



The Dental Health of Montana’s Nursing Facility Residents, 2017

Key Findings

- One out of three nursing facility residents (31%) needed dental care.
- Nearly half (47%) of those screened reported not having been to the dentist in the last 3 years.
- 60% of those screened had fewer than 20 remaining natural teeth, which diminishes the ability to chew.
- 39% of residents with teeth had untreated dental decay.
- 28% had at least one tooth broken off at the gum line.

Population trends toward the aging of Montana, combined with increasing tooth retention, could have significant impacts on the oral health care delivery system. Although the population of older adults is projected to increase throughout the U.S., Montana ranks 6th among states in growth for adults over the age of 65 years. This combined with increased retention of natural teeth throughout the lifespan indicates that a higher number of older adults will be at risk for both tooth decay and gum disease. Because of this, health agencies along with non-governmental organizations are developing plans for oral disease prevention and intervention programs targeted toward older adults. The purpose of the survey was to assess the oral health of a representative sample of Montana’s nursing facility residents to assess the dental needs and inform program planning.

Methods

During 2017, 452 adults at 20 randomly selected nursing facilities received an oral health assessment by a trained dental professional. All nursing facilities in Montana were included in the sampling frame. The sampling frame was stratified by geographic region and a systematic probability proportional to size sampling scheme was used to select 20 nursing facilities with a total bed capacity of 2,048. All of the selected nursing facilities agreed to participate. Only those residents that agreed to participate were screened.

Trained dental providers completed the screenings using the criteria outlined in the Association of State and Territorial Dental Director’s publication *Older Adult Basic Screening Surveys: an Approach to Monitoring Community Oral Health*.¹

Data were collected on paper forms or with direct data entry using Microsoft Excel. All statistical analyses were performed using complex survey procedures in SAS.² Sample weights were used to produce population estimates based on selection probabilities and indicating the number of nursing facility residents in the sampling interval each screened adult represented. All analyses have been adjusted for the complex sampling scheme.



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Findings

The residents screened were aged 25 to 103 years, with an average of 79.4 years (median 81 years). Those screened included 14.0% [95% confidence interval (CI): 7.8-20.2] residents under the age of 65 years. Two-thirds (63.3%; CI: 54.7-72.0) of those screened were female and 36.7% (CI: 28.0-45.3) male.

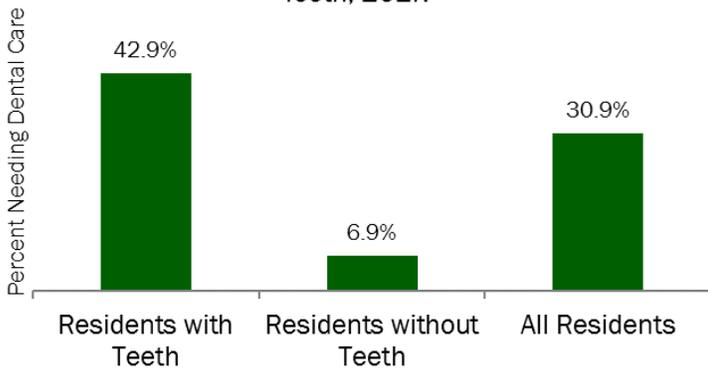
The information collected through the survey was organized into three key findings. These findings are intended to help inform development of state policies and programs to ensure that all Montana residents receive the preventive and restorative dental health services they need.

Finding #1: Many of Montana’s nursing facility residents have poor oral health.

One in three (30.9%; CI: 24.1-37.7) needed dental care. Nearly half (42.9%; CI: 34.1-51.6) of the residents with at least one natural tooth needed dental care while 6.9%; (CI: 1.5-12.3) of those without teeth needed care (Figure 1). The types of care needed range from simple fillings to extractions and included replacement or repair of dentures.

Specific needs that were screened for are presented

Figure 1. Percent of Montana's Nursing Facility Residents Needing Dental Care by Presence of Teeth, 2017.



in Table 1, including untreated decay, root fragments, soft tissue lesions and severe dry mouth. There were no statistically significant differences in dental needs based on age, gender or race.

Table 1. Dental Needs of Nursing Facility Residents, 2017.

Dental Need	Percent (95% confidence interval)
Untreated Decay	39.0 (29.5-48.4)
Root Fragment	28.3 (20.1-36.6)
Soft Tissue Lesion	5.4 (2.6-8.3)
Severe Dry Mouth	10.9 (4.1-17.8)

Although most nursing facility residents may have cared for their mouths in the past, their oral health status reflected an absence of regular preventive and restorative dental care. While oral diseases such as tooth decay and gum disease can be prevented or minimized through good oral hygiene, most nursing facility residents are not able to care for their own teeth due to either physical or cognitive changes. According to the National Study of Long-Term Care Providers, 96% of nursing facility residents need assistance with personal hygiene.³ Because of this, oral hygiene care, such as tooth brushing and cleaning and proper storage of dentures, falls to nursing staff with varying degrees of training. Good oral hygiene is important to overall health because it has been shown to control lower respiratory infections in nursing home residents.⁴

Oral health education for nursing facility staff is not federally mandated. Some states have laws requiring



nursing facilities provide an annual dental training. Unfortunately, Montana does not require dental training for nursing facility staff although it is required for staff of facilities serving the developmentally disabled.

Finding #2: Montana nursing facility residents have limited access to dental care.

Only half (52.8%; CI: 45.7-59.9) of residents reported they had a dental visit in the last three years. Residents with at least one natural tooth were twice as likely to report they had a dental visit than residents with no teeth, 62.9% (CI: 53.2-72.5) and 32.8% (CI: 24.0-41.7), respectively. Table 3 provides details on tooth loss related to reported dental visits.

