderate drinker.
Dietary habits: Patient has a healthy, balanced diet and, following dietary advice given at previous oral health reviews, confines intake of sugar containing foods and drinks to mealtimes with no between meal snacking.
Use of fluoride: Patient brushes twice a day with a fluoride-containing toothpaste.

Clinical evidence and dental history: Patient required considerable restorative work when he first attended 3 years ago and his oral hygiene at that time was poor. However, he has not experienced any new carious lesions since then, nor has any of his restorative work needed further attention. The

patient's oral hygiene has improved significantly. Bitewing radiographs reveal no approximal lesions and good alveolar bone support. The BPE demonstrates gingival bleeding in two sextants but no pocketing or attachment loss (BPE code 1).
Plaque: Patient brushes twice a day and uses dental floss occasionally. The patients oral hygiene is satisfactory, although there are plaque deposits around the cervical margins of the upper and lower molar teeth.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall interval recommended by clinician for next oral health review:
12 months

Rationale: Over a 3-year period at your dental practice, this patient has not required any further restorative intervention after their initial course of treatment. The patient has shown good compliance with dietary and oral hygiene advice given, although the patient should be helped to improve their oral hygiene around the molar teeth. The patient's dental status appears stable and after further advice in oral hygiene and the debridement of plaque deposits and you recommend that the patient attends for an oral health review in 12 months. You do not think it is advisable to increase the interval beyond 12 months as you feel it may be necessary to review oral hygiene at this time.

SCENARIO H

Age: Patient M is a 55-year-old male.
Attendance record: Patient H has been attending your practice for one year.
Medical history: Patient has no medical history of note.
Social history: Patient smokes 35 cigarettes a day and has daily alcohol.
Dietary habits: Patient has a normal diet.
Use of fluoride: Patient uses fluoride toothpaste.
Clinical evidence/dental history: Patient is partially dentate with an upper partial denture. The dentition is sound. There is no obvious mucosal disease.
Plaque: The patient's oral hygiene is good.
Saliva: Salivary flow is normal.
Other: He has tried to give up smoking in the past but without success.

Recall interval recommended by clinician for next oral health review :
6 months.

Rationale: Patient has two recognised factors associated with oral cancer and would therefore benefit from regular review of the oral mucosa.

SCENARIOI

Age: Patient I is a 65-year-old male.
Attendance record: Patient has been attending your practice for five years.
Medical history: Patient is asthmatic and use a steroid inhaler.
Social history: Patient is non-smoker and has occasional alcohol.
Dietary habits: Patient has a normal diet.
Use of fluoride: Patient uses fluoride toothpaste.
Clinical evidence/dental history: Patient is edentulous and has full dentures that are 3 years old. There is a white patch on the right lateral margin of the tongue that has been assessed by biopsy in a specialist unit some 5 years previously and reported as a non-dysplastic leukoplakia. The patient had been discharged back to the practice for on-going care.
Plaque: The patient maintains good denture hygiene.
Saliva: Salivary flow is normal.
Other: The patient has suffered from recurrent candidal infections associated with his inhaler therapy.

Recall interval recommended by clinician for next oral health review:
6 months.

Rationale: The patient has a recognised pre-cancerous condition at a high risk site in the mouth. Regular review of the mucosa at 6-monthly intervals would increase the likelihood of early detection of malignant change if this occurred.

SCENARIO J

Age: Patient J is a 56-year-old male
Attendance record: The patient attended your practice 6 months ago for the first time and has been compliant in completing a course of non-surgical periodontal therapy
Medical history: The patient is taking low dose aspirin due to family history of coronary heart disease
Social history: The patient is a non-smoker with a moderate alcohol intake of 14 units per week.
Dietary habits: Mix of rushed meals during the week and a reasonably balanced diet at weekends
Use of fluoride: The patient brushes twice a day with a fluoride-containing tooth whitening toothpaste.
Clinical evidence and dental history: The teeth are heavily restored with a mix of large amalgam restorations and a few crowns. Although there used to be some moderately deep pockets (BPE code 3) in most sextants, only four 5mm pockets remain without bleeding on probing following non-surgical periodontal therapy. Gingival health is otherwise excellent.
Plaque: The patient brushes twice a day with and uses interdental brushes two to three times per week. The plaque score is reasonably low (25%) and is mainly limited to lingual or palatal molar surfaces,
Saliva: The patient has a normal salivary flow rate.
Other: N/A

Treatment plan: The patient receives advice in home care plaque control at the same visit. He also enters supportive maintenance on a three monthly recall.

