



Improving Oral Care in Nursing Homes: Results from Studies on Oral Care Aides in Skilled Nursing Facilities

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Learning Objectives

1. Understand that a program that teaches nursing assistants to provide oral care, including to residents who resist care, can improve oral hygiene and reduce pneumonia
2. Understand the oral care aide model and how this role can be utilized in nursing homes
3. Understand the challenges to using the oral care aide model in nursing homes



The New York Times

August 4, 2013

In Nursing Homes, an Epidemic of Poor Dental Hygiene
By Catherine Saint Louis

Katherine Ford visited her father, Dean Piercy, a World War II veteran with dementia, at a nursing home in Roanoke, Va., for months before she noticed the dust on his electronic toothbrush ...



... after he complained of a severe, unrelenting headache, she badgered the staff to make an appointment with the dentist. The dentist found that a tooth had broken in two ... and part had lodged in the roof of her father's mouth.



The New York Times

August 4, 2013

The Status of Mouth Care In Nursing Homes

Kansas: 540 residents in 20 nursing homes

- 30% had "substantial oral debris" on two-thirds of their teeth
- more than one-third had untreated decay

Wisconsin: 1,100 residents in 24 nursing homes

- 31% had teeth broken to gums
- 35% had substantial oral debris

New York: residents in 5 nursing homes

- only 16% received any care at all
- among those who did, the average time spent brushing teeth was ...
16 seconds



The New York Times

August 4, 2013

The Status of Mouth Care In Nursing Homes

- Today's residents require more care because more have teeth
- Cavities, gum disease, and cracked teeth result because mouths aren't kept clean
- Aides are swamped with other tasks; tooth brushing falls to the bottom
- Few staff are trained to care for residents who resist care

"You can measure quality in a nursing home by looking in people's mouths, because it's one of the last things to be taken care of."

Dr. Judith Jones, Chair, Department of General Dentistry, Boston University



The New York Times

August 4, 2013

Some of the 207 comments

- Dentist: *"I'm baffled that facilities have designated rooms for licensed hair care but no room for health care. In the picture with the article, the woman is getting treated in a conference room! No privacy, infection control, dignity or HIPAA compliance. Note the other residents watching the procedures being done."*



- Daughter: *"I bought and they lost 3 different electric toothbrushes. The final straw was when I discovered they had been brushing her teeth with her deceased roommate's toothbrush."*



Typical Nursing Home Resident Plaque and Gingivitis



Why Isn't Care Better?

- Lack of knowledge and skill
 - Residents who resist care
 - Products and techniques
- Lack of time
- Fear of injury; distaste for task
- No oversight or accountability

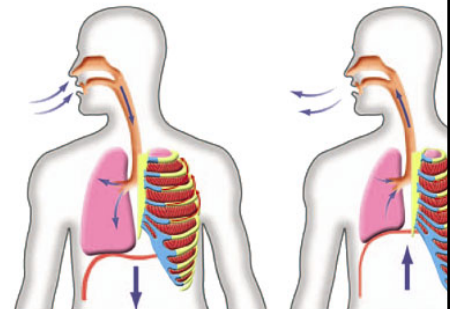
Not Recognized as a Health Care Priority





Mouth Care and Pneumonia

- Poor oral health → bacterial pathogens
- Bacteria get inhaled → aspiration pneumonia
- Two-thirds of nursing home residents have bacterial pathogens in their dental plaque



Mouth Care to Prevent Pneumonia

Pilot Studies

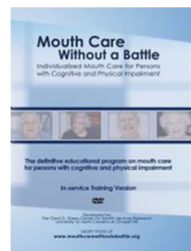
- Weekly dental hygienist → 42% reduction in pneumonia mortality
- Systematic mouth care after meals → 56% reduction in pneumonia

Up to 50% of pneumonias might
be avoided by providing mouth care



Background

Overview of the University of North Carolina *Mouth Care Without a Battle* Program



1. Remove Plaque

Plaque removal reduces the risk of developing gingivitis and promotes gum health



Mechanical action -- *jiggle, sweep* -- is most important to remove plaque; clean between teeth



2. Treat Gingivitis

Inflammation of the gums largely due
to bacteria-filled plaques on teeth



Brushing with antimicrobial agents
can restore gum health



3. Prevent Tooth Decay

Tooth decay is associated with decreased oral
intake and reduced quality of life



Daily fluoride use can reduce tooth decay



4. Clean Dentures and Gums

Scratched dentures harbor bacteria



Remove dentures; soft brushes and water
resist scratches



5. Meet Behavioral Challenges

- Refusing to open mouth
- Biting toothbrush
- Refusing to let denture be removed/inserted
- Hitting, yelling, grabbing





