National Institute for Health and Care Excellence

NICE guideline on Oral health for adults in care homes
Document cover sheet

Date	Version number	Editor	Action
28/9/15	Edit1	SB/SJ	First edit - check against template and for house style. Substantive edit of recs. Edited context and economics in Discussion. Other sections still outstanding
30/9/15	Edit2	SB/SJ	
1/10/15	Edit3/4	SB/SJ	Added edited economic section of discussion back in.
2/10/15	Edit5	SB/SJ	
13/10/15	Edit6/7	SB/SJ	
14/10/15	Edit8/9/10	SB/SJ	
20/11/15	Edit11	SB/SJ	
24/11/15	Edit12	SB/SJ	
25/11/15	Edit13	SB/SJ	Sue has reread recs and read research recs on paper.
25/12/15	Edit14/15	SB/SJ	OHAT questionnaire added
30/11/15	Edit16	SB/SJ	Postchair/PHAC
1/12/15	Edit17/18	SB/SJ	

NICE guideline short version template – notes for users

1 # Oral health for adults in care homes

2 ## NICE guideline

3 ## Draft for consultation, December 2015

4

This guideline covers interventions to maintain and improve oral health and ensure timely access to dental treatment for adults in nursing and residential care homes. This includes providing daily mouth care where needed.

Who is it for?

- Care home managers
- Residential and nursing care home staff who provide daily personal care to residents
- People who provide oral health services to care homes (for example, community dental services, general dental practices, oral health promotion teams)
- Local authorities, the NHS and service providers with a remit for the health and care of adults who live in care homes
- Organisations concerned with the quality of care in care homes (for example, local authorities, the health and wellbeing board and healthwatch)

It will also be of interest to people who live in care homes, or stay for short or long periods of time, their families, carers and friends.

Commissioners of care home services should ensure any service specifications take into account the recommendations in this guideline when it is finalised.

This guideline contains the draft recommendations, information about implementing the guideline, context, the guideline committee's discussions and recommendations for research. Other information about how the guideline was developed is on the guideline's page on the NICE website. This includes the evidence reviews, the scope, and details of the committee and any

declarations of interest.

1

1

2 # Contents

3 Recommendations 4
4 1.1 Providing residents with support to access dental services 4
5 1.2 Care home policies 5
6 1.3 Mouth care assessments and personal care plans 5
7 1.4 Daily mouth care 6
8 1.5 Care home staff knowledge and skills 7
9 1.6 Oral health promotion services 7
10 1.7 General dental practice 8
11 1.8 Community dental services 8
12 1.9 Strategic planning for local oral health services 8
13 Terms used in this guideline 9
14 Implementation: getting started 9
15 Context 10
16 The committee’s discussion 11
17 Recommendations for research 27
18 Glossary 30
19 The Oral Health Assessment Tool 31
20

21

1 # Recommendations

> The recommendations in this guideline should be considered alongside the advice in Public Health England's Delivering better oral health.
>
> People have the right to be involved in discussions and make informed decisions about their care, as described in your care.
>
> Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including 'off-label' use), professional guidelines, standards and laws (including on consent), and safeguarding.

2 ## *1.1 Providing residents with support to access dental services*

3 1.1.1 Be clear about your duty of care in relation to residents' oral health needs
4 and access to dental treatment.

5 1.1.2 Be clear that only dentists registered with the General Dental Council may
6 diagnose and treat dental disease or refer someone for specialist care.

7 1.1.3 Link oral health assessments to a referral for dental care, when necessary
8 (see recommendation 1.3.1).

9 1.1.4 Find out what dental services are available locally and develop links with
10 them. This includes:

11 - general dental practice
12 - community dental services
13 - oral health improvement teams
14 - emergency dental care
15 - specialist home care.

16 1.1.5 Tell local directors of public health, healthwatch and the health and
17 wellbeing board about any concerns you have about local dental service
18 provision.

1.2 Care home policies

1.2.1 Ensure mouth care is included in existing care home policies covering residents' health and wellbeing.

1.2.2 Ensure all care home staff, new and existing residents and their families or friends are aware of care home policies to promote health and wellbeing, including mouth care.

1.2.3 Ensure care home policies set out plans and actions to promote and protect residents' oral health. Include information about:

- local general and emergency dental services
- specialist home care, including community dental services (see the NHS Choices information on NHS dental services)
- assessment of residents' oral health
- plans for caring for residents' oral health
- daily mouth care and use of mouth care products (such as denture cleaning solutions).

1.3 Mouth care assessments and personal care plans

Appropriately trained staff

1.3.1 Assess the mouth care needs of all residents within a week of their admission (or sooner for short stays), regardless of the length or purpose of their stay. Use the Oral Health Assessment Tool. Record the results in their personal care plan. Ask:

- How the resident usually manages their daily mouth care (for example, toothbrushing and type of toothbrush, removing and caring for dentures including partial dentures). Check whether they need support.
- If dentures, including partial dentures are marked or unmarked. If unmarked, ask whether they would like to arrange for marking and offer to help.
- The name and address of their dentist or any dental service they have had contact with, and where and how long ago they saw a dentist or

received dental treatment. Record if there has been no contact or they do not have a dentist, and help them find one (see recommendation 1.1.3).

1.3.2 Consider involving family or friends in the initial assessment, with the residents' permission, if help is needed to understand their usual oral hygiene routine.