Recall interval recommended by the clinician for next oral health review:
3 months.

Rationale: The response to periodontal therapy is good, although plaque control is not adequate. Since we have no measure of periodontal stability, his periodontal status should be re-examined in three months.

Note, if gingival or periodontal disease was still present at this point, the patient should enter a further course of active treatment and would therefore not be subject to a routine recall interval.

At the three months recall examination the periodontal health appears stable. Although the supportive periodontal maintenance should continue every three months, the recall for an oral health review could be extended to an interval of between six to twelve months depending on the clinician's assessment of risk of breakdown.

2 Notes on the scope of the guidance

All NICE guidelines are developed in accordance with a scope document that defines what the guideline will and will not cover. The scope of this guideline was established at the start of the development of this guideline, following a period of consultation; it is available from http://www.nice.org.uk/Docref.asp?d=84419

The recommendations contained in this guideline are intended to assist clinicians in selecting recall intervals between Oral Health Reviews (OHRs) that are appropriate to the needs of individual patients. The guideline includes recommendations for the optimal recall frequency for routine dental checks for patients of all ages (both dentate and edentulous patients) and covers primary care received from NHS dental staff (dentists, independent contractors contracting within the NHS, dental hygienists and therapists) practicing in England and Wales. The guideline takes into account the potential of the patient and the dental team to improve or maintain the quality of life and to reduce morbidity associated with oral and dental disease.

In arriving at recommendations, the impact of dental checks on patients' well-being, general health and preventive habits; caries incidence and avoiding restorations; periodontal health and avoiding tooth loss; and avoiding pain and anxiety have been considered.

The guideline does not cover:

- intervals between dental examinations that are not routine dental recalls; that is, intervals between examinations related to ongoing courses of treatment, or part of current dental interventions
- emergency dental interventions, or intervals between episodes of specialist care
- the prescription and timing of dental radiographs; guidance on selection criteria for dental radiographs has been developed in the UK by the Faculty of General Dental Practitioners (FGDP1998) and is currently being updated.

- recall intervals for routine scale and polish treatments. Although the provision of a scale and polish treatment following a recall examination is common practice in primary dental care settings, the frequency of dental check-ups does not have to be directly linked to the frequency of scaling and polishing. A systematic review of this area is currently being conducted by the Cochrane Oral Health Group (COHG).

3 Implementation in the NHS

3.1 In general

Local health communities should review their existing practice for dental recall against this guideline. The review should consider the resources required to implement the recommendations set out in Section 1, the people and processes involved, and the timeline over which full implementation is envisaged. It is in the interests of patients that the implementation timeline is as rapid as possible.

Relevant local clinical guidelines, care pathways and protocols should be reviewed in the light of this guidance and revised accordingly.

This guidance contains a number of tools and suggestions to facilitate effective implementation and review. The provision of a comprehensive risk checklist, with explanatory notes for how best to operationalise it, combined with the recall interval selection slider tool to help communication and discussion with patients and the clinical scenarios to provide a range of worked clinical examples are all designed to help NHS dental practices and their patients get used to what will be for many a new way of planning and receiving routine NHS dental care.

NHS clinical care pathways

The first Clinical Care Pathway to be developed is one that deals with the Oral Health Assessment and the Oral Health Review. This pathway is currently under development and will be tested by NHS Options for Change Field Sites.

