# Dental and Oral Health Care in Nursing Homes: Results from Two Multi-Stakeholder Surveys

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## ABSTRACT

**STUDY OBJECTIVE:** To characterize oral health practices using data from statewide, multi-stakeholder surveys.

**STUDY DESIGN AND METHODS:** We analyzed data from two Rhode Island surveys. Together, the surveys targeted all nursing homes, residents, and resident representatives in Rhode Island, and asked about staff training on mouth care, frequency of dental provider visits, enrollment in nursing home dental programs, and barriers to oral health.

**PRIMARY RESULTS:** Responding nursing home administrators reported high levels of commitment to oral health. Among residents enrolled in a nursing home dental care program, 76.1% had a preventive visit in the prior six months, compared to 31.0% of residents not enrolled. The majority of facilities (71.8%) reported that staff received training on routine mouth care at the time of hire.

**CONCLUSIONS:** Our findings highlight opportunities to better support nursing homes in providing residents with high-quality oral health, including acquiring staff skills to manage care-resistant behaviors, and routinely assessing residents' ability to provide their own mouth care.

**KEYWORDS:** oral health, nursing homes, dental care

## INTRODUCTION

Oral health is linked to systemic health outcomes and to the quality of life for people of all ages.[1,2] Poor dentition often causes pain[3,4] and affects cardiovascular health, immune function, and medication burden.[4–9] Additionally, individuals with tooth loss, tooth mobility associated with periodontal disease, and dental caries may have diminished ability to chew, which subsequently influences patterns of food consumption and diet quality and may lead to both weight loss and obesity.[4,10,11] Older populations are at particular risk for these adverse outcomes because they may be more likely to have untreated oral and dental pathology, less likely to access consistent oral health care and have a relatively high burden of co-morbidities;[5,10,12] residing in a nursing home magnifies some of these challenges.[4,12]

Recognizing the importance of oral health care in nursing homes, the Centers for Medicare & Medicaid Services established minimum standards[13] for US nursing homes, stipulating that staff periodically assess residents' oral health status and assist residents in obtaining both routine and emergency dental care, including making appointments and arranging for transportation.[14] Under these standards, residents are also entitled to basic dental supplies, such as toothbrushes, and denture cleaner. Some states have also disseminated best practices for oral health in their nursing homes, including implementing personalized oral health plans for residents, and actively monitoring oral health program compliance.[15]

Despite regulatory requirements and published best practices, many nursing home residents do not receive adequate oral health care[5,16] due to a range of barriers.[17–22] Insufficient training in working with people with dementia, residents' responsive behavior (such as grabbing onto staff, agitation, resisting care), high workload, and staff burnout are some barriers as perceived by care aides, to providing better oral health care to nursing home residents.[3,23] Previous studies have additionally reported financial challenges and lower priority of health care as barriers to improving oral healthcare in nursing homes.[23,24] In order to improve oral health in this vulnerable population, we need a better understanding of how nursing homes currently provide dental and mouth care to their residents. The few studies that exist were conducted outside the U.S., are older, describe only a limited number of nursing homes, or do not incorporate resident and family perspectives.[25–29] This study leverages data collected in two statewide, multi-stakeholder quantitative surveys to update and characterize current oral health practices, including routine mouth care and provision of dental care, in a statewide sample of nursing homes, residents, and resident representatives. We aim to 1) identify opportunities to support nursing homes in their delivery of oral health care, 2) inform oral health policy development, and 3) provide a baseline assessment of nursing home dental delivery system that can be used to measure the impact of changes in regulation and clinical practice.

