



# Oral Health for a Better Life

AN INNOVATIVE COMMUNITY APPROACH TO DENTAL DISEASE COULD SAVE THE YOUNGEST MONTANANS FROM A LIFETIME OF HEALTH ISSUES.

Over her distinguished career in nursing, split between Ohio and her native Montana, Elizabeth Kinion has just about seen it all. But until a few years ago, she had never considered that oral health—the realm of *dentists*, not nurses, for most Americans—could figure so prominently in her own career and the well-being of rural Montana families.

Shortly after her 2006 arrival at MSU's College of Nursing, where she had received her nursing degree to start her career, Kinion teamed up with an MSU colleague from the Fort Belknap Reservation who proposed a study on tribal lands examining links between oral health and diabetes. Diabetes was something Kinion knew a lot about; oral health, not so much. One of the first things she discovered was research showing that tooth decay is caused by bacteria, *streptococcus mutans*, that can be traded among family members.

During Kinion's conversations with the community, that finding in particular caught the attention of women at Fort Belknap, who urged the MSU team to look instead at *strep mutans* and tooth decay among pregnant women. Kinion and her colleague wrote a new proposal, and the idea gained steam. "The community really got behind the fact that we were doing something for pregnant women and were able to help them get the dental care they needed through the tribal health department," Kinion recalls.

It wasn't long before a follow-up project funded by Montana INBRE determined that *strep mutans* also occurs at unhealthy levels in some young children on the reservation—possibly contributing to high rates of Early Childhood Caries (ECC) there. With encouragement from the community, Kinion focused more and more of her attention on ECC and possible approaches to tackling the problem wherever it occurs in Montana. "I just immersed myself in it," she says.

## Devastating Problem, Unique Solution

ECC is an acute and virulent form of dental decay that destroys the primary dentition of infants and toddlers, resulting in devastating impacts to child development and well-being and lasting consequences into adulthood, Kinion explains. Children afflicted with ECC often have significant decay and tooth loss before their 5th birthday, which can lead to poor nutrition, failure

to thrive, poor self-esteem, pain, infection, and—in extreme cases—even death. It's a common problem among tribal and other rural communities around the state, where access to primary dental care is limited. Making matters worse, in some communities there may be a kind of "dental fatalism"—a belief among some parents that because they and their parents had bad teeth, their children and grandchildren are destined to as well.

Kinion hopes her latest project, supported by CAIRHE, may result in lasting changes in the way communities approach oral health at the very beginning of life. "Everyone is passionate about their children," she says. "They are very precious and important to these communities, so if we focus on what can be done to help children, I do believe that can make a difference for generations to come."

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ELIZABETH KINION

Using community-based participatory research, this groundbreaking partnership between MSU and community members at Fort Belknap hopes to develop and implement an ECC-prevention program that can

be community-centered, data-driven, and—most importantly—*sustainable* in rural settings of all kinds. During the project's first year, Kinion has worked to build a research team consisting of a local project director, a community oral health specialist, a project dentist, a representative from the Fort Belknap Tribal Health Department, an Aaniiih Nakoda College faculty member, and several student research assistants.

"This opportunity at Fort Belknap will help to alleviate an oral health crisis," says Velva Doore, director of Tribal Health for the Fort Belknap Indian Community. "Oral disease is rampant in our communities due to poverty, isolation, and a dental care shortage. Natives in Montana suffer with the worst oral health of any population, with high rates of untreated tooth decay among children and untreated decay and gum disease among adults."

At the center of the project's aims is the community oral health specialist (COHS), a trained professional who, in sufficient numbers, may offer a more efficient way to deliver preventive dental care and education to rural populations when compared to services provided by dentists alone. Currently a single dentist serves the population of around 6,000 at Fort Belknap, home to the Gros Ventre and Assiniboine tribes.

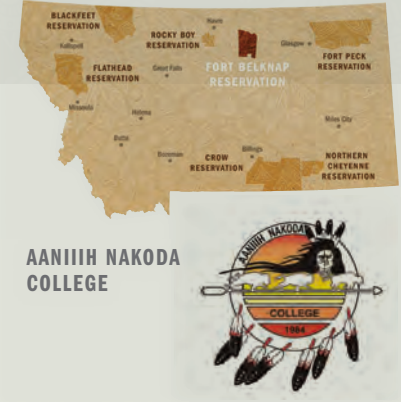


Left: With some playful interaction, a boy on the Fort Belknap Reservation learns the importance of good oral hygiene. Right: Students at Aaniiih Nakoda College have developed a wide range of educational materials for ECC prevention.

**INCREASING ACCESS TO ORAL HEALTH CARE: EVALUATING THE OUTCOMES OF A COMMUNITY HEALTH SPECIALIST PROGRAM**



Project Leader Elizabeth S. Kinion, Ed.D., MSN, FAAN  
 MSU College of Nursing  
 ekinion@montana.edu



**AANIIH NAKODA COLLEGE**

When she first begins pursuing ideas with local partners, Kinion participates as a listener first. “It doesn’t matter what I want,” she says. “It’s what the community would like and what’s important to them. Successful partnerships are built on trusting relationships.”

**“Where I Can Help”**  
 Given her years of service as a practicing nurse and a teacher of nursing, at both the University of Akron (Ohio) and MSU, Kinion says it’s hard not to feel that she’s a nurse before all else. “But I do thoroughly enjoy research,” she admits.

In a relatively short time, in fact, her work in oral health disparities and her expertise in interprofessional education (she holds an Ed.D. in educational administration) have made her a respected authority among community members, scholars, and practitioners, even outside of nursing. Now she’s using that influence to shape the career trajectories of young nurses about to head into rural practice—nurses who, like Kinion herself once, may never have considered oral health to be any of their concern.

When Kinion arrived at the College of Nursing a decade ago, there wasn’t any oral health curriculum at all. Now she and Gillette teach a seminar to nurse practitioner students, and Kinion mentors graduate students who undertake projects related to oral health. One of her students, Jennifer Show, a member of the Assiniboine tribe, recently completed and successfully defended a project for her Doctor of Nursing Practice degree that examined oral healthcare among Type 2 diabetics in an American Indian population.

“I learned that oral health is where I can help students the most,” Kinion says, “and it’s something that’s desperately needed among graduate nurses, especially those who will work in rural areas.”

In time, the next generation of nurses in Montana may view oral health in an entirely different light—as both an essential determinant of well-being for life and a routine part of the job. ☀️

While a COHS with only on-the-job training can’t provide dental care directly, he or she can conduct motivational interviews with patients, work with a dentist or dental hygienist to give referrals, or help people get to the public health department, where they may receive financial assistance to travel to more urban areas for dental work. “They use whatever means they can, especially with kids, to get people’s teeth taken care of,” Kinion explains.

In the future, she adds, a special training program serving the community might produce ancillary oral health providers able to offer billable services that address oral health needs on the reservation.

**Community Involvement**

Beginning this year, the project at Fort Belknap will begin testing in a two-part group design the effectiveness of an ECC-reduction plan implemented by a single COHS. Kinion hopes to involve up to 120 Fort Belknap children, ages 3 to 5, and their families. All children who participate in the study will receive dental care from the project’s consulting dentist, Jane Gillette, DDS, a clinical research dentist from Bozeman who specializes in oral health disparities.

Because educating children and their families about the importance of good oral hygiene is crucial to any attempt to combat ECC, Kinion is particularly excited that Aaniiih Nakoda College students have developed age- and culture-appropriate health education materials, including posters and a children’s book written in the tribes’ native languages. Recently the students presented their work to Fort Belknap tribal members.

“The elders were amazed,” Kinion says. “They thought these students had done such a wonderful job.” Many of the students have young children, she points out, so they developed ideas that would work with their own kids—such as a story about becoming “tooth warriors.”

This kind of involvement from the entire community has flourished only after Kinion’s decade of relationship-building among the Fort Belknap Tribal Council, the Tribal Health Department, Aaniiih Nakoda College administrators, and the Fort Belknap Head Start program, among others. It’s a kind of community outreach that Kinion says comes naturally.

She spent her early years in the Seeley Lake area of Montana, where her grandparents had close friends in nearby tribal and rural

communities. The older generations hunted and fished together in the Bob Marshall Wilderness. “One of the things I enjoy most is working in these beautiful parts of our state among communities with long and storied traditions,” she says.