The pathway has been designed from the inception to accommodate the NICE recommendations on recall intervals and this integration should help a seamless introduction into the modernised, preventive NHS dental care.

Support for practices, dental teams and for patients

The NICE guideline, Quick Reference Guide, leaflets and the patient version of the guidance should all ensure that easy-to-access information about the recall recommendations are widely available to dental practices and clinics delivering NHS care in England and Wales.

Postgraduate and continuing education

It is hoped that the key messages of the guidance and the clinical, preventive philosophy behind it can be incorporated in planned educational activities over the coming year.

NeLH, the virtual Centre for Improving Oral Health and the developing National Oral Health Knowledge Service

A number of developments in supporting and coordinating evidence-based dentistry are currently under development. Steps will be taken to ensure that the guidance appears on the National electronic Library for Health (NeLH) and that its rationale and recommendations are promoted by the virtual Centre for Improving Oral Health and are linked to new dental IT developments.

3.2 *Audit*

Patient records should reflect that appropriate recall intervals have been identified on the basis of the assessment of risk and patient preference. The following four criteria can be used to audit adherence to the guideline recommendations.

3.2.1   There is a record for each patient, at the end of each Oral Health Review (OHR), of an assessment of disease and disease risk.

3.2.2   There is a record for each patient, at the end of each OHR or at completion of treatment, of the interval set until the next oral health review.

3.2.3   The interval agreed each time, for each patient is:

- either 3, 6, 9, or 12 months for people under 18 years of age

- or 3, 6, 9, 12, 15, 18, 21, or 24 months for people 18 years of age and over.

3.2.4   There is a record of the patient's preference (agreement or disagreement) with each recall interval.

In addition to local audit, it is recommended that the following are carried out:

- Assessment of acceptability and performance of the guidance, in order to refine and improve the guidance.
- Assessment of the impact of the introduction of this guidance, to establish what changes in recall behaviour are brought about by its publication.
- The establishment of a new minimum dataset, consistent with the new, more preventive philosophy of the Options for Change style evolving arrangements for NHS Dentistry. Data should be recorded routinely in such a way as to facilitate its use for service improvement at the patient, practice, primary care trusts, Shadow Health Authority and national levels.

- Minimum data requirements: It will be important for the profession, the PCTs and the Shadow Special Health Authority (Dental Practice Board) to agree a coherent and workable dataset to allow efficient collection of data and the comparison of what happens in different localities over time. Continuity of existing longitudinal data sets is necessary.

- Audit at practice level - the coordinated production of audit tools may facilitate this process and the incorporation of the minimum data set into dental IT software would help automate the data collection and reduce the administrative burden.

- Audit at the local (PCT) level - this will become more important as PCTs seek to understand the quality dimensions and patient acceptability of new styles of dental care. The Strategic Health Authorities (SHAs) and Welsh Health Boards may also call for the (anonymised) results of such local audits.

- Audit at national level - with the changes in commissioning NHS dental care, there will be a need to evaluate the overall performance of the new systems and the quality of care being delivered.

- IT developments - New dental and NHS-wide IT developments should, over time, allow much of this routine information to be collected without additional administrative burdens. It is essential that these needs are reflected in the design, specification and development of new IT systems and that these requirements are met while satisfying contemporary data protection and privacy requirements. If not addressed early, there is a danger that the automated collection and processing of audit data about dental recalls, which will be needed, may be compromised. This is due to the scale and pace of the remuneration changes which will be introduced in 2005. Confidentiality considerations are a further consideration as appropriate information and agreement must be obtained from the patient, where necessary, to

ensure that the legitimate use of patient information for improving the quality of patient care can continue.

4 Research recommendations

The following research recommendations have been identified for this NICE guideline, not as the most important research recommendations, but as those that are most representative of the full range of recommendations. The Guideline Development Group's full set of research recommendations is detailed in the full guideline produced by the National Collaborating Centre for [add] (see Section 5).

The Guideline Development Group agreed that research conducted in the following areas would dramatically enhance the updating and applicability of this guideline in the future.