## METHODS

We obtained the data from two statewide surveys in Rhode Island. The first survey was the 2018 Nursing Home Oral Health Survey administered by the Rhode Island Department

of Health (RIDOH) to inform statewide oral health initiatives in nursing homes. This instrument was created by RIDOH in conjunction with Healthcentric Advisors and the Rhode Island Long Term Care Coordinating Council's Oral Health Subcommittee and administered electronically to all nursing homes (N=84) in Rhode Island, using an online survey platform (SurveyMonkey, Inc). Questions related to routine mouth care and episodic dental care challenges were adapted from Smith et al.[30] Nursing home administrators received a letter via U.S. mail from RIDOH with an URL link to the survey, as well as an email notification with the link and up to three electronic reminders. The survey period was from January 26, 2018, to February 9, 2018. Administrators from 46 nursing homes participated in the 2018 Nursing Home Oral Health Survey (response rate: 54.8%).

The second survey was the 2017 Rhode Island Nursing Home Satisfaction Survey, which is administered annually by RIDOH as part of the state's legislatively mandated Healthcare Quality Reporting Program. The 2017 survey period ran from October 30 through November 27, and the survey was administered to all eligible 3,320 long-stay nursing home residents (101 days or more in the nursing home) and to all eligible 5,203 long-stay resident representatives. A resident representative was defined as an individual chosen by the resident or authorized by law to act on their behalf.[31] To be eligible for this mandatory survey, residents were required to be cognitively intact (cognitive impairment was determined by individual facilities); resident representatives were eligible irrespective of the resident's cognitive status. Paper copies of the surveys were mailed to each facility. Facilities then distributed surveys to eligible residents and their representatives, and completed surveys were returned via U.S. mail. The survey received 2,417 resident responses (response rate: 72.8%) and 1,524 resident representative responses (response rate: 29.3%) to the 2017 Rhode Island Nursing Home Satisfaction Survey. Of the respondents, 94.3% of residents (n=2,280) and 88.5% of resident representatives (n=1,348) completed the one question related to oral health care: "How often do staff assist you with brushing your teeth or dentures and cleaning your mouth?" Answer choices included "Never," "Sometimes," "Usually," "Always," or "I do not need this type of assistance." The question was modified for resident representatives to ask how often nursing home staff assisted the resident. No compensation was provided for completing either survey. For both surveys, all measures were self-reported.

We obtained data on resident and facility characteristics from the Nursing Home Oral Health Survey. We included residents' type of dentition (natural teeth only, natural teeth and dentures, or dentures only) and the following facility characteristics: number of beds designated as skilled (most likely short-term rehabilitation residents) and non-skilled (typically long-term residents), certified nursing assistant (CNA) staffing levels (number who were full-time versus part-time or temporary), frequency of staff training on routine mouth care (at hire and/or annually), frequency of visits to facilities of different types of dental care providers (dentists, dental hygienists, dental hygiene students, prosthodontists, and oral surgeons), regular availability of mouth care supplies (whether the items are kept in stock or can be delivered within 24 hours), insurance types accepted for dental care (Medicare [including fee-for-service and Advantage], Medicaid, private insurance, out-of-pocket, and other), and the number of residents enrolled in the nursing home's dental care program. "Dental care program" was defined in the survey as the dental care services provided to residents by dental professionals or agencies with a formal or contractual arrangement with the nursing home. We also included the number of residents who had a preventive visit in the prior six months. "Preventive visit" was defined as a routine dental or denture assessment with a dentist or dental hygienist. Finally, we asked nursing home administrators to assess the significance of various potential barriers to oral health care for residents at their facility. Sample potential barriers queried in survey and found in the literature included transportation issues, availability of dental specialists, time constraints on facility staff, resident resistance to dental care, and resident financial concerns, among others. Administrators were asked to rate each potential barrier as "Very significant," "Significant," "Somewhat significant," "Not significant," or "Not applicable."

Descriptive statistics and bivariate analyses were computed using SAS 9.3 (SAS Institute, Inc.). We defined "routine mouth care" as those services provided to residents by nursing home staff (i.e., not a dental professional), such as brushing teeth or cleaning dentures. "Episodic dental care" refers to services provided by a dental professional, which may be scheduled preventive care or unplanned care for an acute dental issue. We use "oral health" as an overarching term that includes both routine mouth care and episodic dental care.

