



# Improving the oral health of older people in care homes: a feasibility study (TOPIC)

#### **Georgios Tsakos**

Department of Epidemiology and Public Health, UCL WHO Collaborating Centre of Oral Health Inequalities and Public Health

#### **Gerry McKenna**

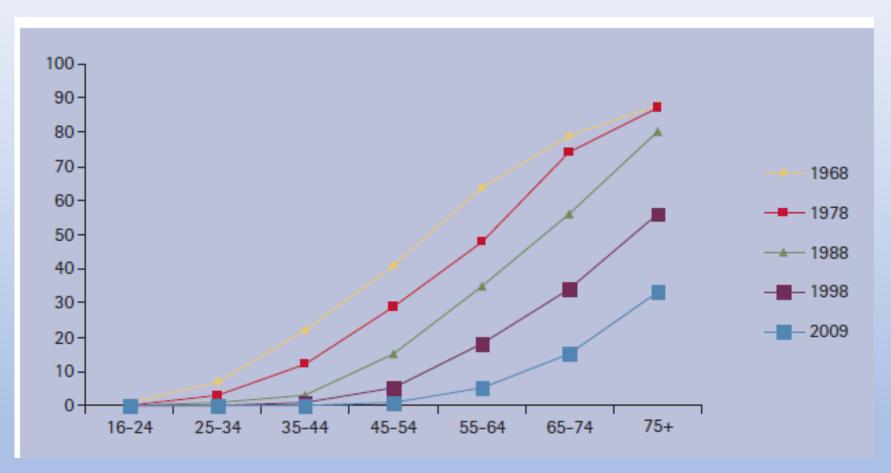
School of Medicine, Dentistry and Biomedical Sciences Centre for Public Health



# Outline – key issues

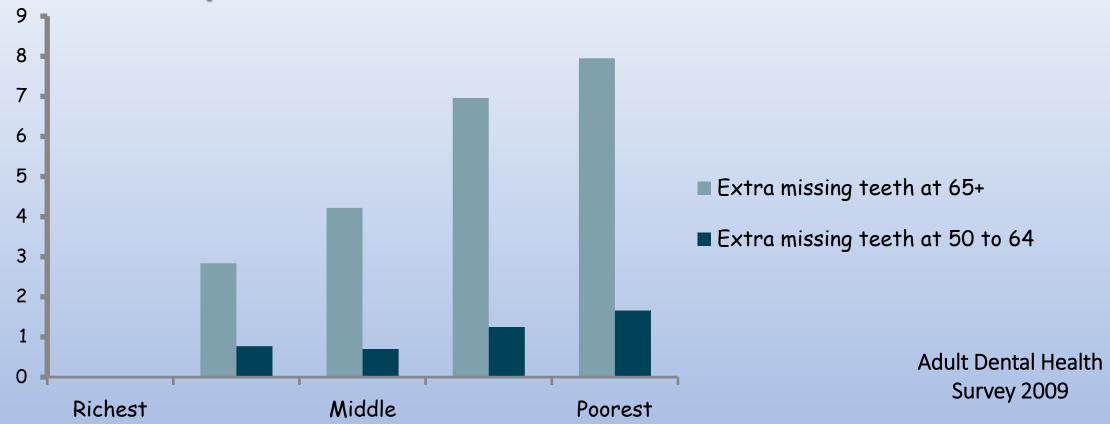
- Defining the problem oral health in older adults in care homes
- TOPIC: A study to understand how feasible the NICE guidelines are to implement in practice
- What we did
- What we found
- What we learnt

### Trends in edentulousness prevalence in UK



- **➢ Dramatic decline: overall prevalence of 6%**
- > Vast majority are dentate, even among the very old

### **Excessive inequalities in oral health**



This shows what has happened, that there is a problem.

It does not show why it happened or what we should do.

Steele JG, Shen J, Tsakos G, Fuller E, Morris S, Watt RG, Guarnizo-Herreno C-C, Wildman J. The interplay between socioeconomic inequalities and clinical oral health. Journal of Dental Research 2015; 94(1):19-26.