- Dental attendance patterns should be examined for changes following the publication of the guideline. This requires that the future use of routine data for this purpose must be communicated appropriately to patients in order to satisfy confidentiality considerations.
- Following publication of the guideline, information will be needed on whether patients visit the dentist at the interval deemed appropriate, and the reasons why or why not.
- High-quality research is needed on the long-term clinical and cost effectiveness of one-to-one oral health advice and whether this may depend upon:
    - the frequency in which it is delivered
    - characteristics of the patient other than their physical or oral health (for example, age, sex, social class, occupation)
    - the medium used to deliver the advice
    - the physical/oral health of the patient
    - who is imparting or delivering the advice.

- High-quality research is needed to examine the effects of varying dental recall intervals on oral health. More specifically, a better understanding is

required of what aspect or aspects of the oral health review influence oral health.

- High-quality research is required to examine the impact of oral health (relating to gingivitis, caries, periodontal disease, and mucosal disease) on quality of life.

- High-quality research is needed to examine the effects on periodontal health of a routine scale and polish treatment in different populations. Specifically, research is needed to examine the clinical effectiveness and cost effectiveness of providing this treatment at different time intervals.

Research designs will need to accommodate the mix of arrangements (NHS and a range of private and mixed configurations) under which dental primary care is provided.

5 Full guideline

The National Institute for Clinical Excellence commissioned the development of this guidance from the National Collaborating Centre for Acute Care. The Centre established a Guideline Development Group, which reviewed the evidence and developed the recommendations. The full guideline, *Dental recall: recall interval between routing dental examinations*, is published by the National Collaborating Centre for Acute Care; it is available on its website (http://www.rcseng.ac.uk/about_the_college/role_of_the_college/nccac_html) and can be ordered at a cost, the NICE website (www.nice.org.uk) and on the website of the National electronic Library for Health (www.nelh.nhs.uk). **[Note: these details will apply to the published full guideline.]**

The members of the Guideline Development Group are listed in Appendix C. Information about the independent Guideline Review Panel is given in Appendix D.

The booklet *The Guideline Development Process – An Overview for Stakeholders, the Public and the NHS* has more information about the Institute's guideline development process. It is available from the Institute's website and copies can also be ordered by telephoning 0870 1555 455 (quote reference N0472).

6 Related NICE guidance

There is no related NICE guidance.

7 Review date

The process of reviewing the evidence is expected to begin 4 years after the date of issue of this guideline. Reviewing may begin earlier than 4 years if significant evidence that affects the guideline recommendations is identified sooner. The updated guideline will be available within 2 years of the start of the review process.

A version of this guideline for the public is available from the NICE website (www.nice.org.uk) or from NHS Response Line (telephone 0870 1555 455 and quote reference number N0XXX for an English version and N0XXX for a version in English and Welsh).

A quick reference guide for health professionals is available from the NICE website (www.nice.org.uk) or from NHS Response Line (telephone 0870 1555 455 and quote reference number N0XXX .

Appendix A: Grading scheme

The grading scheme and hierarchy of evidence used in this guideline (see Table) is from Eccles and Mason (2001).

Recommendation grade	Evidence
A:	directly based on category I evidence
B:	directly based on: • category II evidence, **or** • extrapolated recommendation from category I evidence
C:	directly based on: • category III evidence, **or** • extrapolated recommendation from category I or II evidence
D:	directly based on: • category IV evidence, **or** • extrapolated recommendation from category I, II or III evidence

Evidence category	Source
I:	evidence from: • meta-analysis of randomised controlled trials, **or** • at least one randomised controlled trial
II:	evidence from: • at least one controlled study without randomisation, **or** • at least one other type of quasi-experimental study
III:	evidence from non-experimental descriptive studies, such as comparative studies, correlation studies and case–

	control studies
IV:	evidence from expert committee reports or opinions and/or clinical experience of respected authorities

Adapted from Eccles M, Mason J (2001) How to develop cost-conscious guidelines. *Health Technology Assessment* 5:16.