## RESULTS

Rhode Island nursing home administrators reported a mean of 19.2 (SD=18.8; range: 0-106) skilled beds and 83.1 (SD=42.8; range: 10-180) non-skilled beds. On average, facilities employed more full-time CNAs than part-time or temporary CNAs (mean of 33.4 versus 10.2, respectively). Facilities reported that staff received training on routine mouth care at the time of hire in most facilities (71.8%). More than three quarters of nursing homes indicated that Medicaid was accepted by their dental care providers (78.3%); this was the most frequently accepted insurance type. Among the residents in participating nursing homes, about half (49.2%) had natural teeth only and 6.3% had dentures only. The remainder had a combination of natural teeth and dentures (**Table 1**).

**Table 1.** Characteristics of nursing homes responding to the 2018 Nursing Home Oral Health Survey (N=46)

| | |
|---|---|
| **FACILITY CHARACTERISTICS** | |
| Skilled bed, mean (SD) | 19.2 (18.8) |
| Non-skilled beds, mean (SD) | 83.1 (42.8) |
| Staffing, mean (SD) | |
| Full-time CNAs | 33.4 (21.0) |
| Part-time/per-diem CNAs | 10.2 (12.5) |
| Frequency of staff training on mouth care, n (%) | |
| At hire | 33 (71.8) |
| Annually | 25 (54.3) |
| Insurance types accepted for dental care, n (%) | |
| Private | 26 (56.5) |
| Medicaid | 36 (78.3) |
| Medicare | 18 (39.1) |
| Out-of-pocket | 33 (71.7) |
| Other | 16 (34.9) |
| **RESIDENT CHARACTERISTICS** | |
| Type of dentition*, n (%) | |
| Natural teeth only | 351 (49.2) |
| Natural teeth and dentures | 317 (44.5) |
| Dentures only | 45 (6.3) |

SD: standard deviation; CNA: certified nursing assistant
*The denominator for this section is the total number of residents (N=713) at the facilities that responded to this specific question

**Figure 1.** The frequency with which different types of dental providers are available at nursing homes for non-emergent care, from the 2018 Nursing Home Oral Health Survey (N=24)

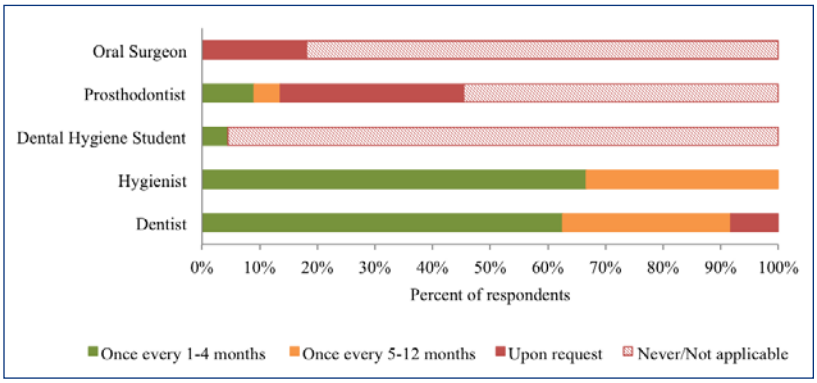



**Figure 2.** Total number of nursing home residents (dashed black bars) with a preventive dental visit in the past six months (blue bars), stratified by whether they are enrolled or not in their nursing home's dental care program