1.3.3 Regularly review and update residents' mouth care needs in their personal care plans.

1.4 Daily mouth care

1.4.1 Provide residents with daily support to meet their mouth care needs and preferences as set out in their personal care plan after their assessment. This includes:

- brushing natural teeth twice a day with fluoride toothpaste
- daily oral care for full or partial dentures (such as daily brushing, removing food debris and removing dentures overnight)
- using their choice of cleaning products for dentures if possible
- using their choice of toothbrush, either manual or electronic
- daily use of mouth care products prescribed by dental clinicians (for example, high fluoride toothpaste or mouth rinse containing chlorhexidine)
- daily use of over-the-counter products such as mouth rinses containing chlorhexidine, or sugar-free gum containing xylitol.

1.4.2 Ensure care home staff know which member of staff they can ask for advice about getting or helping someone to use prescribed mouth care products.

1.4.3 Ensure care home staff know how to respond to changes in a resident's mouth care needs.

1.4.4 Ensure care home staff know how to respond if a resident does not want daily mouth care or to have their dentures removed.

1.5 Care home staff knowledge and skills

1.5.1 Regularly assess the oral health knowledge and skills of all care home staff.

1.5.2 Ensure care home staff who provide daily personal care to residents:

- Understand the importance of residents' oral health.
- Know that only a qualified dentist registered with the General Dental Council may diagnose and treat dental disease, or refer someone for specialist care (see NICE's guideline on suspected cancer: recognition and referral).
- Understand the potential impact of untreated dental pain or mouth infection on the behaviour of people who cannot articulate their pain or distress or ask for help. (This includes, for example, residents with dementia or communication difficulties.)
- Know how and when to reassess residents' oral health using the Oral Health Assessment Tool (see recommendation 1.3.1).
- Know how and when to report any oral health concerns for residents, and how to respond to a resident's changing needs and circumstances. (For example, some residents may lose their manual dexterity over time.)
- Understand the importance of denture marking and how to arrange this for residents, with their permission.

1.6 Oral health promotion services

1.6.1 Provide care homes with oral health educational materials and training to meet the oral health needs of all residents.

1.6.2 Provide care homes with regular support and advice about oral health to meet the needs of residents, especially those with complex needs.

1.6.3 Help care home managers find out about local oral health services, create local partnerships or links with general dental practice and community dental services.

1.6.4 Act as a link between local authority public health services and dental public health leads to advocate for accessible oral and dental health services on behalf of residents of care homes.

1.7 General dental practice

1.7.1 Provide residents in care homes with routine preventive care and treatment as necessary (see NICE's guidelines on dental checks: intervals between oral health reviews and oral health promotion: general dental practice).

1.7.2 Refer residents in care homes for specialist care as needed (for example, (see NICE's guideline on suspected cancer: recognition and referral).

1.8 Community dental services

1.8.1 Provide care for residents with complex oral health needs in a clinical setting or a care home, as necessary.

1.8.2 Make referrals to other specialist dental services as necessary (for example, for dental care in hospital).

1.9 Strategic planning for local oral health services

1.9.1 Ensure the local oral health needs assessment or the joint strategic needs assessment considers the oral health needs of people who live in care homes. (See recommendation 1 in NICE's guideline on oral health: approaches for local authorities and their partners to improve the oral health of their communities.)

1.9.2 Ensure the local oral health strategy or the health and wellbeing strategy set out how the oral health of residents with different needs will be met by oral health prevention and care services. This includes:

- general dental practices
- community dental services
- oral health promotion services
- training to support care homes.

(See recommendation 1 in NICE's guideline on oral health: approaches for local authorities and their partners to improve the oral health of their communities.)

Terms used in this guideline

Care home

This covers 24-hour accommodation with either non-nursing care (for example, a residential home) or nursing care.

Mouth care

Mouth care is a term used in care homes to describe activities such as removing and cleaning dentures, toothbrushing and use of fluoride toothpaste.

Residents

This includes all adults aged 18 years upwards who live in care homes.

For other public health and social care terms see the Think Local, Act Personal Care and Support Jargon Buster.

Implementation: getting started

This section will be completed in the final guideline using information provided by stakeholders during consultation. To help us complete this section, please use the comments form to give us your views on these questions: 1. Which areas will have the biggest impact on practice and be challenging to implement? Please say for whom and why. 2. What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice.)

Context

Oral health is important to everyone's health and wellbeing. Poor oral health can affect people's ability to eat, speak and socialise normally (Dental quality and outcomes framework Department of Health). Tooth decay and gum disease are the most common dental problems in the UK, despite being largely preventable (Levine and Stillman-Lowe 2009). They can be painful, expensive to treat and seriously damage health if left unchecked ('Dental quality and outcomes framework').

The Adult dental health survey 2009 (Health and Social Care Information Centre) reports that the proportion of adults in England without natural teeth has dropped from 28 to 6% in the past 30 years. But less than 17% of adults with natural teeth have healthy gums, only 10% report excellent oral health and the incidence of root decay is increasing. Older adults may have experienced a lifetime of poor oral health: teeth can often have large fillings, be covered by crowns or bridges or be badly broken down (Thomson 2004[1]).

The prevalence of oral cancer is rapidly increasing (Oral cancer – UK incidence statistics Cancer Research UK).

There are an estimated 3836 nursing homes and 10,445 residential care homes in the UK. These care for around 431,500 people, 414,000 of whom are over 65. Around 43% of adults living in care homes have dementia (The changing role of care homes Bupa and Centre for Policy on Ageing). Adults with dementia may find it more difficult to maintain good oral health or access dental services (Preston 2006[2]).