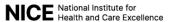
### Cliff-edge of inequality in oral health of older adults: care homes

- Around 430,000 people live in care homes in the UK
- Around 50% with some natural teeth ...
- ... with much worse oral health than independently living older adults
- Excessive comorbidity burden cognitive impairment / dementia
- Large proportion with dependency for oral hygiene practices
- Sugar rich diets
- Variable access to dental care
- Haphazard if not negligible oral health promotion practices
- Challenging for staff (without training)
- Current and future cohorts of residents with more natural teeth, therefore increased oral health needs



# NICE guideline NG48: "formal" recognition of the problem & recommendations

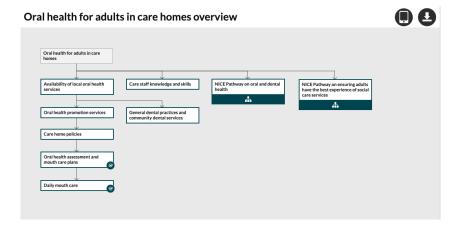
- care home policies on oral health and providing residents with support to access dental services
- oral health assessment and mouth care plans
- daily mouth care
- care staff knowledge and skills
- availability of local oral health services
- oral health promotion services
- general dental practices and community dental services





## Oral health for adults in care homes

NICE guideline
Published: 5 July 2016
www.nice.org.uk/guidance/ng48



# Improving the Oral Health of Older People in Care Homes (TOPIC): a Feasibility Study

- NICE guideline NG48 aims to maintain and improve the oral health of care home residents
- Focus on promoting oral hygiene and preventing oral diseases in older people in care homes
- Determine whether a pragmatic cluster-randomised controlled trial is feasible
- The project is funded by the National Institute for Health Research (NIHR) Public Health Research Programme [PHR17/03/11]. The views expressed in this publication are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.





Tsakos et al. Pilot and Feasibility Studies (2021) 7:138 https://doi.org/10.1186/s40814-021-00872-6

Pilot and Feasibility Studies

#### STUDY PROTOCOL

Open Access

### Improving the oral health of older people in care homes (TOPIC): a protocol for a feasibility study



Georgios Tsakos<sup>1</sup>, Paul R. Brocklehust<sup>2</sup>, Sinead Watson<sup>3\*</sup> O. Anna Verey<sup>1</sup>, Nia Goulden<sup>2</sup>, Alison Jenkins<sup>2</sup>, Zoe Hoare<sup>2</sup>, Kirstie Pye<sup>3</sup>, Rebecca R. Wassalf<sup>3</sup>, Andrea Sherriff<sup>2</sup>, Anja Hellmann<sup>1</sup>, Ciaran O'Neill<sup>2</sup>, Craig J. Smith<sup>6/2</sup> Joe Langley<sup>3</sup>, Renato Venturelll<sup>1</sup>, Peter Cairns<sup>13</sup>, Nat Lievesley<sup>3,19</sup>, Richard G. Watt<sup>1</sup>, Frank Kee<sup>3</sup> and Gerald McKenna<sup>3</sup>

#### hstract

Background: Evidence for interventions promoting oral health amongst care home residents is weak. The National Institute for Health and Care Excellence (NICC) guideline NG88 aims to maintain and improve the oral health of care home residents. A co-design process that worked with residents and care home staff to understand how the NG48 guideline could be best implemented in practice has been undertaken to refine a complex intervention. The aim o this study is to assess the feasibility of the intervention to inform a future larger scale definitive trial.

Methods: This is a protocol for a pagmatic cluster randomised controlled trial with a 12-month follow-up that will be undertaken in 12 cane homes across two sites (six in London, six in Northem Ireland). Cane homes randomised to the intervention arm (n = 6) will receive the complex intervention based on the NS48 guideline, whilst care homes randomised to the control arm (n = 6) will continue with routine practice. The Intervention will include a training package for care home staff to promote knowledge and skills in oral health promotion, the use of the Oral Health Assessment Tool on residents by trained care home staff, and a support worker assisted daily tooth-burshing regime with toothpaste containing 1500 ppm fluoride. An average of ten residents, aged dis years or over who have at least one natural tools, will be recruited and in each care home resulting in a recruited sample of 120 participants. Assessments will be undertaken at baseline, 6 months and 12 months, and will include a dental examination and questromaries or general health and call health administered by a research assistant. A panallel process evaluation involving semi-structured interviews will be undertaken to explore how the intervention could be embedded in standard practice. Rates of recruitment and retention, and intervention fieldlity will also be recorded. A cost-consequence model will determine the relevance of different outcome measures in the decision-making context.

Discussion: The study will provide valuable information for trialists, policymakers, clinicians and care home staff of the feasibility and associated costs of oral health promotion in UK care homes.

\*Correspondence: swatson@qubac.uk <sup>3</sup>Centre for Public Health, School of Medicine, Dentistry and Biomedica Sciences, Queen's University Belfast, Belfast, UK.