Regular dental visits are essential for the maintenance of healthy teeth and gums. Although the frequency of dental visits depends on the needs of the individual patient, dental professionals agree that vulnerable older adults should see a dentist at least once per year. Annual dental visits allow for provision of preventive care, early detection and treatment of tooth decay and gum disease, along with the early diagnosis of other problems such as oral lesions and cancers.

Finding #3: The majority of residents had significant tooth loss, impacting the ability to chew.

Over half (59.7%; CI: 55.6-63.8) of residents screened had fewer than 20 natural teeth, one-third (33.2%; CI: 27.3-39.2) of those had no teeth. Among those with teeth, nearly a third (28.3%; CI: 21.8-34.7) lacked function to chew because there was not contact between the upper and lower back teeth on either side of the mouth.

Residents who reported not having a dental visit in the last three years had significantly more tooth loss;

over two-thirds (69.0%; CI: 60.3-77.7) had less than 20 teeth compared to 51.2% (CI: 44.4-58.0) of residents that reported a dental visit (Table 3).

Additionally, those that reported they had used tobacco in the past experienced significantly more tooth loss (Table 3) and had fewer average number of natural teeth (Table 2). Tobacco use increases the risk for gum disease.

Table 2. Average number of Natural Teeth by Reported History of Tobacco Use, 2017.

Reported Tobacco Use	Average Number of Natural Teeth (95% CI)
Never used	15.0 (13.6-16.4)
Former user	11.8 (10.1-13.5)
Current user*	9.2 (4.5-14.0)

*current user was defined as those who reported using tobacco in the last year.

Among the residents who did not have any natural teeth (edentulism), 13.1% (CI: 7.5-18.9) had no dentures and 6.8% (CI: 2.6-11.0) reported missing at least one of their dentures.

Tooth loss has negative consequences for health and well-being. Having fewer than 20 teeth diminishes the effectiveness of chewing, which increases the likelihood of choking or food aspiration and impacts nutrition. Adults with fewer than 20 teeth, compared to those with 20+ teeth, are more likely to report a lower quality of life, and the inability to eat certain types of food.⁵ Several studies have shown that tooth loss can lower the intake of fruits and vegetables, fiber, and carotene and increase the intake of cholesterol and saturated fats which can increase the risk of cardiovascular disease, gastrointestinal



disorders and diabetes.⁶ In addition, total tooth loss can lead to sleep-disordered breathing including obstructive sleep apnea.⁷

Tooth loss usually occurs because of long standing dental disease, most commonly tooth decay and/or gum disease. Having all natural teeth replaced with dentures can have a negative impact on food choice and overall well-being. Being without dentures has an even greater impact.

Recommendations

As Montana’s older adult population continues to increase and retain natural teeth longer, dental programs to address the needs of residents in long-term care facilities will be vital to overall health. The maintenance of dental health increases chewing function and improves nutrition.

- Provider teams and long-term care facilities should collaborate to improve access to dental services with innovative models of care.
- Develop programs and facilitate trainings to ensure nursing facility residents receive daily dental or denture care, regular screenings for oral health needs and dental visits.
- Continue dental benefits to Medicaid-eligible adults to promote overall health.
- Expand community water fluoridation to prevent tooth decay throughout the lifespan.
- Develop policies that reduce the intake of tobacco products which negatively impact dental

health.

Table 3. Prevalence of All Missing and Less than 20 Remaining Teeth by Selected Characteristics, 2017.

Characteristic	All teeth missing (edentulism)	Less than 20 remaining teeth
	Percent (95% CI)	Percent (95% CI)
All Participants	33.2 (27.3-39.2)	59.7 (38.0-63.8)
Age		
<65 years	24.1 (14.9-33.3)	48.6 (38.0-59.3)
65-74 years	36.7 (26.3-47.2)	61.8 (51.2-72.4)
75-84 years	41.2 (29.2-53.2)	67.4 (58.2-76.6)
85-94 years	27.4 (16.7-38.1)	55.4 (46.5-64.2)
95+ years	*	*
Gender		
Female	35.9 (28.3-43.4)	60.3 (53.6-67.0)
Male	28.7 (20.5-36.9)	58.7 (49.5-67.8)
Dental Visit in Last 3 Years		
Yes	21.0 (13.9-28.2)	51.2 (44.4-58.0)
No	48.0 (38.4-57.6)	69.0 (60.3-77.7)
Tobacco User		
Never User	27.5 (20.5-34.4)	53.4 (47.6-59.2)
Former User	38.8 (30.1-47.5)	65.6 (59.3-71.8)
Current User	*	*

*95% confidence intervals (CI) too large for reporting.

¹ Association of State and Territorial Dental Directors. Basic screening survey for older adults planning and implementation toolkit. <https://www.astdd.org/basic-screening-survey-tool/#adults>

² SAS Version 9.3; SAS Institute Inc., Cary, NC

³ National Center for Health Statistics. (2016). Long-term care providers and services users in the United States: Data from the National Study of Long-Term Care Providers, 2013–2014. Vital Health Stat 3(38).

⁴ Scannapieco F.A. & Shay K. (2014). Oral health disparities in older adults: oral bacteria, inflammation, and aspiration pneumonia. Dent Clin North Am ;58:771-82.

⁵ Sheiham A., et al. (2001). Community Dent Oral Epidemiol. Prevalence of impacts of dental and oral disorders and their effects on eating among older people; a national survey in Great Britain 29:195-203.

⁶ Emami E., de Souza R.F., Kabawat M. & Feine J.S. (2013). Int J Dent. The impact of edentulism on oral and general health 498305.

⁷ Heidsieck DS, de Ruiter MH, de Lange J. (2016). Sleep Breath. Management of obstructive sleep apnea in edentulous patients: an overview of the literature 20:395-404.