Some younger adults aged 18-65, also live in residential care because their physical or mental health stops them from living independently. In addition, the number of adults with learning disabilities in residential care in England at 31 March 2012 was over 36,000, of whom just under 6000 were aged 65 or over (Emerson et al. 2013[3]).

[1] Thomson WM (2004) Dental caries experience in older people over time: what can the large cohort studies tell us? British Dental Journal 196: 89–92

[2] Preston A (2006) The oral health of individuals with dementia in nursing homes. Gerodontology 23 (2): 99–105

[3] Emerson E, Hatton C, Robertson J et al. (2013) People with learning disabilities in England 2012. Learning Disabilities Observatory: Lancaster.

A 2012 survey by the British Dental Association (Dentistry in care homes research – UK) says the way care homes provide oral health care is inconsistent. It also says that many residents have oral health problems, and that staff are reluctant to help and lacked training in oral health care. Interviews with care home staff showed little or no understanding about the importance of oral health.

The relationship between oral health, general health and a range of risk factors (for example, mouth cancer, cardiovascular disease, aspiration pneumonia) was reported as poorly understood by care home staff, if at all. Poor oral health (leading to pain or infection) also plays a role in precipitating crises in residents with dementia.

So it is highly likely that many people living in care homes will have complex oral health needs. Poorly trained care home staff, lack of access to dental services, existing oral health problems, medicines that decrease salivary flow, and treatments for chronic medical conditions (including dementia) make it difficult to meet those needs.

More information

To find out what NICE has said on topics related to this guideline, see our web pages on care homes and oral and dental health.

The committee's discussion

For an explanation of the evidence statement numbering, see the evidence reviews section.

Background

The committee discussed the fact that oral health care may be a low priority for many residential care and nursing homes. They also discussed the range of factors affecting residents' access to dental services and the need to provide them with high quality daily mouth care that meets their preferences and needs. The committee also highlighted the important role care home managers have in improving people's oral health.

It agreed that there is an urgent need for guidance in this area and the committee hoped this guideline will raise the national profile of oral health in care homes.

The committee acknowledged that the population of adults living in care homes reflected a wide age range (18 upwards) and that they come into residential care for a variety of reasons (Evidence paper [EP] 2). Many residents are vulnerable and need the support of others to help with their daily care. Some enter for shorter periods either for respite care or to recover from illness, then return home to continue an independent life in the community. The committee also discussed that many older adults in care homes have poor physical health that means their life expectancy could be between 18 and 24 months.

The committee considered recent initiatives to help older people to live independently in their own homes for longer. It also noted that such initiatives may take time to have an impact. In addition, members thought they might lead to an increase in the number of people needing more complex care once they are in a care home.

The committee was aware that most older people living in, or likely to move into, a care home may have various factors in common that could affect their oral health. For example, they may not have benefitted from the introduction of fluoride toothpaste in the 1970s. In addition, they may have been brought up in a time when both patients and dentists regarded it as the norm to have teeth removed and dentures fitted as young adults.

The committee recognised that many care home managers:

- may lack knowledge about local dental services and where to go for reliable information
- are uncertain about the costs of dental care
- are unclear about who is responsible for supporting residents so they can use dental services
- are concerned about the availability of care home staff to take people to the dentist.

The committee was aware of the lack of nationally agreed occupational standards for delivering oral health in care homes. However, this was outside the scope for this guideline.

The committee commended the independent review team for the quality of their work on 3 reviews of a range of evidence. Members noted that oral health research tends to use clinical dental indices as outcome measures. However, there is no accepted mechanism for converting the resulting 'scores' into outcomes that matter to patients or carers, such as improved self-esteem or quality of life.

The committee considered that a reliance on clinical outcomes (such as the plaque, gingival and denture plaque indices) often leads to marginal improvements that have little meaning for patients. Members also noted that this may make interventions, such as those containing chlorhexidine, appear reasonable and cost effective without giving due consideration to the impact on the person (adverse outcomes in evidence statement [ES] 1.15).

The committee agreed that an overreliance on such outcomes in the past may have resulted in a lack of research that could have developed more innovative and standardised patient-reported outcomes.

The committee discussed the need for measures and study designs to capture the perspective of the full range of residents living in care homes. This would include how much importance they, or those who care for them, place on having a clean, pain-free, healthy mouth. It would also include how poor oral health may affect the care they receive, in terms of their dignity and individuality being respected and understood (especially with regard to dentures).

Section 1.1 Providing residents with support to access dental services

The committee noted the absence of effectiveness evidence on access to dental treatment and regular check-ups in care homes in England (ES1.14). This was despite the comprehensive approach taken by the review team and the amount of national and international evidence they evaluated. The committee will consider making research recommendation on this.

The committee noted that a key theme in review 2 (which appraised guidelines and reports of best practice), was the need for residents to have access to dental care to maintain good oral health. This was highlighted in 18 documents, including 13 guidelines from the UK, US, Australia and Canada (ES 2.6).

The need for regular check-ups at appropriate intervals was a key aspect of 11 best-practice documents (ES 2.6). In addition, 4 guidelines highlighted the need for collaboration among a range of health and care home professionals.

The committee was aware of NICE's guideline on suspected cancer: recognition and referral. This emphasises the role of dentists in identifying head and neck cancers, including mouth cancer. The committee also noted that NICE's guideline on dental recall had a maximum recall period of 24 months for those over 18, with shorter intervals for those with ongoing treatment or disease management needs.