In permit our, having, adaption, distribution and reproduction in any reduction in any reduction as yet and a production and the reduction and reproduction in any reduction of the reduction of

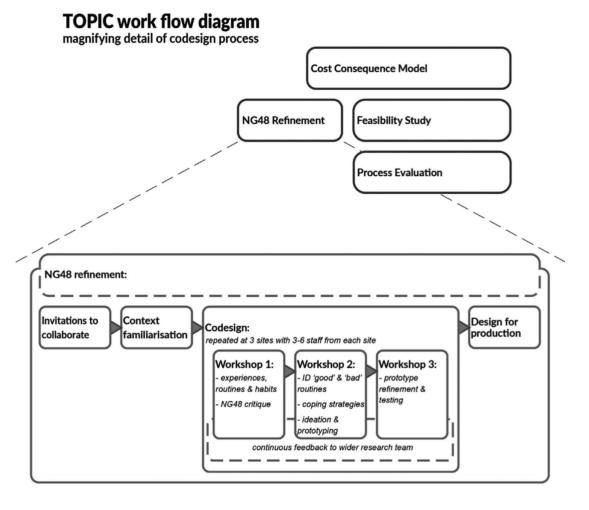


## **TOPIC Study: What we did?**



Tsakos et al. Pilot and Feasibility Studies (2021) 7:13 https://doi.org/10.1186/s40814-021-00872-6

Pilot and Feasibility Studies



#### STUDY PROTOCOL

**Open Access** 

Improving the oral health of older people in care homes (TOPIC): a protocol for a feasibility study



Georgios Tsakos<sup>1</sup>, Paul R. Brocklehurst<sup>2</sup>, Sinead Watson<sup>3\*</sup>, Anna Verey<sup>1</sup>, Nia Goulden<sup>2</sup>, Alison Jenkins<sup>2</sup>, Zoe Hoare<sup>2</sup>, Kirstie Pye<sup>2</sup>, Rebecca R. Wassall<sup>4</sup>, Andrea Sherriff<sup>5</sup>, Anja Heilmann<sup>1</sup>, Ciaran O'Neill<sup>3</sup>, Craig J. Smith<sup>6,7</sup>, Joe Langley<sup>8</sup>, Renato Venturelli<sup>1</sup>, Peter Cairns<sup>3,9</sup>, Nat Lievesley<sup>3,10</sup>, Richard G. Watt<sup>1</sup>, Frank Kee<sup>3</sup> and Gerald McKenna<sup>3</sup>

What does the **complex intervention** include?

Oral Health Assessment Tool

**Assisted Tooth Brushing Regime** 

Home staff training package

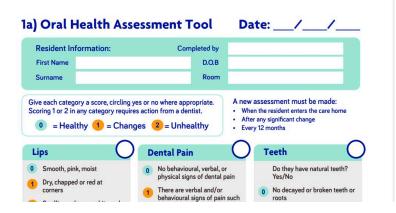


# **TOPIC Study: What we did?**

#### Co-designed materials

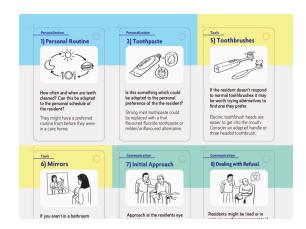
- Oral Health Assessment Tool
- Personal Oral Care Plan
- Weekly Oral Hygiene Record





First Name						
Surnama			D.O.B			
Surname			Room			
return to the sta challenging again	n in future retur	to this recor	d and make n	ote of any tips	and tricks	hat wor
	n in future returi ire significant ch	to this recor	d and make n	ote of any tips	and tricks	hat worl
challenging again for you. If there a	n in future return re significant ch outine	to this recor	d and make r resident refe	ote of any tips	and tricks t ssessment	that wor Tool (1a)

			Dutc	_//_
Resident Information	n: Co	ompleted by		
First Name		D.O.B		
Surname		Room		
Tick all that apply	TOP	TOP BOTTOI PARTIAL WHOLE		Specialist intervention
Own teeth?	Dentures?			required?
	on this oral care plan sho Oral Health Assessmer			
Preferred Oral Hyg	ene Products Tick	all that apply		
Preferred Oral Hyg		all that apply		
,,,	ype:	- adapte	d adapted	how?