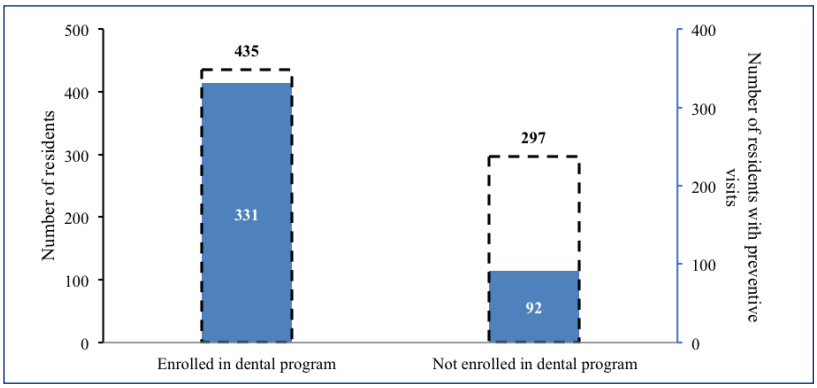
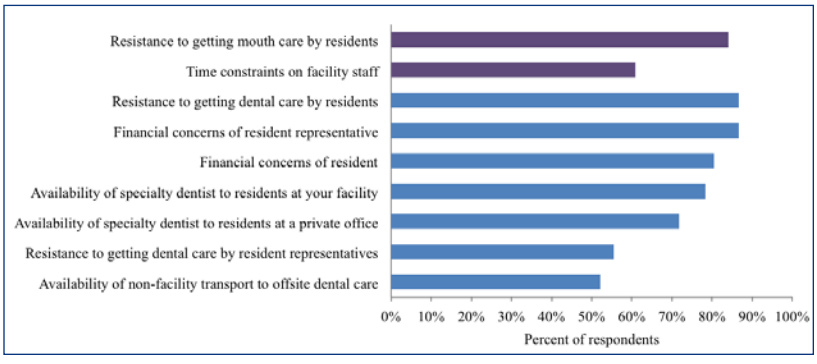



**Figure 3.** Barriers to residents receiving routine mouth care (purple bars) and episodic dental care (blue bars), as reported by nursing homes in the 2018 Nursing Home Oral Health Survey (N=46) (Nursing homes could select more than one barrier)




Among the nursing homes (n=24) whose administrators responded to a question about the availability of different dental provider types, more than 90% reported that a dentist visited the facility at least once annually, and 100% reported at least an annual visit from a dental hygienist. Fewer facilities reported regular visits from dental hygiene students, prosthodontists, and oral surgeons (**Figure 1**).

Responding nursing home administrators reported that the following mouth care supplies were kept in stock or available within 24 hours: toothbrushes (95.7% of facilities), toothpaste (87.0%), denture tabs (95.7%), and mouthwash (97.8%). Two facility administrators reported having a space dedicated to dental care. All but one reported that their facility had a dental contract with an outside entity. Nursing home administrators reported that, overall, 57.8% of their residents had a preventive visit in the six months prior to the survey. When we compared the 435 residents enrolled in a nursing home dental care program with the 297 residents not enrolled, we found that among those enrolled, 76.1% had a preventive visit in the prior six months, compared to 31.0% of residents among those not enrolled in a nursing home dental care program (**Figure 2**).

Responding administrators reported many oral health barriers for their residents. The barriers most commonly cited for both routine mouth care and episodic dental care were residents' resistance to getting care (84.1% and 86.7% of nursing homes, respectively). Respondents also reported time constraints on facility staff as a barrier to routine

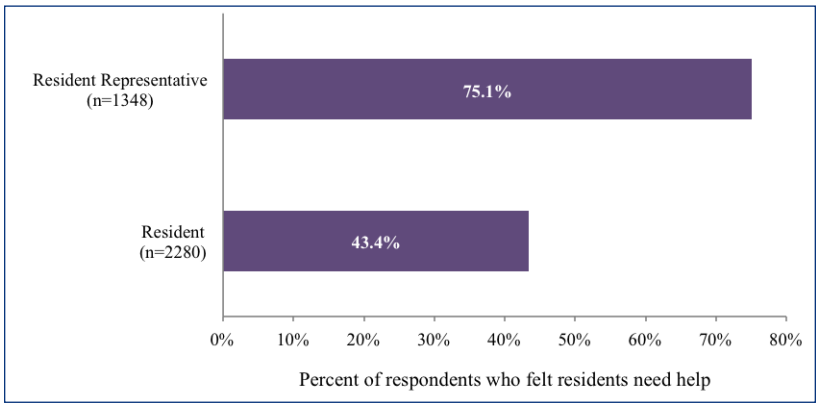
mouth care (60.9% of nursing homes) and financial concerns of both residents and their representatives as a barrier to episodic dental care (80.4% and 86.7% of nursing homes, respectively) (**Figure 3**).