The committee agreed that both these guidelines strengthened the need for this current piece of work. But they do not overcome the problem of how to identify residents' oral health needs in the first place.

The committee reflected on the consistency of these themes across multiple guidelines, as well as their applicability to UK practice, as summarised in review 2. This, combined with the expertise and knowledge of the committee, resulted in a number of recommendations.

The committee noted there were resource implications for care home managers, community dental services and commissioners of services (EP1). But it agreed that these activities should be happening as part of the duty of care to vulnerable adults living in care homes. Members also agreed that this is within the remit of the organisations identified in the recommendations.

Members also agreed that implementing these recommendations would lead to systematic, less variable access to dental care at an earlier stage, so improving residents' quality of life and reducing avoidable oral health problems. The committee believed that this, in turn, could lead to potential health and social care cost savings.

Collaborative working

The committee recognised the importance of collaborative working by a range of dental services to improve oral health in care homes. Members noted that 4 UK guidelines (appraised in review 2 and rated moderate to high quality using AGREE) also emphasised this – and the central role of care home managers. The committee also acknowledged the lack of effectiveness research (review 1). But, based on best practice (review 2) and expert testimony (EP1, EP2), expert members considered collaborations and links could be developed between dental services and care home managers.

The committee heard evidence from review 3 (ES3.6) on the views of general dental teams about providing routine dental care or treatment for adults in residential care (including 8 studies conducted in the UK). The dental practitioners interviewed were unwilling to provide services in care homes for several reasons. These included a lack of time, funding, suitable equipment, or training to meet residents' particular needs.

Although the committee acknowledged these findings, it also considered expert testimony that suggested the limitations of the current dental contract may also be part of the difficulty in England.

Members agreed that access to dental services to identify oral health needs was a basic right and should be highlighted. They agreed that the lack of good quality research reflected a general lack of understanding of the importance of mouth care (and oral health generally) for people in residential care homes.

The committee recognised that making recommendations for regulators was outside of the scope of this work. But it wanted to ensure the audiences for this guideline recognised there is a duty of care for managers in these settings to meet the general oral health needs of their residents. Of particular concern were circumstances in which vulnerable people may not be able to tell anyone that they have pain or discomfort in their mouth.

Committee members agreed that recommending that care home managers identify and link with local services would be a minimum first step to improving or maintaining

residents' oral health and quality of life. Even if this simply helps residents maintain their oral health, the committee considers it is likely to be cost saving to both the NHS and care systems.

These potential savings would be made from the opportunity costs of supporting residents to gain access to multiple treatments if their oral health declines. It would also avoid the knock-on effects that lack of treatment may have on residents. (Such as their ability to maintain an appropriate nutritious diet and other basic needs as described in the economic evidence section.)

The committee also felt it was important to ensure care home managers know what local general or specialist dental services are available and where to find out about any service costs.

The committee agreed that it was important to tell care home managers which organisations they could raise concerns with if there is a lack of local dental service provision, to whom needs of local residents could be expressed, and whose role it was to support service development based on identified needs.

Section 1.2 Care home policies

The committee considered the evidence reported in review 3 about the barriers and facilitators to promote oral health in nursing and residential care homes. This systematically identified and synthesised 63 studies, with 16 rated good quality, 37 moderate quality, and 10 weak.

Evidence from 37 studies in review 3 (including 12 good quality and 12 moderate quality) showed that organisational policies on oral health are a key factor in improved oral care. This included 2 controlled and 1 uncontrolled before-and-after study of moderate-to-good quality (ES3.4, ES3.5).

The evidence also showed that care home policies that included regular mouth care routines and dental checks, supported by good communication and accountability to ensure those routines were followed, were associated with improved oral health and better mouth care. Not having these elements reduced the likelihood of benefits.

The committee recognised that this type of evidence may be at risk of bias. But members noted the considerable amount of research and, along with their own expertise and experience, agreed it was important to make a recommendation.

Only 8 studies were conducted in the UK, but the others were considered transferable because the care system or settings were similar.

The committee recognised that some additional resources may be needed, for example to implement regular mouth care routines. But this is likely to be more than offset by the benefit to residents in terms of quality of life. Identifying problems early will also reduce the likelihood of future treatment costs.

The committee also noted evidence from 2 moderate- to good-quality interview studies in Australia and Canada. This showed that support from friends, family and other residents helped residents maintain or improve their oral health, and improved access to dental services.

During a number of meetings, the committee debated whether to recommend that care homes appoint a member of staff as an oral health champion. Members decided not to in the end because it might then become the sole responsibility of the 'champion'.

Section 1.3 Mouth care assessments and planning care

The committee was concerned about the potentially large number of vulnerable residents aged over 18 who may have unmet oral health needs in nursing and residential care homes.

Poor oral health may occur before people come to live in residential care. For example, as someone's dementia or physical illness worsens, they often find it increasingly difficult to look after themselves properly.

The committee noted that short- as well as long-stay residents could experience a deterioration in their oral health as a result of poor daily mouth care. For example, not removing or cleaning dentures, for whatever reason, can lead to a build up of food debris in the mouth. This, in turn, could lead to an increase in life-threatening conditions such as aspiration pneumonia.

Members, including topic experts, acknowledged that the admission process, even at its very best, could be an overwhelming experience for anybody. This is particularly true for people coming into a new environment that could become their permanent home. Adding an oral health assessment to this process might be difficult, but the committee agreed it is important. It recommended conducting the assessment within a week of the person being admitted, or possibly sooner for people on short stays. The committee also agreed that whatever was recommended, it should apply to all adults coming into a care home, not just long-stay residents. This includes those coming in for respite care or to recover from an illness or fall.