# Recruitment and Feasibility

Results

- Care Homes invited: 37
- Care Homes agreed: 31 (84%)
- Care Homes randomized: 22
- Care Home without data collection: 1
- Care Homes participated: 21
- Care Homes withdrew: 2
- Care Homes remained in the study:
  19 / 22 (86%) @ 12-months

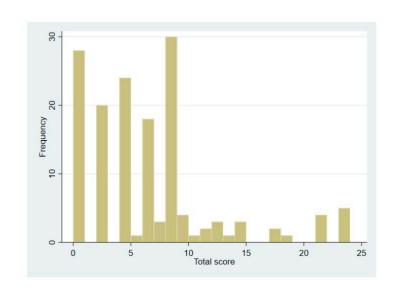
- Residents invited: 195
- Residents screened: 164
- Residents eligible: 136
- Residents recruited: 119 (88%)
- Intervention: 55 Residents (10 CH)
- Control: 64 Residents (11 CH)
- Residents remained in the study: 82 / 119 (69%) @ 12-months



## Data collection

- Fully completed oral health data @ baseline: 105 / 119
   residents (88%)
- Fully completed oral health data @ 12-months: 75 / 119
   residents (65%); 75 / 82 residents (91%)
- Weekly symptoms checklist (by care home staff): large volume of missing data
- More strict cognitive ability inclusion criterion would have reduced sample by a quarter (76.5% eligible)







### **Process Evaluation**

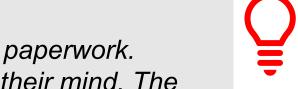
- Complexity of introducing an oral health intervention
- Idiosyncratic environment (organization and efficiency of processes) — "buy-in"
- Hierarchical "systems lens" may help
- Time poverty
- Competing needs
- Staff turnover
- Staff culture (values and beliefs)

#### **SYSTEM STRUCTURE:**



"There's a staffing issue, if you don't have enough staff, [it] becomes difficult for them to do it, but they try" (care home staff)

#### **FEEDBACK**





"It's just the paperwork. Because in their mind. The last thing they're thinking of is to fill up to do paperwork" (care home staff)



## **Process Evaluation**

#### STRUCTURAL ELEMENTS

"It's about getting to know your resident, what works, what doesn't work" (care home manager)



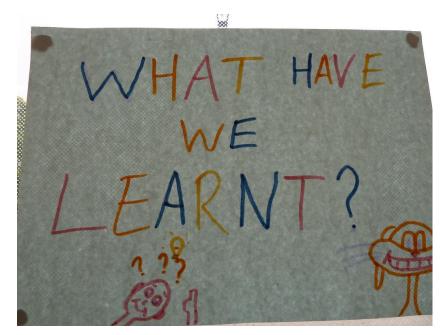
"He will decline to have his teeth brushed in the evening.... so I have to have these lovely conversations and promise him I'm gonna marry him tomorrow" (care home manager)

"I'm getting a bigger picture.....I'm getting to understand who actually brushes their own teeth. Who's having a challenge with it? Who needs much more intervention?" (care home manager)



# **TOPIC Study: What have we learnt?**

- Intervention is feasible BUT...
- Challenging research environment complexity
- Attrition is big issue
- Withdrawals of care homes timing / organisation
- Participants leaving care homes, moving into different care homes, unable to engage due to loss in cognitive ability
- Range of factors that influence implementation (idiosyncrancy, values and beliefs)







## Thank you for your attention

g.tsakos@ucl.ac.uk

G.McKenna@qub.ac.uk





# SENIOR trial: what we did?

Paul Brocklehurst



#### 20 care homes and 140 residents

#### Intervention

























Six months





















Control

20 care homes and 140 residents



# Could other members of the team do more?

McKenna et al. Trials (2022) 23:679 Trials uSing rolE-substitutioN In care homes to improve ORal health (SENIOR): a study protocol Gerald McKenna<sup>1</sup>, Georgios Tsakos<sup>2</sup>, Sinead Watson<sup>1\*</sup>