Behavioral Symptom	Example Person-Centered Technique
Nonspecific	<ul style="list-style-type: none"> Focus on the person rather than the task
Won't open mouth	<ul style="list-style-type: none"> Sing with the person
Refuses mouth care	<ul style="list-style-type: none"> Phase in mouth care (e.g., do front of teeth one day, back the next, interdental brush later)
Resists care by grabbing	<ul style="list-style-type: none"> Hand the person the toothbrush and invite to brush
Bites toothbrush	<ul style="list-style-type: none"> Insert a smaller brush to work around the toothbrush
Hits or fights	<ul style="list-style-type: none"> Check for broken teeth, sore spots, or infection
Has trouble swallowing or cannot spit	<ul style="list-style-type: none"> Use a small amount of antimicrobial rinse



6. Assess and Monitor Care





Oral Care Aide



Oral Care Aides: Critical for System-Level Change

Arguments in Favor

- Mouth care of people who are impaired is complex and specialized
- Results are better
- Nothing else has worked
- People receiving care and their families notice the difference
- Serves as a career ladder for motivated staff
- Mouth care aide can train and support other staff

Arguments Against

- Counter to the universal worker philosophy
- Supervisory nurses will pull them to fill staff shortages
- Cost



Efficacy Evaluation

- Three nursing homes
- Two CNAs in each trained as oral care aides
- Total of 97 residents

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Changing the Culture of Mouth Care: *Mouth Care Without a Battle*

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DENTAL AND ORAL HEALTH

Effect of a Person-Centered Mouth Care Intervention on Care Processes and Outcomes in Three Nursing Homes

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Results: Tooth Surface Cleaning

	Before training	After training
Upper teeth		
Outer surface	96%	97%
Inner surface	44%	95%
Lower teeth		
Outer surface	97%	98%
Inner surface	63%	93%





Results: Oral Hygiene

Indicator	Significance
Plaque Index	
8 weeks	$p < .001$
6 months	$p < .001$
Gingival Index	
8 weeks	$p < .001$
6 months	$p = .008$



Results: Interdental Cleaning

	Before training	After training
Upper teeth	0%	88%
Lower teeth	0%	91%

Before Mouth Care Program



After Mouth Care Program



Before Mouth Care Program



After Mouth Care Program





Results: Staff Attitudes

	Before Training	After Training
I have the necessary time to do the job	2.3	3.7
I have sufficient knowledge to do the job	2.7	3.8
I get residents to cooperate with mouth care	2.7	3.8

1 = Strongly disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree



System-Level Cluster Randomized Quality Improvement Trial

- 14 nursing homes involved for two years
 - In counties with proportionately high rehospitalization rates for pneumonia and long-term care residents
 - Matched by size and baseline pneumonia rate
 - Randomized to control or intervention
- Provided standardized training and ongoing support to oral care aides and all aides
- Monitored fidelity
- Assessed oral hygiene, pneumonia, hospitalization, costs



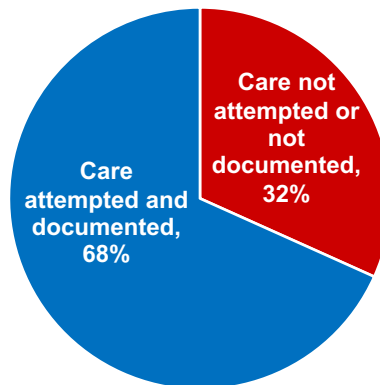
Percent of Staff Who Attended Three Training Sessions

Staff Type	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Overall
CNAs	35%	48%	61%	39%	57%	42%	37%	46%
Nurses	35%	6%	72%	25%	62%	50%	31%	40%

Have since developed one integrated training session

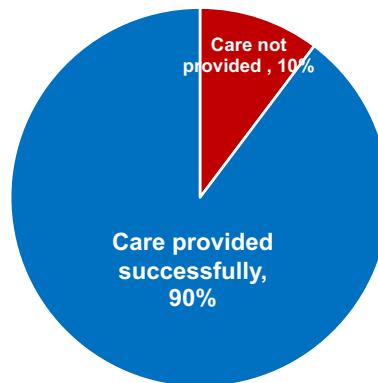


Daily Mouth Care During First Six Months





Success Rate When Care Was Attempted



24 Month Change in Oral Hygiene (N=219)

	Control (n=98)			Intervention (N=121)			p
	Baseline	24 Month	Δ	Baseline	24 Month	Δ	
Plaque (0-3)	1.60 (.34)	1.67 (.33)	+.07	1.65 (.31)	1.26 (.36)	-.39	.032
Gingiva (0-4)	1.42 (.38)	1.73 (.52)	+.31	1.54 (.33)	1.19 (.35)	-.35	.015
Denture plaque (0-4)	2.69 (1.00)	2.29 (1.23)	-.39	2.02 (.54)	1.34 (.41)	-.68	.038

Measures: Plaque Index for Long-Term Care, Gingival Index for Long-Term Care, Denture Plaque Index; higher scores indicate worse oral hygiene



Change in Pneumonia (N = 2,152)