The committee considered it imperative that care home staff who conduct a mouth care assessment should have the skills, knowledge and confidence needed, including the ability to treat residents with sensitivity. The committee also discussed the importance of care planning in relation to daily mouth care, oral health improvement and access to dental care. Members felt strongly that any assessment was of little value unless it resulted in actions that were written into the resident's care plan, delivered, regularly monitored and updated.

Committee members noted the strength and consistency of the guidelines and best practice evaluated in review 2 . This supported the need for an oral health assessment on entry to a care home, 'as a gateway to ensure unmet dental treatment needs are identified'. This was conveyed in 13 guidelines from specialist professional bodies and 14 other guidelines. Some of the latter (for instance, the work of Chalmers et al. in collaboration with the Australian Government see the Oral Health Assessment Tool) were considered to be of high quality.

Assessment tools

The committee acknowledged the value of 3 assessment tools described in the review of best practice reports and guidelines (ES2.1): the Brief Oral Health Status Examination (BOHSE), Revised Oral Health Assessment Guide (ROAG), and the Oral Health Assessment Tool (OHAT). But members acknowledged that nursing skills may be needed to use the BOHSE and ROAG.

The committee recognised the complex needs of residents, with many having long-term chronic conditions or needing the support of others for their daily care. The

committee was also aware of the high staff turnover in some care homes. It agreed that using the OHAT is likely to result in a more consistent, improved approach to mouth care in all care settings and by all relevant care staff. In addition, staff changes or shift rotations would not affect the way it is carried out.

The evidence set out in review 2 about OHAT (ES2.1) and the validation and standardisation work undertaken by the authors of the OHAT were acknowledged (ES1.1, 1.2, 1.3). In addition, the testing for ease of use by a range of care home staff and residents added further weight to the committee's deliberation. This included evidence that it had been tested with residents who have dementia or communication difficulties.

In addition, the committee heard of emerging research on its use in other settings and groups – the results of which could be transferable to a residential care home setting.

The committee reflected on qualitative evidence about the concerns and views of care home staff. It agreed this was an important opportunity to increase care home staff's oral health knowledge and skills.

The qualitative evidence confirmed that having a standardised, validated oral health assessment tool along with any associated training, was likely to lead to improvements in residents' oral health. (This was also identified in 1 moderate-quality controlled before-and-after study.) This evidence also confirmed it would remove barriers to accessing dental care where needed (ES3.3).

The committee acknowledged that carrying out an initial oral health assessment may be a new process for some care home managers, and acknowledged the time and resources that may be involved. Nevertheless, it believed this to be an essential component in promoting oral health for this population.

So the committee agreed that OHAT should be recommended for use in all care settings, by any trained care home staff, at admission and also on a regular basis to maintain residents' oral health because OHAT:

- is fit for use with any care home resident

- does not require specialist training
- is standardised, validated, and has good test-retest reliability
- would support care home managers in implementing the recommendations consistently
- would reduce variation in practice across the care sector.

Section 1.4 Daily mouth care

Chlorhexidine

The committee noted good quality evidence from 14 studies about the effectiveness of mouthrinse containing the antiseptic chlorhexidine alone, or compared with other types of mouth rinse. Nine studies reported improvements in a range of clinical outcomes (ES1.8–11, 1.13, 1.14).

The committee recognised that the evidence for using a mouthrinse containing chlorhexidine alone appeared to be compelling. But review 1 also raised concerns about its adverse effects (ES1.15) for some residents. These included: involuntary gagging response, impact on taste and staining of the tongue, teeth, dentures and gums. In addition, there have been reports of an anaphylactic reaction to chlorhexidine and a drug safety notice about hypersensitivity has been issued by the Medicines and Healthcare Regulatory Authority.

The committee was concerned that promoting a single product such as chlorhexidine may be regarded as promoting the medication of vulnerable people, some of whom will already receive many medicines or drugs. In addition, committee topic experts said that although chlorhexidine is used to combat a range of mouth infections, it is not a substitute for effective tooth brushing of natural teeth or dentures.

Taking these issues into account, the committee agreed that the use of chlorhexidine in isolation was unlikely to be the most effective intervention. But members did suggest including it as part of a range of good quality oral health interventions after an oral health assessment, and taking into account the resident's needs and preferences (ES1.10–14).

Sugar-free chewing gum containing xylitol

The committee considered review 1 evidence for using sugar-free chewing gum containing xylitol (ES1.11, 1.16). It noted good evidence from a UK study that this improves oral health outcomes for older people in residential care, compared with usual care. It was agreed that it may offer some benefit for adults with natural teeth. Members also agreed that it could be included as part of a range of good quality oral health interventions, after an oral health assessment and taking into account the resident's needs and preferences.

However, the committee agreed that it may not be suitable for all residents, including those with dentures and any who may have difficulty swallowing. In addition, members agreed that it may not be practical for general use in all care homes. One topic expert member pointed out that some service providers may find it difficult to get.

Links between daily mouth care and health and wellbeing

The committee noted evidence from studies in review 2 that families and carers of people in care homes may not understand the links between good quality daily mouth care and health and wellbeing. (This includes the value of using routine dental visits to detect early signs of mouth cancer.)