All respondents reported that their nursing home leadership team and direct care staff were "committed" or "very committed" to resident oral health. Fewer than one in ten (9.1 %) of nursing homes reported residents "often" mention oral health as a priority; one-third (34.8%) of nursing homes reported that their resident representatives "often" mention oral health as a priority.

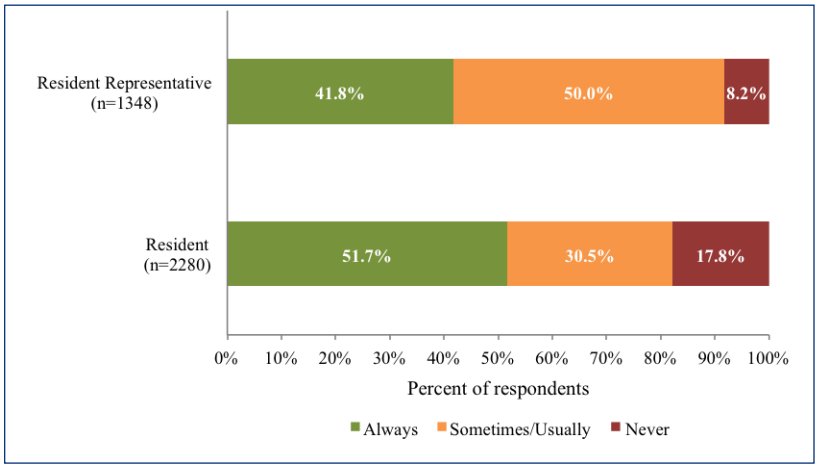
Fewer than half of residents reported needing help with routine mouth care (43.4%), while 75.1% of resident representatives reported that their loved one needed assistance (**Figure 4a**). Among the residents and resident representatives who reported that assistance was needed, more than half of residents (51.7%) and 41.8% of resident representatives reported "always" receiving that help from nursing home staff (**Figure 4b**). Almost one in five residents who needed help with mouth care (17.8%) reported "never" receiving mouth care assistance from the nursing home.

**Figure 4.** Perception by nursing home residents and their representatives of assistance with routine mouth care in the nursing home, from the 2017 Rhode Island Nursing Home Satisfaction Survey

**4a)** Perception of residents' need for assistance with routine mouth care




**4b)** Among those who reported needing assistance with routine mouth care, perception of how often that care is received from nursing home staff




## DISCUSSION

Despite facility administrators reporting high levels of commitment to oral health, we found that not all Rhode Island nursing homes regularly provide preventive dental care to residents or train staff on how to perform routine mouth care. Increasing resident enrollment in nursing home dental care programs may improve uptake of preventive visits; this strategy would need to be tested prospectively. We identified multiple barriers to providing high-quality oral health in nursing homes, including residents' resistance to care, staff time constraints, availability of dental providers, and financial concerns.

Nursing home administrators described care-resistant behavior as a leading barrier for both routine mouth care and episodic dental care. With 50% of residents likely to have some form of dementia,[32] nursing homes can improve the capacity of CNAs to provide mouth care successfully by training them with evidence-based strategies used in other areas of dementia care,[9] as well as with modules specifically designed to improve oral health in people with cognitive impairment, such as Mouth Care Without a Battle.[33] Those providing professional dental services, including dentists and hygienists, would also benefit from learning how to reduce their being perceived as a threat by residents with dementia and from education on the level of dental care appropriate at different stages of cognitive loss. Facilities also indicated that staff time constraints were a barrier to routine mouth care. Designating a set of individuals who can perform mouth care more efficiently and have received extra training, particularly in care-resistant behavior, may also help in some nursing homes.[34] Finally, prioritizing services provided based on an individualized care plan that incorporates risk assessment can maximize efficiency.