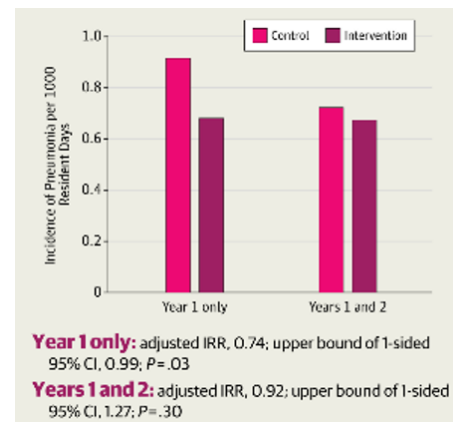
JAMA
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Original Investigation | Geriatrics

Effectiveness of a Mouth Care Program Provided by Nursing Home Staff vs Standard Care on Reducing Pneumonia Incidence A Cluster Randomized Trial

Sheryl Zimmerman, PhD; Philip D. Sloane, MD, MPH; Kimberly Ward, MPH; Christopher J. Wretman, PhD; Sally C. Stearns, PhD; Patricia Poole, RN, RDH, BSDH, MS; John S. Preisser, PhD

- 26%-31% reduction at one year ($p=.03$)
- Non-significant reduction at two years ($p=.30$)



The Challenge of Sustainability



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Fidelity and sustainability of *Mouth Care Without a Battle* and lessons for other innovations in care

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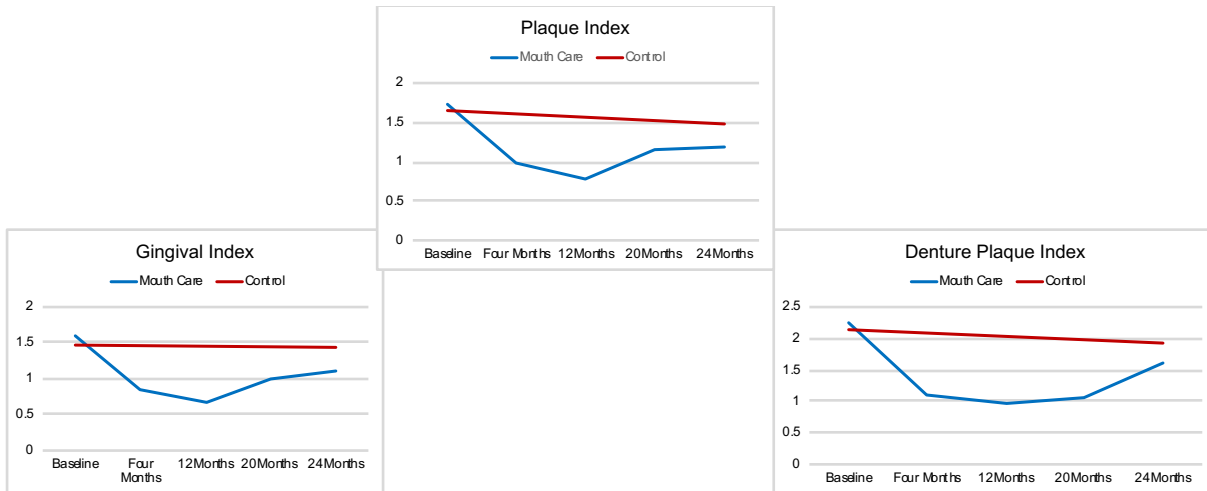
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24 Month Change in Oral Hygiene



Results: Cost Over One Year

Median cost per pneumonia avoided
\$186 - \$1,581

Mouth care program has a 58% - 87% chance of being cost-saving due to reduced hospitalization for pneumonia





Mouth Care Without a Battle: Summary of Oral Care Aide Model

- Improves health outcomes
- Have more time for challenging residents
- Ability to train other staff
- Requires buy-in or mandate for implementation
 - During our two-year trial, oral care aides were frequently pulled onto the floor to fill staff shortages



Mouth Care Without a Battle

MOUTH CARE WITHOUT A BATTLE

Mouth Care in the World
A search tool may help identify pneumonia risk and be used for care planning.



MOUTH CARE WITHOUT A BATTLE

- State-of-the-art, evidence-based training
- CE credits provided for nursing assistants
- Available in three versions
- Train-the-Trainer, In-service, and DVD
- In-person training available in English (11 DVDs) and Spanish (11 DVDs)
- Online in-person/self-study

[Purchase a Training DVD](#)

[Enroll in Online Training](#)

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ABOUT THE TRAINING

Mouth Care Without a Battle® is an evidence-based approach to person-centered daily mouth care for persons with cognitive and physical impairment. Developed by the research group that brought you *Bathing without a Battle*®, Mouth Care Without a Battle combines best practices in oral hygiene with proven techniques to overcome resistance to care among persons with dementia and related conditions. It improves oral hygiene and may reduce pneumonia.

Mouth Care Without a Battle® is available in two formats: DVD and online. Three DVD options include an In-service/Self-study 1-hour version for nursing assistants and nurses, available in English and Spanish, and a Train-the-Trainer version that includes more in-depth material, especially related to nursing and program implementation.

The online In-service/Self-study version includes the information from the 1-hour English In-service/Self-study DVD, along with optional additional topics including assessment, care planning, and supervision.

[About Mouth Care](#)

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www.mouthcarewithoutabattle.org