Section 1.5 Care home staff knowledge and skills

The committee discussed evidence from 46 studies in review 3 (ES3.1, ES3.2) on how knowledge about oral health and skills to perform daily mouth care affects the oral health care of residents. Six of these studies also reported that sufficient or improved oral health knowledge and skills also enable access to dental care services.

Two studies (1 good quality and 1 moderate quality) reported that if the care home had a positive attitude to oral health care this tended to lead to dental team involvement (ES3.6).

The committee agreed that it was important to tackle the lack of knowledge, skills or understanding about the importance of oral health among care home staff, care home managers and dental teams.

Section 1.7 General dental practice

The committee noted that general dental practice should act as a first point of call for routine and preventive care and dental treatment in care homes. However, it also recognised that practitioners may be limited in what they can do and that dental care carried out in a clinic may be safer and more effective (EP1). There was discussion about the potential lack of specialist equipment or what equipment is portable. It may also be more difficult to maintain appropriate levels of infection control, which may lead to safety issues.

Section 1.7 Oral health promotion services

The committee recognised that oral health promotion services could offer local care homes support and advice. This includes providing educational materials and training and help to link up with dental and public health services. It also includes providing advice and support to help meet residents' oral health care needs.

Section 1.8 Community dental services

The committee acknowledged that it may be difficult for many residents, not just those with mobility issues, to use off-site dental services. Community dental services can provide specialist dental care to residents who have complex oral health needs, a disability or medical condition (see NHS Choices information on NHS dental services). This includes people:

- with moderate and severe learning and physical disabilities or mental health problems
- with medical conditions who need additional dental care
- who are housebound or homeless.

Members recognised that practitioners may be limited in what care and treatment they can safely deliver in a care home (see section 1.6).

Section 1.9 Strategic planning for local oral health services

The committee discussed the fact that many people in care homes have unmet oral health needs and that commissioners of NHS and public health services have a duty of care to ensure those needs are met.

It agreed that current funding structures for dental services provided for care homes were poorly understood and confusing.

The committee felt it was important to ensure the recommendations in this guideline are linked to NICE's guideline on oral health: approaches for local authorities and their partners to improve the oral health of their communities.

Economic evidence

There is very limited published economic evidence on interventions to improve the oral health of care home residents. In the absence of such evidence, a bespoke model would usually be developed to estimate cost effectiveness, ideally using NICE's preferred method of cost utility analysis.

NICE explored this approach after identifying evidence that poor oral health may be associated with cardiovascular disease and respiratory disease (utility values are available for these health states, so a cost utility analysis would be possible). However, on further examination and in discussion with the committee, the evidence was considered insufficient to demonstrate that poor oral health directly causes these diseases. So a cost-utility model was not developed.

Based on the evidence available, it was apparent the economic analysis would be limited to measures of oral health. Moreover, given the lack of evidence on health-state utility values related to oral health, the committee supported development of a cost–consequences analysis (Economic report). It favoured this approach because it can capture a wide range of benefits. However, in the event, the outcomes of the source studies were limited to clinical measures and so it could not report a wide range of benefits.

The committee agreed that the effectiveness review had identified the best available evidence to inform the analysis and 2 interventions were included:

- direct education of care home staff and oral health care (based on Frenkel et al. 2001[4])

[4] Frenkel HF, Harvey I, Newcombe RG (2001) Improving oral health in institutionalised elderly people by educating caregivers: a randomised controlled trial. Community Dentistry and Oral Epidemiology 29: 289–97

- direct education of care home staff, and use of a protocol for planning and delivering oral care and compliance checking (based on Samson et al. 2009[5]).

These interventions mirrored the types of approaches the committee was considering making recommendations about.

The perspective of the cost–consequences analysis was a single nursing home. The time horizon was 2 years, based on the average length of stay for a resident reported in the literature. The inputs included:

- number of residents
- percentage of residents who need help with daily oral care
- whether residents use manual or electric toothbrushes
- roles of staff carrying out the interventions
- whether the time of staff who attend oral education training is 'back filled'
- number of education sessions to ensure all relevant staff are trained.

The first intervention cost £15,154 (£379 per resident) over 2 years. Of this, the education programme (1 hour in year 1, 1 hour in year 2) cost £299 (£7.50 per resident). The remaining £14,855 (£371 per resident) was the cost of providing residents with oral care over 2 years.

The second intervention cost £30,241 (£756 per resident) over 2 years. Of this, the education programme (4 hours in year 1, 2 hours in year 2) cost £719 (£18 per resident). The cost of oral care was the same as in the first intervention. The generic care plans cost £178 to create and performing a 20-minute oral health assessment on every resident cost £391 (£9.80 per resident).

Monitoring the care home's compliance was a substantial cost. The base case assumes this takes the care manager 2 minutes per resident, per day, costing a total of £14,275 (£357 per resident) over 2 years.

[5] Samson H, Berven L, Strand GV (2009) Long-term effect of an oral healthcare programme on oral hygiene in a nursing home. European Journal of Oral Sciences 117: 5759

One-way sensitivity analyses showed that the largest effect on total cost was determined by parameters using up a large amount of staff time, such as providing daily oral care (if a lot of residents need help) and monitoring compliance.

The committee considered both training and oral care to be relatively low cost but was reluctant to make any judgments about whether the interventions represent good value for money. This was partly because the significance of the changes in clinical indices reported in the intervention studies (such as the gingival index) were difficult to interpret. But it was also because the opportunity costs – that is, the value of different activities carried out by the care home, such as treating pressure sores – were unknown.