Alison Jenkins<sup>3</sup>, Patricia Masterson Algar<sup>4</sup> Rachel Evans<sup>3</sup>, Sarah R. Baker<sup>5</sup>, Ivor G. Chestnutt<sup>6</sup>, Craig J. Smith<sup>7,8</sup>, Ciaran O'Neill<sup>1</sup>, Zoe Hoare<sup>3</sup>, Lynne Williams<sup>4</sup>, Vicki Jones<sup>9</sup>, Michael Donaldson<sup>10</sup>, Anup Karki<sup>11</sup>, Caroline Lappin<sup>12</sup>, Kirstie Moons<sup>13</sup>, Fiona Sandom<sup>13</sup> Mary Wimbury<sup>14</sup>, Lorraine Morgan<sup>15</sup>, Karen Shepherd<sup>16</sup> and Paul Brocklehurst<sup>3</sup> evidence suggests that the use of Dental Care Professionals (dental therapists and dental nurses) as an alternative to dentists has the potential to improve preventive advice, the provision of care and access to services within care interventions within care homes is currently lacking. The aim of the study is to determine whether Dental Care Profes sionals could reduce plaque levels of dentate older adults (65 + years) residing in care homes. Methods: This protocol describes a two-arm cluster-randomised controlled trial that will be und homes across Wales. Northern Ireland and England. In the intervention arm, the dental therapists will visit the care within their Scope of Practice. Dental nurses will visit the care homes every month for the first 3 months and then The control arm will be 'treatment as usual'. Eligible care homes (n=40) will be randomised based on a 1:1 ratio (20 intervention and 20 control), with an average of seven residents recruited in each home resulting in an estimated sample of 280. Assessments will be undertaken at baseline, 6 months and 12 months and will include a dental examination and quality of life questionnaires. Care home staff will collect weekly information on the residents' oral health (e.g. episodes of pain and unscheduled care). The primary outcome will be a binary classification of the mean reduction in Silness-Löe Plaque Index at 6 months. A parallel process evaluation will be undertaken to explore the intervention's acceptability and how it could be embed ded in standard practice (described in a separate paper), whilst a cost-effectiveness analysis will examine the potential long-term costs and benefits of the intervention Discussion: This trial will provide evidence on how to successfully implement and sustain a Dental Care Profe **BMC** 

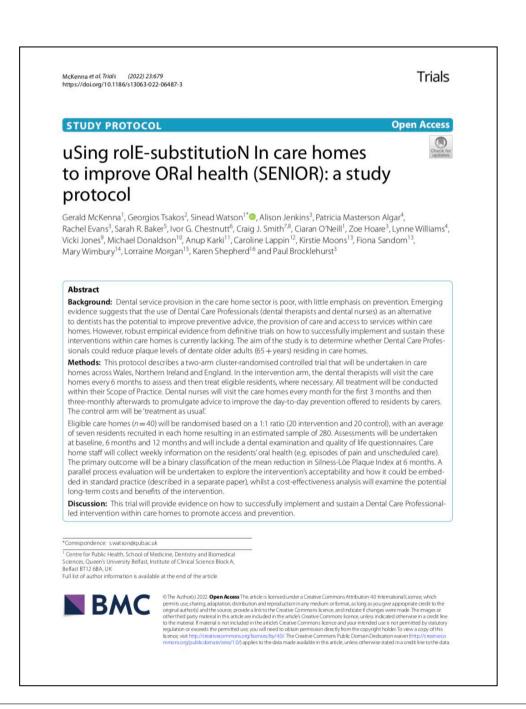
Care homes have been recruited across Wales, Northern Ireland, London and the North-West of England

In half of the homes (Therapist & Nurse):

- 1. Any treatment
- 2. Application of high-fluoride varnish
- 3. Provision of high-fluoride toothpaste
- 4. Oral hygiene and healthy eating advice
- 5. Advice and guidance for care home staff



# Could other members of the team do more?



Oral cleanliness is being measured before the study starts and at six-months

We are also recording:

- 1. Bleeding on probing (gum health)
- 2. Pain
- 3. New tooth decay lesions
- 4. Quality of life
- 5. Episodes of unscheduled care



# SENIOR trial: what we found (so far)?

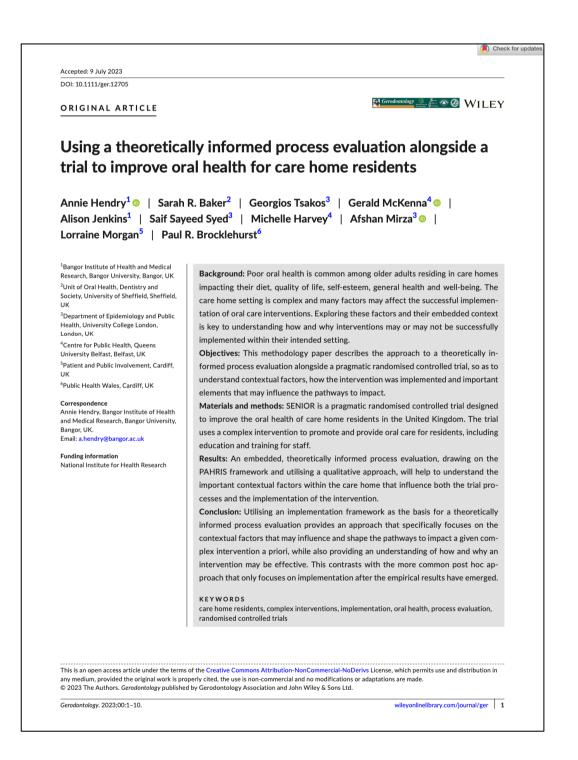
Paul Brocklehurst





- 1. 42 care homes consented and recruited
- 2. 250 residents recruited and consented
- 3. 182 residents had baseline assessment
- 4. 42 residents have died or withdrawn
- 5. 82 residents in active group have had their first intervention (28 waiting)
- 6. 36 residents have had their 6m outcome assessment (further 51 later this month)





