



Cedar

Healthcare Technology Research Centre

Economic literature review of approaches for adult nursing and residential care homes on promoting oral health, preventing dental health problems and ensuring access to dental treatment (Review 4)

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For NICE Public Health Guidance Oral health: promoting and protecting oral health and ensuring access to dental treatment for adults in nursing and residential care homes



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1 Background

The National Institute for Health and Care Excellence (NICE) has been asked by the Department of Health (DH) to develop a public health guideline for carers working in health and social residential care settings (including nursing homes and residential care homes) on effective approaches to promoting oral health, preventing dental health problems and ensuring access to dental treatment when needed.

This guideline will provide recommendations for good practice, based on the best available evidence of effectiveness, including cost effectiveness. It is aimed at health and wellbeing boards, clinical commissioning groups and health and social care professionals, commissioners and managers working within the NHS, local authorities and the wider public, private, voluntary and community sectors.

In planning the development of this guideline, NICE commissioned the following pieces of work from the Support Unit for Research Evidence (SURE) at Cardiff University:

- A systematic review of the effectiveness of interventions to promote oral health, prevent dental problems and ensure access to treatment for adults in care home settings (Review 1).
- A review of the information needs of care home staff to enable them to meet the oral health needs of adults in care homes (Review 2)
- A review of barriers and facilitators i.e. factors that either hinder, or enable the giving of good oral care to adults in care homes (Review 3)

NICE have also commissioned Cedar to undertake three pieces of work:

- A review of published economic studies of the interventions to promote oral health, prevent dental problems and ensure access to treatment for adults in care home settings explored in Review 4.
- A review of studies to explore whether poor oral health has an adverse impact on general health and well being (Review 5).
- A *de novo* economic analysis of promoting oral health, preventing dental health problems and ensuring access to dental treatment for adults in nursing and residential care homes, based on the findings of Reviews 1, 4 and 5.

Preliminary work on Review 1 has indicated that a range of effectiveness evidence exists to support guideline development. The studies investigate the effectiveness of interventions to improve oral health. The studies report as outcomes: measures of oral health in adults in care homes, the degree of knowledge about oral care of care givers and the compliance of care givers in delivering oral care, and also the effect of specific interventions including tooth brushing, use of chlorhexidine mouthwash and fluoride products. It appears that from screening the literature identified for Review 1 that there is a paucity of relevant published cost effectiveness evidence. However for Review 4, Cedar will search specific economic databases to identify whether other relevant evidence exists. This document is the protocol for Review 4.

2 Methods

This review will be undertaken in accordance with the NICE public health methods manual (1).

2.1 Research question

The research question for this review is:

- What approaches, activities or interventions are effective and cost effective in promoting and protecting oral health and ensuring access to dental care (including regular check-ups) for adults in care homes?

2.2 PICO framework

Our approach is based upon that of Review 1 and is defined by the PICO framework as follows:

Population

Adults in care homes with or without nursing provision (This may include adults living in community hospitals that also provide long-term care), including people staying for rehabilitation or respite care. In this guideline the term 'care home' covers homes that provide 24-hour residential care.

Interventions

Activities that will be covered:

- Conducting assessments of individual oral health, for example on entry to a care home and in response to changing oral health needs.
- Maintaining access to dental services, including those offered by local salaried dental services, general dental practice and coordinating other health care services. For example joining up oral health services with other health initiatives provided in care home settings (such as services offered by GPs, vision testing, social services, podiatry).
- Staff training about oral health (including understanding the effect of oral health on general health and wellbeing).
- Increasing access to fluoride for people living in care homes. For example, by providing free fluoride toothpaste or gels, providing fluoride supplements, or by dental health care professionals offering fluoride varnish applications in care homes.
- Providing oral health education and information about promoting and maintaining oral health (for example the role of diet, techniques for brushing teeth and maintaining healthy dentures).
- Providing resources to improve oral hygiene for people living in care homes (as appropriate), for example providing a range of toothbrushes including electric toothbrushes.
- Managing transitions if oral function deteriorates or a person's usual diet has to change.
- Considering the effect of diet, alcohol and tobacco on the oral health of people living in care homes.

Comparator

- Any comparator



Outcomes

Results of economic analyses (cost-consequence, cost-benefit, cost-effectiveness, cost-utility analyses) of the following outcomes:

- Changes in:
 - The oral health of people living in care homes. For example, by identifying either the incidence and prevalence of tooth decay, periodontal disease, oral discomfort including pain and oral cancer. Also, for example, leading to a change in nutritional status among people living in care homes.
 - General health and well being.
 - Modifiable risk factors, including the use of fluoride toothpaste, fluoride supplements, fluoride varnishes, frequency and quality of oral hygiene practices, and access to or visits from dental services.
 - Policies or procedures in care homes.
 - Knowledge and attitudes of care home managers and staff, and other health and social care professionals.
 - Resident's quality of life, including social and emotional wellbeing. People's knowledge and ability to improve and protect their oral health.
 - People's oral health behaviours.
- Adverse events or unintended consequences

2.3 Literature search

We will seek economic studies published in the English language from 1995 onwards (consistent with Review 1 being carried out by SURE), though studies identified from reference list checking or citation tracking published prior to this time that are deemed to be relevant will be included. The following activities will be used to seek relevant economic evidence:

- SURE will examine the Reference Manager database of literature identified for Review 1 to determine whether it contains any relevant economic evidence and will send relevant papers to Cedar.
- Cedar will run a modified search of the strategy used in Review 1 in the economic databases listed below to identify relevant economic evidence. The search strategy will be a modified design of that used in Review 1 as constrained by the search capabilities of the databases to be searched. The searches will focus on using key oral health and population terms, an example strategy is provided below for NHS EED (Cochrane Library)
 - Cost Effectiveness Analysis [CEA] registry <https://research.tufts-nemc.org/cear4/>
 - EconLit (EBSCO)
 - EconPapers (<http://econpapers.repec.org/>)
 - HEED (please note that this is no longer available as of 31st Dec 2014 but was searched before this date and before this protocol was finalized).
 - NHS EED (Cochrane Library)
- Cedar will search the following websites for economic evidence:
 - Australian Research Centre for Population Oral Health <http://www.adelaide.edu.au/arc poh/>
 - British Society of Gerodontology
 - British Society for Disability and Oral Health
 - Electronic Theses Online Service (EThOS) <http://ethos.bl.uk>
 - Community Dental Health <http://www.cdjournal.org/>
 - Health Evidence Canada <http://www.healthevidence.org/>
 - International Association of Dental Research (IADR)
 - National Oral Health Conference
 - <http://www.nationaloralhealthconference.com/>
 - NICE Evidence Search <https://www.evidence.nhs.uk/>
 - Public Health England <https://www.gov.uk/government/organisations/public-health-england>
 - Public Health Wales <http://www.wales.nhs.uk/sitesplus/888/home>
 - Scottish Public Health network <http://www.scotphn.net/>
 - Social Care Institute for Excellence (SCIE) <http://www.scie.org.uk/>
 - US National Guideline Clearing House <http://www.guideline.gov/>
 - Australian Clinical Practice Guidelines Portal <http://www.clinicalguidelines.gov.au/>
 - New Zealand Guidelines Group <http://www.health.govt.nz/about-ministry/ministry-health-websites/new-zealand-guidelines-group>
 - Public Health Agency of Canada <http://www.phac-aspc.gc.ca/dpg-eng.php>
- The reference lists of identified studies will be checked for further relevant literature.



2.3.1 Example search strategy

NHS Economic Evaluation Database : Issue 4 of 4, October 2014

- | ID | Search |
|-----|---|
| #1 | MeSH descriptor: [Nursing Homes] explode all trees |
| #2 | MeSH descriptor: [Residential Facilities] this term only |
| #3 | MeSH descriptor: [Homes for the Aged] this term only |
| #4 | MeSH descriptor: [Assisted Living Facilities] this term only |
| #5 | MeSH descriptor: [Long-Term Care] this term only |
| #6 | ((elderly or old age) near/2 (home*)) or assisted living facilit* or ((nursing or residential or care) near/2 (home* or facilit*)):ti,ab,kw (Word variations have been searched) |
| #7 | MeSH descriptor: [Disabled Persons] this term only |
| #8 | MeSH descriptor: [Vulnerable Populations] this term only |
| #9 | MeSH descriptor: [Learning Disorders] this term only |
| #10 | MeSH descriptor: [Mentally Disabled Persons] this term only |
| #11 | #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 |
| #12 | ((oral or dental or mouth or teeth or tooth or gum or periodontal) near/2 (care or hygiene or health)) or ((tooth or teeth) near/2 (decay* or loss)) or (oral disease* or oral neoplasm* or oral cancer* or dental disease* or mouth disease* or dental decay or mouth neoplasm* or mouth cancer* or gum disease* or DMF or caries or gingivitis or periodontal disease* or periodontitis or dental plaque or oral plaque or dry mouth or xerostomia):ti,ab,kw (Word variations have been searched) |
| #13 | MeSH descriptor: [Fluorides, Topical] this term only |
| #14 | MeSH descriptor: [Dentifrices] explode all trees |
| #15 | MeSH descriptor: [Dental Care for Aged] this term only |
| #16 | MeSH descriptor: [Dental Care for Disabled] this term only |
| #17 | MeSH descriptor: [Geriatric Dentistry] this term only |
| #18 | MeSH descriptor: [Dental Care for Chronically Ill] this term only |
| #19 | MeSH descriptor: [Dental Care for Disabled] this term only |
| #20 | MeSH descriptor: [Health Education, Dental] this term only |
| #21 | MeSH descriptor: [Preventive Dentistry] this term only |



- #22 MeSH descriptor: [Mouthwashes] this term only
- #23 MeSH descriptor: [Toothbrushing] this term only
- #24 MeSH descriptor: [Dental Care] this term only
- #25 MeSH descriptor: [Oral Health] this term only
- #26 MeSH descriptor: [Oral Hygiene] this term only
- #27 MeSH descriptor: [Periodontal Diseases] this term only
- #28 MeSH descriptor: [Mouth Diseases] this term only
- #29 MeSH descriptor: [Mouth Neoplasms] explode all trees
- #30 MeSH descriptor: [Xerostomia] this term only
- #31 #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
- #32 #11 and #31

2.4 Study selection

The studies will be imported to a Reference Manager 12 database. Two independent reviewers will perform the following stages with resolution of disagreement between themselves initially, or if disagreement persists by a third reviewer:

- First selection by title and abstract (100%)
- Second selection using full text (100%)
- Quality check using agreed checklist, or format (100%)
- Data extraction (100%)

The study selection process will be documented and will contain a flow chart.

2.5 Assessment of study quality

Quality assessment will be conducted using the quality appraisal checklist for economic studies in the 2012 NICE Guidelines Manual (Appendix I) (1), including internal and external validity (1). Each paper will be assessed by one reviewer and checked for accuracy by another. Each study will be rated ('++', '+' or '-') to indicate its quality.

2.6 Presentation of results

The results of each individual study will be presented in an evidence table, based on the 2012 NICE Guidelines Manual (Appendix K3) (1). A narrative summary will be provided for each study. The main findings of the review will be presented as an evidence statement, including the content of the economic studies, population studied and the setting of the study, the strength of the evidence, direction and size of effects and applicability to the research question, in accordance with the 2012 NICE Guidelines Manual (1).

Comment [LS1]: So just checking... this means 2 reviewers will be double screening everything - at abstract and full paper level, and quality and data extractions?



3 Plan: Review 4

Milestone no.	Short description	Due date
02	Deliver review 4 in preparation for February PHAC meeting on 11/02/15	28/01/15
04	Attend PHAC meeting and present Review 4	11/02/15



4 Reference List

- (1) National Institute for Health and Care Excellence. Process and methods guides. Methods for the development of NICE public health guidance (third edition). <http://www.nice.org.uk/article/pmg4/resources/non-guidance-methods-for-the-development-of-nice-public-health-guidance-third-edition-pdf> 2012.