The committee considered the use of clinical indices in studies of oral health to be a serious limitation. It developed an evidence statement that it believes better captures the benefits of good oral health:

> 'There is evidence that oral health affects overall quality of life and wellbeing (Naito et al. 2006; Marino et al. 2008). et al. 2006; Marino et al. 2008). It seems self-evident that having a comfortable, pain-free mouth, with enough teeth to be able to enjoy food and adopt a healthy diet, would be important for the person and their close family and associates. This would be the case regardless of the person's age or other impairments. This observation is supported by research (Sheiham et al. 1999, Locker D 2002).
>
> In addition, having an acceptable appearance would be considered a social norm (Hassal 2006) and an acceptable level of cleanliness in the mouth would be considered by most to be normal social behaviour.
>
> All of these important outcomes are potentially compromised if daily plaque removal is neglected. If the mouth is not adequately cleaned, gum inflammation and its associated condition, irreversible periodontitis (gum disease), can cause bad breath, tooth loss, abscesses and pain. Tooth brushing with a fluoride toothpaste also helps prevent the development of dental caries (decay).

> The effectiveness of plaque removal for slowing disease progression can be measured using plaque, periodontal, gingival and caries indices. These indices are measures of conditions that are known to affect speech, taste, pain and discomfort, chewing ability, self-confidence, ability to socialise, and sometimes daily life, particularly among older people. But the indices do not capture the other consequences of poor oral health.
>
> The extent to which this occurs can be assessed using psycho-social indicators such as the oral health impact profile (Locker and Jokovic 1996).'

The committee noted that apart from the clinical impacts, many of the benefits captured in the statement above are not included in the cost–consequences analysis due to an absence of data, and should therefore be considered additional benefits.

Evidence reviews

Details of the evidence discussed are in evidence reviews, reports and papers from experts in the area.

The evidence statements are short summaries of evidence. Each statement has a short code indicating which document the evidence has come from.

Evidence statement number 1.1 indicates that the linked statement is numbered 1 in review 1: 'Effectiveness'. **Evidence statement number 2.1** indicates that the linked statement is numbered 1 in review 2: 'Best practice'. Evidence statement number 3.1 indicates that the linked statement is numbered 1 in review 3: 'Barriers and facilitators'. EP1 indicates that expert paper 1 'NHS dental services commissioning: oral health for adults in care homes' is linked to a recommendation . And EP2 that expert paper 2 'Oral health in residential and nursing homes younger adults' is linked.

If a recommendation is not directly taken from the evidence statements, but is inferred from the evidence, this is indicated by **IDE** (inference derived from the evidence).

Recommendation 1.1: evidence statements 1.3, 1.14, 2.6; 3.3, 3.5, 3.6, 3.7, 3.11; EP1, EP2; IDE

Recommendation 1.2: evidence statements 2.5, 3.2, 3.4, 3.5; EP1; IDE

Recommendation 1.3: evidence statements 1.1, 1.2, 1.3, 2.1, 2.2, 2.5, 3.2, 3.3, 3.5, 3.8; EP1, EP2; IDE

Recommendation 1.4: evidence statements 1.7, 1.8, 1.10, 1.11, 1.12, 1.13,1.14, 1.15,1.16, 2.1, 2.2, 2.3; EP1, EP2; IDE

Recommendation 1.5: evidence statements 1.1, 1.3, 1.5, 1.6; 2.4, 2.5, 3.1, 3.2; EP1, EP2; IDE

Recommendation 1.6: evidence statements 2.6, 3.6, 3.7; EP1, EP2; IDE

Recommendation 1.7: evidence statements 2.6, 3.6, 3.7; EP1, EP2; IDE

Recommendation 1.8: evidence statements 2.6; 3.6, 3.11; EP1, EP2; IDE

Recommendation 1.9: evidence statements 2.4, 2,5, 2.6, 3.3; EP1; IDE

Recommendations for research

The guideline committee has made the following recommendations for research.

1 Access to dental services in England for adults in care homes

How does improving access to dental services for adults in residential and nursing care homes improve their oral health?

Why this is important

No research studies were identified that look at care homes in England to determine what interventions are effective and cost effective at improving access to dental services and the impact on resident's oral health.

Providing access to dental services may have resource implications for care homes and it is not clear how the various approaches compare in terms of costs and benefits. For example, treatment or routine care offered by general dental services

could be compared with community dental services. Or dental care offered in general practices could be compared with home care.

2 Measuring improvements in care home residents' oral health

How can interventions to improve oral health and wellbeing, or to prevent dental disease, be measured using a patient-centred approach that can also be used to judge cost effectiveness?

Why this is important

Oral health research tends to use clinical dental indices (such as the plaque, gingival and denture plaque indices) to provide a measure of statistical relevance. This approach often fails to recognise the difference between what clinicians value in research and what patients or carers may value more generally. In addition, clinical dental indices cannot be used as the basis of a cost-utility analysis.

A range of person-centred measures and study designs are needed that can also be used to determine cost effectiveness. These measures would capture the views of all residents living in care homes and could include:

- how much they value having a clean, pain-free, healthy mouth
- how poor oral health may affect their self-esteem and general quality of life
- whether or not their dignity and individuality is respected and understood (especially in regard to dentures).

3 Effectiveness and costs of oral health interventions for care home residents

How effective and cost effective are oral health interventions in residential and nursing care?