Nursing home administrators identified cost as an important factor in determining which residents received dental care. In Rhode Island, nursing home residents with Medicaid are able to receive dental services based on a negotiated encounter rate with participating providers servicing on-site; however, this option is not available for those whose insurance lacks dental coverage. Across the U.S., 30% of states' Medicaid programs do not include a preventive dental benefit for adults. In Rhode Island, fewer than 50% of adults over 65 who are retired have any form of dental coverage.[35]

Despite the impact of oral health on overall health and quality of life, Medicare does not pay for dental care except in specific, hospital-based situations. Advocates have worked to include dental benefits in Medicare,[36] and efforts are currently underway in the U.S. legislature.[37,38] Even residents with insurance may experience barriers to care. These barriers may be due to limitations in coverage, especially with treatment needs beyond the preventive and diagnostic services provided by mobile dental services. Residents may also have difficulty finding dental specialists who are willing to take their insurance and who are comfortable treating frail older adults.

Higher proportions of residents who were enrolled in dental programs had preventive visits in the prior six months, compared to those who were not enrolled (**Figure 2**). The strength of the dental program is therefore crucial and provides an opportunity to improve the quality of care provided. Hoben et al (2016) suggests that dental programs that overcome residents' responsive behaviors to oral care or enable residents to perform their own oral care may be promising.[39] Our results also support this suggestion given that resistance to care was reported as a barrier to care and that the majority of respondents reported being able to carry out routine mouth care (**Figures 3 and 4a** respectively). Additionally, if more advanced services were adequately covered by insurance, dental care programs would be more likely to build up their capacity to provide those services; however, this would require appropriate space, equipment, supplies, and staff at nursing facilities.

Interestingly, our results demonstrated that residents and their representatives differ in their perceptions of how much assistance is needed for routine mouth care. While this difference may be due to respondent bias – resident respondents were cognitively intact, whereas resident representatives commented on all residents, including those with cognitive impairment – it is possible that residents or their representatives may have misjudged their abilities. This lack of certainty supports the call for nursing homes to systematically assess all residents annually, including an assessment of oral hygiene, followed by an oral health care plan which indicates the extent to which assistance with mouth care is needed.[40] The degree of assistance should be tailored to the resident to maximize residents' autonomy and best use CNAs' time by allowing them to focus on specific challenge areas.

These results must be considered in the context of several limitations. Our findings may not extend to states with different Medicaid eligibility standards, benefits, and reimbursement. Additionally, states' policies on the scope of practice of the dental workforce, particularly dental hygienists, vary substantially. Although our response rate was fairly high for administrators and resident representatives, the overall sample size was small, particularly for the question on the availability of dental providers. Respondents may have differed from non-respondents in ways that are not captured by the data; for example, administrators who did not respond may be more likely to work at facilities with limited dental care or may be unaware of dental services in their facilities. Finally, both surveys were administered by the state's Department of Health, which may systematically affect the responses, particularly for the 2018 Nursing Home Oral Health Survey, because it was not anonymous. Future research would benefit from a national sample, anonymous survey design, direct observation of resident self-care abilities, and interventions that target the barriers identified by the authors and others.

In conclusion, our findings highlight several opportunities to better support nursing homes in providing their residents with high-quality oral health, with potential interventions targeted at both the nursing home and health policy levels. These include training nursing home staff and dental professionals on managing care-resistant behavior, routinely assessing residents' ability to provide their own mouth care, tailoring care plans based on risk, expanding Medicare coverage to include dental care, increasing enrollment in nursing home dental programs, and engaging more with residents and their families around the importance of oral health. Given high levels of self-reported commitment to oral health by facility leadership and direct care staff, we anticipate that the long-term care community will be receptive to quality improvement initiatives related to oral health.

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## Disclaimer

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