**Receptiveness to change:** DTs and DNs were seen as an excellent way of providing oral care:

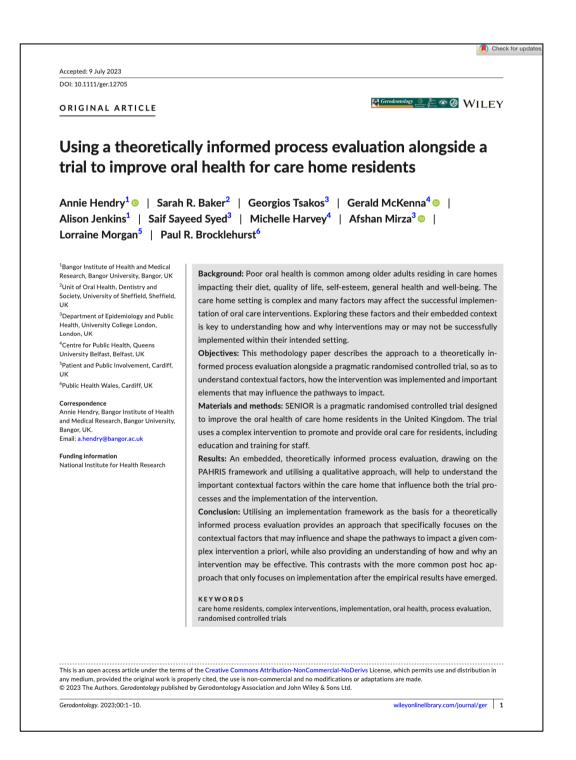
"A dentist might be your most expensive resource in there, so you probably want to use them for the things that only a dentist can do" (CQC)

**Resource allocation:** Some families are unable to fund dental care:

"And family members don't want to pay for anything that's extra. So, most of the times, we struggle. If we know that the residents are suffering as a result, we fund it and then we recharge those invoices out.

Oftentimes, the home gets laboured with these debts" (Care Home Manager)



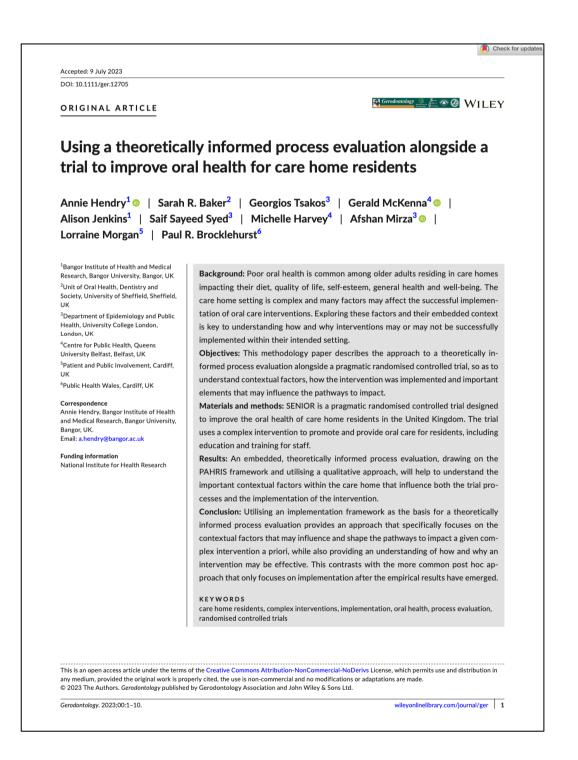


**Prevailing beliefs of stakeholders:** High sugar food and drinks are often part of care home culture:

"They have a lot of sweet things, you rarely see patients with water, it tends to be juice, and that's what they're sipping on and relatives visit, and they bring sugary things" (Dental Therapist)

"So I guess a dietitian would for example want patients to have...high sugar or like build up drinks, which are full of sugar, several times throughout the day" (Dental Nurse)





**Staff turnover and training gaps:** High levels of staff turnover and the use of agency staff were a challenge to oral health provision:

"We've done a lot of sessions where we'll train the staff of the care home, but then a lot of them will be bank staff [so] there's not much consistency within each home" (Dental Nurse)

**Opportunity cost and limited time:** The opportunity cost of providing oral care c.f. other care was another issue:

"But when you have someone that has, diabetes care, foot care, incontinent, then you've got a whole load of care needs. The oral one is the one that doesn't get taken care of" (Consultant Special Care Dentistry)



Gweithio gyda'n gilydd i greu Cymru iachach

Working together for a healthier Wales







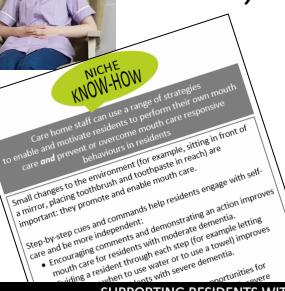


# COMMIT STUDY Caring Optimally: promoting effective Mouth MInuTes in care homes (COMMIT Study)

Dr Karen Vinall-Collier & Dr Julia Csikar Lecturers in Dental Public Health University of Leeds

@LeedsNiche
@COMMITStudy

#### "how can I help residents with their mouth care, particularly when they resist this care?"



NIHR | National Institute for Health Research

**NIHR Evaluation, Trials and Studies** 

Coordinating Centre (NETSCC) University of Southampton Alpha House, Enterprise Road Southampton, SO16 7NS

4 March 2021

Professor Karen Spilsbury Professor School of Healthcare University of Leeds Faculty of Medicine and Health Baines Wing West Yorkshire LS2 9JT

Dear Professor Spilsbury

NIHR HS&DR Reference Number: NIHR131506 Caring Optimally: promoting effective Mouth MInuTes in care homes (COMMIT Study)

I am pleased to inform you that the HS&DR Funding Committee has recommended your application submitted for consideration to the 19/154 HSDR Oral and Dental Health call for funding and the Department of Health and Social Care, in their capacity as the National Institute for Health Research (NIHR), has confirmed their intention to award funding upon acceptance of the terms and conditions set out in the Standard Research Contract and pending agreement to the suggested amendments recommended by the Funding Committee, as detailed in the enclosures.

The Standard Research Contract, between Contractors and the Secretary of State for Health SUPPORTING RESIDENTS WITH MOUTH CARE

#### o-apply-for-project-funding/sign-a

#### What can you do...

Check for physical, verbal and behavioural signs of oral pain

Use different solutions for dentures made of plastic or with metal parts

Dentures should be removed, cleaned and soaked nightly, and rinsed after meals

high fluoride toothpaste to help reduce gum disease

Look after lips: clean with water moistened gauze, apply balm

Consider a softer toothbrush

Inspect gums in good light and

owing the decision to fund to sible. Therefore, we expect essary contractual agreements nin 8 months or by a date mutually

mmitting resource to research contractual terms unless the refore, encourages organisations nity as possible in order to

impact on the majority of NIHRver NIHR research also provide national and global challenge of

ed at the University of Southampton, s for the NIHR

#### Received: 11 March 2021 Revised: 5 May 2021 Accepted: 20 May 2021

DOI: 10.1111/opn.12394

ORIGINAL ARTICLE



#### Maintaining and improving mouth care for care home residents: A participatory research project

Alvs Wyn Griffiths PhD. Senior Research Fellow 1,2,3 0 Reena Devi PhD. Senior Research Fellow<sup>3,4</sup> | Biddy Cheetham MSc, General Manager<sup>3,5</sup> | Lisa Heaton Deputy General Manager<sup>3,5</sup> | Angela Randle MSc, Head of Kindness, Care and Quality<sup>3,6</sup> | Alison Ellwood BSc, PhD Candidate | Gail V. A. Douglas PhD, Chair in Dental Public Health | Julia Csikar PhD. Lecturer in Dental Public Health<sup>8</sup> | Karen Vinall-Collier PhD, Lecturer in Dental Public Health<sup>8</sup> | Judy Wright MSc, Senior Information Specialist<sup>9</sup> | Karen Spilsbury PhD, Chair in Nursing<sup>3,4</sup> @

Centre for Dementia Research, Leeds Beckett University, Leeds, UK <sup>2</sup>Institute of Population Health, Universit

of Liverpool, Liverpool, UK <sup>3</sup>NICHE-Leeds, University of Leeds and Leeds Care Association, Leeds, UK <sup>4</sup>School of Healthcare, University of

Westward Healthcare, Leeds, UK <sup>6</sup>Springfield Healthcare, Leeds, UK <sup>7</sup>Centre for Applied Dementia Studies University of Bradford, Bradford, UK

<sup>8</sup>School of Dentistry, University of Leeds Leeds, UK <sup>9</sup>Leeds Institute of Health Sciences, University of Leeds, Leeds, UK

#### Karen Spilsbury, School of Healthcare ersity of Leeds, Leeds LS2 9JT, UK

Email: k.spilsbury@leeds.ac.uk

Funding information s ongoing work is funded by the Leeds Care Association and the University o Leeds. KS is part funded by the NIHR

Background: Many people residing in nursing or residential care homes (also called long-term care facilities) live with physical or cognitive difficulties. Staff working in these environments often help residents (particularly those with more advanced dementia) with their personal care needs, including maintaining mouth care and health. Poor oral health is associated with many difficulties, including increased risk of respiratory problems, pain and discomfort. Yet, concerns have been raised that staff may not have the knowledge and skills to effectively support residents with oral care and health. There is therefore an important gap between what is known about the importance of maintaining oral health (scientific evidence) and daily practice in long-term care environments. Objectives: To work with care home staff: (1) to create a learning culture to address how to promote mouth care for residents, particularly when a resident resists support with this aspect of care; and (2) to effect mouth care practice changes (if required) using participatory and inclusive research cycles.

Methods and results: We conducted a participatory research project to address this important area of care. Four participatory research 'cycles' were conducted, Cycle one explored existing literature to develop accessible guidance on strategies that staff could use to support residents to maintain and improve oral care, particularly when a resident may resist such care. Cycle two built on this review to determine knowledge levels within the care team. This highlighted deficiencies in staff knowledge, skills and competence for providing mouth care and their need for training to address this. Cycle three identified evidence-based strategies to develop staff understanding and knowledge, Cycle four brought together experts from nursing, dentistry, behaviour change, systematic reviews and care homes research to develop a grant application to progress this work further. Conclusion: This paper provides an example of the processes undertaken in a participatory research project, bringing together science and practice to improve an essential area of care.

© 2021 John Wiley & Sons Ltd 1 of 10

#### mouthcare assessment and care plan when they move in Some conditions (like

Did you know ....?

Some medicines reduce saliva,

leaving people with a dry mouth

All residents should have a

Parkinson's or dementia) can make it harder for people to clean their teeth

As people age, they do not naturally lose their teeth

Mouth health is related to general body health and quality of life

Oral discomfort is associated with poor nutritional status

Residents still need regular assessment by a dentist



Are you promoting mouth care?



#### Brush teeth twice a day with a

Continue using powered toothbrushes if the resident uses one

report any changes

## Meet the Team



AIM: Develop theory- and research-informed guidance for care homes to promote staff behaviours to improve oral health and care (committing to effective 'mouth minutes') for care home residents



Lots of studies of oral care in care homes already so we did not want to do the same thing again



'Take stock' of the evidence



'Make sense' of this evidence and develop solutions



Focus on what staff need to COMMIT to effective 'mouth minutes' of the residents they care for



Co-develop guiding principles & logic model

Capability: "know how to support residents with mouth care"

Know the mouth care needs of the resident being supported

Know how to give mouth care and know when to ask for more support and training

Opportunity: "have what they need to support residents with mouth care"

Check what the right products are and that they are fit for purpose

Make it part of everyday conversations and check it's been done daily

Make sure concerns about the mouth of a resident are raised

Motivation: "want to support residents with mouth care"

Understand the importance of mouth health in relation to a person's physical health and general wellbeing

Value what is important for each person living in the care home and support personcentred mouth care

Accept individual responsibility to ensure daily mouth care for people living in care homes in done

## Committing to mouth minutes

- What do we know
  - There is a lot of research, but there is no magic bullet
  - O Different stakeholders want different things: resources, training
- What do we not know
  - How to embed mouth minutes into the everyday
- Where do we need to go next
  - Committing to mouth minutes is complex as it depends on Capability,
     Opportunity and Motivation
  - Some things are within our gift to change, some are not but this can be challenged





## Thank you

Contact email: K.A.Vinall@leeds.ac.uk

J.Csikar@leeds.ac.uk

(formally Twitter:@LeedsNiche @leedsdentistry







#### Funder

The National Institute for Health Research Health and Social Care Delivery Research, NIHR131506)

#### Disclaimer

The views expressed in this presentation are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.