Why this is important

There is a lack of good quality data on the effectiveness of oral health interventions and the costs of delivering them to residents in care homes in England. These data are needed for evaluation purposes to inform future guidance and commissioning decisions. Moreover, this information is vital for informing efficient use of limited resources.

4 Daily mouth care for residents

Does routine daily mouth care in residential and nursing care homes improve adult residents' oral health and their ability to eat, speak and socialise without pain or embarrassment?

Why this is important

There is a lack of evidence on the delivery of daily mouth care for adults in care homes in England. Research is needed to find out whether this improves residents' oral health and any other aspect of their physical health and wellbeing, including their language, reasoning and judgement.

5 Care home groups and settings

Do different groups in different residential and nursing care settings get different benefits from oral health interventions?

Why this is important

There is little research about the oral health needs of adults with poor physical health and a short life expectancy. It is important to understand the impact of oral health interventions on these groups to ensure equitable access to oral health services.

6 Including oral health in health passports

What are the practical benefits and difficulties of including oral health data in health passports?

Why this is important

Including oral health in health passports for all adults in care homes (not just younger adults) may help ensure consistency of access to dental services and treatment. This is particularly important if a resident has to move to a different care home a distance away from their previous location.

7 Reducing demands on health and social care services

Do oral health interventions in residential and nursing care homes reduce demands on other health and social care services?

Why this is important

No research has been conducted in England that demonstrates a reduction in demand on other resources, such as hospital admissions, as a result of oral health care interventions. This is particularly important if limited resources are to be used efficiently.

8 Offering fluoride varnish to adults in care homes

How effective and cost effective is fluoride varnish in preventing oral health problems among adults in residential and nursing care homes?

Why this is important

This is a high priority because research with children suggests that applying fluoride varnish helps prevent tooth decay. On that basis, it may also benefit some care home residents, but there is a lack of evidence on its use in adults who may need support with daily mouth care. Older adults, in particular, may be more susceptible to root caries, which fluoride varnish may help prevent. Studies in adults, including older adults, would help to establish the benefits of fluoride varnish for people living in care homes.

9 Barriers to carrying out daily mouth care and oral health assessments for adults in care homes

What are the barriers to delivering daily oral care and conducting oral health assessments in residential and nursing care homes?

Why this is important

Understanding more about the barriers to these activities is a high research priority because it could inform the development of an evidence-based, practical mouth care and assessment manual for care home workers.

Glossary

General dental practices

General dental practices are commonly known as ‘high street dentists’ and provide primary care dental services.

1 **Oral health**

2 Oral health is essential to general health and quality of life. It means being free from
3 mouth and facial pain, oral and throat cancer, oral infection and sores, gum disease,
4 tooth decay, tooth loss, and other diseases and disorders that limit a person's ability
5 to bite, chew, smile and speak.

6 The Oral Health Assessment Tool

7 With kind permission of the Australian Institute of Health and Welfare.

8 Source: Australian Institute of Health and Welfare Caring for oral health in Australian
9 residential care (2009). Modified from Kayser-Jones et al. (1995) by Chalmers
10 (2004).

Resident:———————————————————— Completed by:————————————————————				Date:——/——/——
	Scores – You can circle individual words as well as giving a score in each category (* if 1 or 2 scored for any category please organise for a dentist to examine the resident)			
Category	**0 = healthy**	**1 =changes***	**2 = unhealthy***	**Category scores**
Lips	Smooth, pink, moist	Dry, chapped, or red at corners	Swelling or lump, white, red or ulcerated patch; bleeding or ulcerated at corners	
Tongue	Normal, moist roughness, pink	Patchy, fissured, red, coated	Patch that is red and/or white, ulcerated, swollen	
Gums and tissues	Pink, moist, smooth, no bleeding	Dry, shiny, rough, red, swollen, 1 ulcer or sore spot under dentures	Swollen, bleeding, ulcers, white/red patches, generalised redness under dentures	
Saliva	Moist tissues, watery and free flowing saliva	Dry, sticky tissues, little saliva present, resident thinks they have a dry mouth	Tissues parched and red, little or no saliva present, saliva is thick, resident thinks they have a dry mouth	
Natural teeth Yes/No	No decayed or broken teeth or roots	1-3 decayed or broken teeth or roots or very worn down teeth	4+ decayed or broken teeth or roots, or very worn down teeth, or less than 4 teeth	
Dentures Yes/No	No broken areas or teeth, dentures regularly worn, and named	1 broken area or tooth or dentures only worn for 1-2 hours daily, or dentures not named, or loose	More than 1 broken area or tooth, denture missing or not worn, loose and needs denture adhesive, or not named	
Oral cleanliness	Clean and no food particles or tartar in mouth or dentures	Food particles, tartar or plaque in 1-2 areas of the mouth or on small area of dentures or halitosis (bad breath)	Food particles, tartar or plaque in most areas of the mouth or on most of dentures or severe halitosis (bad breath)	
Dental pain	No behavioural, verbal, or physical signs of signs of dental pain	There are verbal and/or behavioural signs of pain such as pulling at face, chewing lips, not	There are physical pain signs (swelling of cheek or gum, broken teeth, ulcers), as well as verbal	

		eating, aggression	and/or behavioural signs (pulling at face, not eating, aggression)	
_ Organise for resident to have a dental examination by a dentist _ Resident and/or family or guardian refuses dental treatment _ Complete oral hygiene care plan and start oral hygiene care interventions for resident _ Review this resident's oral health again on Date:——/——/——				TOTAL __ SCORE: 16

1

2 ISBN: