Title
COMMITing to effective mouth care for older people living in care homes – developing guiding principles based on evidence and behaviour change theory

ABSTRACT
Background
Mouth care in care homes is a challenge. Existing evidence and behaviour change theory can be used to help improve mouth care outcomes.

Aim
To develop a guiding principles resource to support care home staff with delivering mouth care.

Method
Researchers with clinical (nursing and dental) and care home expertise drafted the guiding principles resource using mouth care evidence and behaviour change theory. Care home relatives, and staff from care homes and dental/health sector settings (n=26) reviewed and developed the resource through taking part in online (n=4) and in-person (n=2) workshops.

Findings and conclusions
The guiding principles resource describes the capabilities, opportunities, and motivation that care staff need to deliver mouth care. The resource has been developed collaboratively with the care home, dental/health sectors, is accessible and engaging, and available to download. Participants suggested additional ways of disseminating evidence and raised topics for further work in this area.

Key points: (4–6 full sentences that adequately summarise the major themes of your article)

1. Older people living in care homes often experience poor mouth care related outcomes.
2. Existing evidence and behaviour change theory were used to develop a mouth care guiding principles resource.
3. The resource was designed for care staff who support mouth care for older people living in care homes.
4. The guiding principles resource is accessible and engaging and has been developed in collaboration with care home relatives, and staff from care home, and dental/health sectors.
5. Care staff need care home management and dental and healthcare sector professionals to support with accessing the relevant training, support, and resources needed to deliver mouth care.

Acknowledgments
We thank the care home, dental and healthcare colleagues, and the care home relatives who participated, for their interest, time and input into developing the COMMIT study guiding principles.

Conflict of interest statement
The authors have no conflict of interest.

Key words
- Older people
- Mouth care

- Care homes
- Nursing homes
- Coproduction
- Patient and public involvement
- Behaviour change theory

INTRODUCTION

Despite a robust evidence base on how to support mouth care for older people in care homes [1, 2], residents continue to experience poor oral health outcomes [3]. A recent systematic review covering data from 18 countries found that older people living in care homes typically have few natural teeth, 50-80% have removable dentures, few have healthy gums, there is a high rate of dental decay [3]. As people age, their ability to maintain their own oral hygiene can deteriorate due to factors such as cognitive decline, medical conditions, and physical impairment [4].

Improving mouth care for this population is critical given the impact of mouth care on oral health [5, 6]. It has been demonstrated that poor oral health has a direct impact on frailty [7, 8], quality of life [9], and general health outcomes [10].

Bridging the gap between evidence and practice in care homes requires active engagement and collaboration among care home staff, dental professionals and other interested parties (e.g. care home relatives). Co-development of practical, relevant, and evidence-based solutions is essential to ensure consistent and effective mouth care for older people. Collaboration should be embedded throughout the research process, from identifying uncertainties, to designing and conducting studies, and ultimately translating findings into practice. Making use of established implementation science and/or behaviour change theories can further support the effective integration of evidence into routine practice and care.

Collaborative working and the COMMIT study

This paper describes the final phase of a broader research initiative - the Caring Optimally: promoting effective Mouth MInuTes in care homes (COMMIT) study. The COMMIT study was developed through a care and science partnership - Nurturing Innovation in Care Homes Excellence in Leeds (NICHE-Leeds) [11]. It was initiated by a care worker, who asked *"how can I help residents with their mouth care, particularly when they resist this care?"* [12].

The first phase of the COMMIT study involved conducting an overview of systematic reviews [13], a scoping literature review [14] and a qualitative study [15]. Together these components investigated the key issues, needs, and challenges involved in maintaining and improving mouth care in care homes. This paper reports on the second phase of the study, which involved workshops to develop a resource in collaboration with individuals with an interest in promoting mouth care for older people in care homes. The resource outlines the support care staff need to integrate mouth care into their daily routines and is presented as the COMMIT study guiding principles.

METHOD

Ethical approval

Ethical approval for this study was provided by the University of Leeds, Faculty of Medicine and Health (School of Healthcare) Research Ethics Committee (HREC 21-004).

The COMMIT study guiding principles

The COMMIT study guiding principles were defined as *key considerations to support care home staff to carry out 'effective mouth minutes'* - routine, meaningful mouth care for older people as part of their day-to-day work. The guiding principles were presented in a resource comprising four sections, designed for those supporting mouthcare in practice. The first section offered an introduction, while the following three sections were based on a behaviour change framework [16] which explains that a person's behaviour is the result of:

- Capabilities – having the knowledge and skills to perform a behaviour, titled *'I know how to support residents with mouth care'*.
- Opportunities – being in an environment that enables a behaviour, titled *'I have what I need to support residents with mouth care'*.
- Motivation – having the desire or drive to perform the behaviour, titled *'I want to support residents with mouth care'*.

The resource contained evidence-based information, presented in an accessible and engaging language and format, describing the support care staff need to deliver effective mouth care.

The resource was initially developed by KS, KVC and JC using Microsoft Word, drawing on findings from earlier phases of the COMMIT study [13-15]. The wider study team (including EF and KW, members of the public with experience of care homes) reviewed and refined the draft. The resource was further developed in collaboration with individuals with an interest in promoting mouth care of older people living in care homes.

Study design

Workshops were used to work with individuals from care homes, and dental/health sectors on developing the COMMIT study guiding principles resource.

Participant recruitment

Using convenience sampling we aimed to recruit three key groups: (i) older people living in care homes and their relatives; (ii) care home staff (care workers, senior care workers, registered nurses and managers); and (iii) dental and health professionals with a role in promoting mouth care and oral health for care home residents.

Study information was shared by RD via email across the following networks:

- participants from an earlier phase of the COMMIT study [15]
- care home organisations part of NICHE-Leeds.
- members of the COMMIT study steering group.

In total 26 participants were recruited. The specific roles represented are listed in Box 1.

Box 1: Number and roles of participants recruited

- 10 frontline care staff (5 day shift and 5 night shift workers: 2 Registered Nurses, 8 care workers)
- 4 care home relatives
- 5 care home managers
- 1 senior dental officer
- 3 consultants in dental public health

- 1 dental public health researcher
- 1 consultant in elderly care medicine
- 1 senior public health research officer

Workshops

Each participant attended one workshop and provided informed consent prior to participation (obtained by RD). To ensure a safe and supportive environment, separate workshops were held for frontline care staff and for relatives. Care home managers and dental and healthcare professionals took part in a workshop attended by a mix of participants. This approach aimed to encourage open discussion, allowing participants to speak freely, without concern for potential consequences, whether related to employment (for care staff) or the care received (for relatives). In total, 6 workshops were held:

- Two in-person workshops in two care homes located in Leeds (attended by frontline care staff).

Four online workshops were conducted using Microsoft Teams, one with care home relatives, and three with a mix of individuals involved in promoting mouth care and oral health. The purpose of these workshops was to gather feedback on the draft version of the COMMIT study guiding principles resource. During workshops, participants were invited to discuss the following questions:

- Are the guiding principles helpful for improving mouth care?
- Does the content reflect your experience?
- Is there anything that does not match your experience?
- Is there anything missing that should be added?
- Do you have any suggestions for improving the wording?
- Is the document helpful?

Participants received the drafted version of the COMMIT study guiding principles resource, the workshop purpose, and the planned discussion questions 1-2 weeks in advance, with reminders sent 2-3 days before the scheduled workshop. During workshops the resource was reviewed page by page, and participants had the opportunity to provide feedback on the entire document. Workshops took place between November – December 2023. They were facilitated by members of the research team (RD, KVC, KH, JC, GD, KS), and were recorded with permission.

Data analysis

Recordings of workshops were listened to, and detailed notes written (by RD, JC, and KVC) and analysed by RD using deductive coding [17], organising feedback and comments into either:

1. Suggestions to change wording/phrasing to help promote clarity. The guiding principles resource was edited to reflect these suggestions.
2. Content related suggestions. These suggestions were further grouped into:
    a) Building on existing content - suggestions were added to the guiding principles resource.
    b) Requests for new content were considered within scope if related to mouth care related capabilities, opportunities, and motivation. When needed, using our network, we worked with practice based dental colleagues to support with adding information about specific mouth care products (e.g. denture care products). Content related suggestions requesting detailed information around a specific

condition or scenario (e.g. how to support residents with sensitive teeth) were noted for further exploration in future collaborative projects.

3. Suggestions of ways to enhance the presentation of the guiding principles resource. Requests for resources in other formats were noted as ideas for developing additional materials.

Participants feedback was used to develop and refine the drafted guiding principles resource.

FINDINGS AND DISCUSSION

Developing practical and evidence-based resources in collaboration with individuals in practice is key to bridging the gap been evidence and practice. Guiding principles have also been used to improve practice in other areas, such as, improving access to high-cost medicine [18], improving medication management [19], and enhancing engagement with research [20]. In this study, the guiding principles resource has been developed collaboratively with the care home, dental/health sectors, and the three key principles are grounded in evidence and aligned with a behaviour change framework[16]:

1. Capability: participants emphasised the importance of staff having access to training, information about denture care, understanding individual needs, and recognising changes in those needs over time.
2. Opportunity: suggestions included ensuring care home staff have access to appropriate mouth care products and timely access to dental professionals.
3. Motivation: participants highlighted the need to foster positive individual and organisational values that support mouth care.

Their suggestions were included in the final version of the guiding principles resource. The key principles are summarised in Figure 1, and the resource is available as a supplementary file and on the NICHE-Leeds web page [11]. High quality printed copies for displaying in care homes are also available (request via email: niche_leeds@leeds.ac.uk).

Figure 1: summary of the three key guiding principles

		
"I know how to support residents with mouth care"	**"I want to support residents with mouth care"**	**"I have what I need to support residents with mouth care"**
• I know the mouth care needs of each person living in the care home	• I understand the importance of mouth health for a person's physical health and general wellbeing	• I check that the resident has the right products available on hand that are fit for purpose
• I know how to give mouth care and when to ask for more training or support	• I value what is important for each person living in the care home and support person-centred mouth care	• I make mouth care part of everyday conversations with residents and their families/ friends and check it's been done twice daily
	• I accept individual responsibility to ensure daily mouth care for people living in care homes	• I make sure that I raise any concerns about the mouth health of a residents with a dentist

Participants commented that the guiding principles resource outlined the general support staff need to support the mouth care needs of older people living in care homes. During discussions participants also identified a need for more detailed information on specific conditions and scenarios listed in Box 2. We suggest care home research and practice groups work together to identify existing and relevant training resources, and identify existing evidence related to these items and translate high-quality evidence into practical, accessible, and engaging formats for care staff. If high-quality evidence is lacking, then research and practice groups will be needed to plan and conduct research projects that address any evidence gaps.

Box 2: Participant suggestions for additional information around specific conditions/scenarios

Request for detailed information, providing information on the different types of scenarios staff encounter in care homes, for example: • residents who resist care

- residents with sensitive teeth
- residents with difficulty swallowing (nil by mouth)
- residents who experience distress
- residents with learning disabilities
- residents living with advanced dementia
- residents living with Parkinson's Disease
- end of life care and maintaining comfort

During the workshops, participants suggested additional ways of optimising the dissemination of mouth care related resources (Box 3). These highlight 'push and pull' approaches as outlined in the Knowledge to Action framework [21]. These strategies, proposed by practice-based colleagues, highlight practical and meaningful ways that knowledge can be mobilised and applied within the care home setting. A key next step is to continue working collaboratively with the care home sector to develop the suggested additional resources and support their implementation in practice.

Box 3 Suggestions for additional resources

- A visual resource illustrating how mouth health affects different parts of the body (e.g. neglecting this can lead to infections).
- Advice specific for relatives, describing their role in supporting mouth care.
- Videos demonstrating how to clean a resident's mouth.
- Visual reminders, such as aide memoires (e.g. reminders in bathrooms summarising key information, such as preference for manual or electric toothbrush or toothpaste preference).
- Interactive online resources.
- Vignettes/scenarios which describe examples around how to provide mouth care to residents with different types of needs e.g. Parkinson's disease.

Implications for practice and policy

While frontline care workers are responsible for delivering day-to-day mouth care, support from care home management and dental professionals is essential to ensure they have the resources, and the training required. For example, care home managers play a key role in facilitating access to relevant training and mouth care resources. Additionally, support from the wider healthcare sector and policy makers is needed to help care homes have access to dental services. The key message is that a collective commitment from people working across the care home and dental sectors is necessary to enable care workers to deliver effective mouth minutes in care homes.

At the care home level, there is also a need to consider how the guiding principles resource can be integrated into existing systems, such as staff training programmes and digital care

software. For instance, digital prompts could be used to remind staff which mouth care products to use, helping embed good practice into daily routines.

Strengths and limitations

In this study, with individuals in practice, we have developed an evidence- and theory-based resource that outlines the support care home workers need to deliver effective mouth care. This resource is particularly timely given the persistent poor oral health outcomes experienced by older people living in care homes. However, we did not collect data describing participant demographics, or formally evaluate the workshops, for example, evaluating participant engagement with the process, and the impact this had on the guiding principles resource.

Conclusions

Older people are an underserved population [22] and reducing oral and dental health inequalities is a recognised priority [23]. Translating evidence into practice is essential to improve outcomes for this group. The COMMIT study guiding principles resource is both evidence- and theory-informed, and was developed collaboratively with care home, dental and health colleagues, and care home relatives. It outlines how to support care home staff in developing the capabilities, opportunities and motivation needed to deliver effective mouth care to older residents. To ensure successful implementation, support from care home management and relevant healthcare sector professionals is vital. Their commitment is key to ensuring care home staff have access to training, resources and professional input required to improve, or at least maintain, oral health outcomes in care homes.

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