Appendix B: Clinical scenarios

SCENARIO K

Age: Patient K is a 43-year-old female
Attendance record: Patient has been attending your practice for 9 years and you have reviewed her oral health every 6 months for the first 6 years and on an annual basis for the last 3 years.
Medical history: Patient has no medical history of note
Social history: Patient does not smoke and drinks alcohol occasionally.
Dietary habits: Patient has a healthy diet with plenty of fresh fruit and vegetables and rarely consumes sugar containing foods and drinks
Use of fluoride: Patient brushes three times a day with a fluoride containing toothpaste.
Clinical evidence and dental history: Patient has a few small restorations, but has needed no restorative treatment in the last 7 years. Bitewing radiographs reveal no approximal lesions and good alveolar bone support. The patients periodontal health is excellent and there is no evidence of gingivitis (Basic Periodontal Examination code 0 all sextants).
Plaque: Patient brushes 3 times a day and uses dental floss once a day. On examination, there are no plaque deposits.
Saliva: Patient has a normal salivary flow rate.

Other: N/A

Recall interval recommended by clinician for next oral health review:
24 months

Rationale for 24 month interval: The patient has been attending your practice regularly for nine years. The patient has not required any restorative treatment for seven years. You have progressively increased the recall interval from an original interval of 6 months to 12months. The patient has been on the latter recall interval for three years and you feel confident that the patient's oral health is sufficiently stable to justify a 24 month interval before their next oral health review.

SCENARIO L

Age: Patient L is a 23-year-old female
Attendance record: Patient has been attending your practice regularly since she was a child
Medical history: Patient has no medical history of note.
Social history: Patient does not smoke and is a moderate drinker.
Dietary habits: Patient has a healthy diet and rarely consumes confectionary.
Use of fluoride: Patient brushes 3 times a day with a fluoride containing toothpaste.
Clinical evidence and dental history: Patient has never required restorative intervention and her periodontal health is excellent (Basic Periodontal Examination code 0 allsextants).
Plaque: The patient's oral hygiene is excellent and she brushes 3 times a day and uses dental floss once a day.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall Interval recommended by the clinician for next oral health review:
18 months

Rationale: Given the patient's long established dental history of no restorations and excellent oral hygiene, a recall interval of 24 months might be appropriate. However, recognising that at the patient's age, lifestyles can change suddenly and dramatically, you decide to be cautious and recall her in 18 months.

ADULTS: SCENARIO M

Age: Patient M is a 21-year-old female
Attendance record: Patient has been attending your practice regularly for six years
Medical history: Patient has no medical history of note and, apart from the contraceptive pill, is taking no medication.
Social history: Patient does not smoke and is a moderate drinker.

Dietary habits: Patient has one can of carbonated soft drink a day and says that she consumes one bar of chocolate a day.
Use of fluoride: Patient brushes twice a day with a fluoride containing toothpaste.
Clinical evidence and dental history: Patient has no decayed, missing or filled teeth and bitewing radiographs reveal no approximal lesions and good alveolar bone support. The BPE demonstrates gingival bleeding, but no pocketing (BPE code 1) in five sextants with calculus present around the lower anterior teeth (BPE code 2)
Plaque: Patient brushes twice a day but does not use dental floss. The patient's oral hygiene is unsatisfactory.
Saliva: Patient has a normal salivary flow rate.
Other: N/A
Treatment plan: The patient requires oral hygiene advice and professional debridement of plaque and calculus
Recall interval recommended by the clinician for next oral health review: 12 months. Clinician recommends review of oral hygiene with debridement if needed in 6 months.
Rationale: In view of the patient's oral hygiene and periodontal status you recommend a review of oral hygiene with debridement if needed in 6 months. Although the patient has a number of risk factors for dental caries, she has not required restorative intervention and you consider a recall interval of 12 months to be appropriate for the next Oral Health Review.

ADULTS: SCENARIO N

Age: Patient N is a sixty-seven-year-old female.
Attendance Record: Patient had full upper and lower dentures fitted by you 2 years ago. She subsequently attended on two occasions for easing of the lower denture.
Medical History: Patient has no medical history of note and is taking no medication.
Social History: Patient does not smoke and does not drink.
Dietary habits: Patient has a healthy diet (lots of fresh fruit and vegetables).
Use of Fluoride: -N/A
Clinical Evidence and dental history: Patient has a healthy oral mucosa with no evidence of any mucosal lesions. Both upper and lower dentures fit and function well.
Plaque: Patients dentures are free of plaque deposits. Patient rinses her dentures immediately after meals and soaks them in a cleansing solution overnight.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall Interval recommended by clinician for next oral health review:
24 months

Rationale: This edentulous patient has been fitted with satisfactory dentures and subsequent follow up has been uneventful. The patient's healthy oral mucosa and the patient's established regime for cleansing her dentures influence your decision to recall the patient in 24 months. The patient is advised to reattend if she has any problems with her dentures of if she notices any change in the oral mucosa.

SCENARIO O

Age: Patient O is a sixty-nine-year-old male.
Attendance record: Patient is partially dentate and has been a regular attender at your practice for the last five years.
Medical history: Patient is taking a diuretic and a beta-blocker for blood pressure.
Social history: Patient is a heavy smoker and you suspect he may be a heavy drinker.
Dietary habits:
Use of fluoride: Patient brushes twice a day with a fluoride toothpaste.
Clinical evidence and dental history: Patient has white patches in his mouth which have been biopsied by a specialist and found to be non-malignant keratotic lesions associated with his tobacco habit. He has had no new carious lesions in the last five years. The patient has a number of areas with moderate pockets of 4-6mm (BPE code 3) and/or some sextants with furcation involvements or attachment loss of 7mm or more (BPE code *)
Plaque: Patients oral hygiene is poor and he does not use interproximal aids such as interdental brushes or floss.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall interval recommended by clinician for next oral health review:
6 months. Arrangements are made for the patient to have periodontal care with the hygienist.

Rationale: The patient has risk factors for oral cancer (mucosal lesions, heavy tobacco use and alcohol consumption). The 'white patches' have been biopsied and found to be non-malignant and the patient has been referred back to you for continuing care and review. However, it is the patient's periodontal status, rather than his risk factors for oral cancer, that is the main determinant of your choice of recall interval. The patient's oral mucosa will be checked as part of the next oral health review in 6 months.

SCENARIO P

Age: Patient P is a 48-year-old female
Attendance Record: The patient has been attending your practice regularly for regular periodontal care for 7 years
Medical History: The patient is taking HRT but otherwise the medical history is clear.
Social History: The patient quit smoking 9 years ago and takes on average seven units of alcohol per week
Dietary habits: Good balanced diet
Use of Fluoride: The patient brushes twice a day with a fluoride containing toothpaste.
Clinical evidence and dental history: The teeth are moderately heavily restored but restoration margins are accessible and intact. Although there used to be moderately deep pockets on most teeth (BPE code 3), only three 5mm pockets remained following non-surgical periodontal therapy, which was completed 5 years ago. These have remained unchanged since. Gingival health is otherwise excellent.
Plaque: The patient brushes twice a day with a fluoride toothpaste and uses interdental brushes every day. There are minimal plaque deposits
Saliva: The patient has a normal salivary flow rate.
Other: N/A

Treatment plan: The patient should continue on 3-monthly supportive periodontal maintenance visits.

Recall Interval recommended by the clinician for next oral health review:
12 months

Rationale: The previous history of periodontitis highlights the need for continuing supportive therapy every three months. In view of the stability of the disease at present, the next oral health review should be in 12 months time.

SCENARIO Q

Age: Patient Q is a 62–year-old female
Attendance Record: This patient has been visiting your practice for the last 10 years. Attendance is reasonably good although intervals between examinations have occasionally been prolonged. She is on a supportive periodontal maintenance programme of visits every 3 months.
Medical History: The patient is taking antidepressants
Social History: The patient is a heavy smoker (self-reported 20-25 cigarettes per day) with an alcohol intake from 2-10 units per week.
Dietary habits: Reasonably balanced diet.
Use of fluoride: The patient brushes twice a day with a fluoride-containing toothpaste for sensitive teeth.
Clinical evidence and dental history: Initially, deep pockets were present in all sextants (BPE 4 or 4*), although not all teeth were affected. Home-care plaque control advice and non-surgical therapy produced substantial improvements. Residual deep pockets remained despite further non-surgical attempts to reduce them. The patient declined referral and preferred extraction when teeth/pockets became problematic. Some teeth have been replaced with an upper removable partial denture.
Plaque: The patient brushes twice a day and uses wood sticks daily and a single-tufted brush. The plaque score is not consistent but varies from a low level (12%) to levels associated with inflammation (40%). Today it is 30%.
Saliva: The salivary flow rate is reduced due to the medication.
Other: N/A

Treatment plan: The patient receives advice in home-care plaque control at today's supportive periodontal maintenance visit (following the oral health review). She continues with her 3-monthly periodontal maintenance visits and is recalled for her oral health review in 6 months.

Recall Interval recommended by the clinician for next oral health review:
6 months

Rationale: The response to periodontal therapy is good in the less severely affected areas. Plaque control is variable and in conjunction with the risk factors of heavy cigarette smoking and reduced salivary flow rate, the risk of disease is high. The removable partial denture might also act to favour plaque accumulation.

SCENARIO R

Age: Patient is an 18-year-old male.
Attendance Record: This patient has been visiting your practice for the past 6 months only.
Medical History: There is no medical history of note.
Social History: The patient is a non-smoker with a moderate alcohol intake of 12 units per week.
Dietary habits: Irregular meals with periods of an unbalanced diet.
Use of fluoride: The patient now brushes twice a day with a fluoride containing toothpaste.
Clinical evidence and dental history: Initially, localised moderately deep pockets were limited to some first molars and incisors. This led to a diagnosis of localised aggressive periodontitis. Home-care plaque control advice and non-surgical therapy produced substantial improvements with pockets of 3-4mm present (maximum BPE 3)
Plaque: The patient brushes twice a day with and uses floss daily. After a hesitant start, the plaque score has now reduced to 17%.
Saliva: The salivary flow rate is normal.
Other: N/A

Treatment plan: The patient receives advice in home care plaque control at today's supportive periodontal maintenance visit (following the oral health review). He continues with 3-monthly periodontal maintenance visits and is recalled for an oral health review in 3 months.

Recall Interval recommended by the clinician for next oral health review:
3 months

Rationale: The response to periodontal therapy is good but the potential for rapid progression of aggressive periodontitis must be considered. Once the stability of the periodontal status is known, the clinician could consider reducing the frequency of oral health reviews if this is appropriate (based on clinical status and risk factors). The frequency of supportive maintenance visits should remain at 3 months.

SCENARIO S

Age: Patient S is a 35-year-old female
Attendance Record: Patient S has been attending your practice regularly for 6 years.
Medical History: Patient has no medical history of note.
Social History: Patient does not smoke and drinks alcohol occasionally at the weekends
Family History: Patient has no family history of periodontal disease nor of early tooth loss
Clinical Evidence and dental history: Patient has no missing teeth. Her gingival health looks excellent and she reports no bleeding on brushing, no mobility or drifting of her teeth. Periodontal screening reveals a BPE code of 0 with no pockets deeper than 3.5mm and no bleeding on probing. Bitewing radiographs taken 12 months ago revealed no interproximal bone loss on posterior teeth. Similarly, her restorations are not plaque retentive.
Plaque: Patient brushes twice a day and uses dental floss once a day. She has not needed a scale and polish for over 3 years.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Recall Interval recommended by clinician for oral health review:
24 months

Rationale for 24 month interval: Over a 6-year period at your dental practice, this patient has required only scaling and polishing to remove stain and calculus. The patient has not developed any periodontal pockets over a 15-year period and has good oral hygiene and dietary habits. There is no discomfort

arising from her periodontal tissues and the she is very happy with this situation. The patient's dental status appears stable at this point in time, suggesting that a recall interval of 24 months is appropriate for this patient.

Age: Patient T is an 18-year-old male
Attendance Record: Patient is attending your practice for the first time and has attended another practice irregularly over the past 10 years.
Medical History: Patient has Down Syndrome. There is no other medical history of note.
Social History: The patient lives at home with his parents.

Clinical Evidence and dental history: The patient has microdontia with short, small clinical crowns and roots. The patient has amalgam restorations in six permanent molar teeth, some of which are in contact with the gingival margins and are plaque retentive. There are no other restorations or caries lesions present. Patient has already lost 2 first molar teeth. His gingival health is poor with inflammation present at a number of interproximal sites but there is no significant mobility or drifting of any teeth. Periodontal screening reveals a BPE code of 4 with a number of pockets deeper than 3.5mm and several around his remaining first molar teeth deeper than 5.5mm. There is widespread bleeding on probing.

Plaque: Patient brushes twice a day but does not use any interproximal cleaning aids.
Saliva: Patient has a normal salivary flow rate.
Other: N/A

Treatment plan: The patient receives advice in home-care plaque control (this advice is also given to the patient's parents, who are asked to supervise the patient's oral hygiene) and a course of non-surgical periodontal therapy. He is placed on 3-monthly supportive periodontal maintenance visits.

Recall Interval recommended by clinician for next oral health review:
3 months

Rationale for 3 month interval: Patient has multiple risk factors for the development of periodontal disease. The patient's dental status appears unstable at this point in time, suggesting that a recall interval of 3 months is appropriate for this patient to monitor compliance with oral hygiene advice and the overall response to treatment.

Appendix C: The Guideline Development Group

Professor Nigel Pitts	Chair, Dental Health Services Research Unit, University of Dundee
Dr Paul Batchelor	British Association for the Study of Community Dentistry
Dr Jan Clarkson	Cochrane Oral Health Group
Dr Clare Davenport	West Midlands Health Technology Assessment Collaboration
Mr Ralph Davies	British Dental Association
Miss Karen Elley	Sandwell Primary Care Trusts
Mr Stephen Fayle	Faculty of Dental Surgery, Royal College of Surgeons of England
Mrs Eleanor Grey	Patient Representative, Chair, Lay Advisory Group, Faculty of General Dental Practitioners
Miss Kathryn Harley	Faculty of Dental Surgery, Royal College of Surgeons of England
Miss Sara Hawksworth	Patient Representative, Age Concern England
Professor Mike Lewis	University of Wales College of Medicine
Mr Peter Lowndes	Faculty of General Dental Practitioners
Mr Mike Mulcahy	Faculty of General Dental Practitioners
Mr Derek Richards	Centre for Evidence Based Dentistry
Mr Richard Seppings	British Dental Association
Dr Graham Smart	Faculty of Dental Surgery
Mrs Elaine Tilling	British Dental Hygienists Association
Mr Peter Wilkins	Faculty of General Dental Practitioners
Professor Helen Worthington	Cochrane Oral Health Group

Appendix D: The Guideline Review Panel

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring its quality. The Panel includes experts on guideline methodology, health professionals and people with experience of the issues affecting patients and carers. The members of the Guideline Review Panel were as follows:

Member	Area of Expertise/Experience
Peter Robb Consultant ENT Surgeon	Chair/Clinician
Joyce Struthers Patient Representative	Patient/Carer Issues
Peter Duncan Consultant in Anaesthetics	Deputy Chair/Clinician
Anne Williams Assistant Director of Clinical Governance	Implementer