The Dental Health Aide Therapist Program in Alaska: An Example for the 21st Century

In 2009, I stepped off a plane in Bethel, Alaska, to begin my career as a dentist for the Yukon Kuskokwim Health Corporation (YKHC), a regional medical hub for more than 26 000 Alaska Natives in 48 remote villages. Although I knew of Alaska's dire need for dentists, I was unprepared for what awaited me.

Within a few days, I had treated three children from outlying villages who needed their decayed and abscessed front teeth removed. All were younger than three years. All were strapped to papoose boards for protective stabilization.

These were not isolated cases. A 2008 investigation of oral disease in Alaska Native children found that

> Among children aged 4-5 years and 12-15 years who were evaluated, 87% and 91%, respectively, had dental caries, compared with 35% and 51% of U.S. children in those age groups. Among children from the Alaska villages, those aged 4-5 years had a mean of 7.5 dental caries, and those aged 12-15 years had a mean of 5.0, compared with 1.6 and 1.8 dental cares in same-aged U.S. children.[1(p1275)]

I had walked into an epidemic of oral disease. Fortunately, a solution was already in the works—one with the potential to change everything.

At that time, YKHC was in the early stages of implementing the Dental Health Aide Therapist (DHAT) program, which was established by the Alaska Native Tribal Health Consortium (ANTHC), a nonprofit tribal health organization, to expand oral health care access. After repeated failures to recruit and retain dentists, ANTHC adopted the DHAT model, which was developed nearly a century ago in New Zealand to improve the oral health of underserved schoolchildren.

DHATs—also known as dental therapists—are midlevel dental care providers, similar to physician assistants in medical care. They work as part of a dentist-led team under general supervision to provide preventive and restorative services within a defined scope of practice. Under this model, DHATs function as extensions of their dentist supervisors, working in underserved communities to provide routine services that prevent and treat oral disease.

INTRODUCING A NEW MIDLEVEL APPROACH

More than 50 countries have adopted the New Zealand model. A comprehensive review of the DHAT experience worldwide, covering more than 1000 studies and reports, found that DHATs have successfully expanded access to safe, effective oral health care.[2]

In the DHAT model, ANTHC saw an opportunity to reverse Alaska's oral disease epidemic. For the first time, Alaska implemented a team-based approach to oral health care that expanded access in rural, underserved villages by adding a specially trained midlevel provider to complement and extend the reach of dentists. Alaska's DHAT program also marked the introduction of dental therapists to practice in the United States.

Here's how the DHAT training program works. Alaska students are recruited by their tribal communities. They complete a rigorous education program that is the equivalent of three academic years delivered in two calendar years. Next, they complete preceptorships with dentists. They are then certified to work offsite under general supervision, consulting with their supervising dentists via telemedicine or phone and referring treatment services outside their scope to dentists.

DHATs practice in underserved communities like those where they grew up. They understand these communities' customs and needs and have the trust of community members. They are adept at providing culturally competent care, which is part of their training, and serve as role models to younger community members.

The first class of Alaska DHAT students trained in New Zealand and began practicing in Alaska in 2006. By 2009, ANTHC was training DHATs through a new University of Washington School of Medicine program grounded on the New Zealand model.

From 2006 to 2013, the DHATs and their dentist supervisors in the Yukon Delta focused on treating dental emergencies and reducing the large backlog of untreated oral disease. There was no systematic approach.

PROGRESS FROM A TEAM-BASED APPROACH

That changed starting in 2013, when YKHC implemented a population-based oral health strategy for examining and providing sealants and needed care to all children in the region. YKHC assigned dentist–DHAT teams to specific subregions; I led the team for the Aniak subregion. Under this strategy, dentist–DHAT teams triaged patients

ABOUT THE AUTHOR

Dane Lenaker is with the Southeast Alaska Regional Health Consortium, Juneau.

Correspondence should be sent to Dane Lenaker, DMD, MPH, 3100 Channel Drive, Suite 300, Juneau, AK 99801 (e-mail: danel@searhc.org). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

This editorial was accepted April 5, 2017.

doi: 10.2105/AJPH.2017.303831

with dental emergencies while (1) working to reduce the needs of patients at moderate and high risk for caries, and (2) maintaining the health of patients with lower risk or good oral health.

Between 2009 and 2014, we significantly shifted our services from emergent to preventive care. In 2009, emergency care accounted for 38% of dental services provided by YKHC; by 2014, that proportion had fallen to 24%.[3] During that same period, the proportion of preventive services increased from 28% to more than 40%.[3]

The number of pediatric patients who received annual, comprehensive, nonurgent examinations almost tripled, from 976 in 2013 to 2770 in 2016. Our clinical data showed that the numbers of examinations and completed treatments were significantly higher in communities served by DHATs than in those not served by DHATs.

DHATS HELP EXPAND TREATMENT REACH

For example, in the village of Russian Mission, my team examined 64% of all children aged zero to five years during 2015 and treated 75% of those children. We examined 100% of children aged six to eight years and treated 85%. The DHATs attended to routine pediatric needs, performed uncomplicated extractions, and taught prevention to children in school, while I focused on complicated extractions and other, more difficult cases.

By comparison, in Quinhagak, a village 140 miles south of Russian Mission that did not have DHATs, 23% of children aged zero to five years received oral health examinations during 2015, and 29% of those children received full treatment of problems identified. Forty-three percent of children aged six to eight years were examined, of whom 40% were treated.

By 2015, we started seeing significant improvements in our ability to keep healthy patients cavity free. For example, in Emmonak, a small town on the Bering Sea, we had a report of a Head Start class with no new cavities. In rural Alaska, that is a small miracle.

Prior to DHATs, many tribal communities had never had a full-time dental provider. They relied instead on itinerant dentists. Patients with dental emergencies had to fly to Bethel. For a parent and child, airfare to Bethel could cost $1000 or more.

Even with incentives like loan repayments, YKHC struggled to retain practicing dentists in remote tribal areas, but certified DHATs tend to stay in their communities, providing continuity of care that helps maintain good oral health. Today, because of DHATs, 45 000 Alaska Natives have regular access to care.[4]

DHATs also make economic sense. In 2011 alone, DHATs generated 76 jobs in Alaska and $9 million worth of economic activity. They saved $40 000 a year in patient travel costs.[5]

ATTENTION NEEDED TO INTEGRATE DHATS INTO TEAMS

There are challenges to onboarding DHATs to dental teams. Many dentists are unfamiliar with how to work with DHATs, and new dentists may find themselves paired with DHATs who have more clinical experience in the field. This can make for a difficult dynamic.

Communities interested in employing DHATs should recruit experienced dentists with a public health mission to lead a DHAT program and support preceptorships between DHATs and dentists. They should also collect and track data on per-encounter performance to secure dentist buy-in, enhance team communication, and improve quality.

Interest in DHATs is growing. Since the launch of Alaska's DHAT program, Minnesota, Maine, Vermont, and Washington have passed laws allowing midlevel dental providers to practice, and other states are considering similar legislation. In addition, tribal communities in the Pacific Northwest employ DHATs.

There's good reason for this interest. The team-based approach to treatment under the DHAT model supports care that is high quality, timely, patient centered, coordinated, and efficient.[6,7] That certainly was my experience working in the Alaska Native villages. I believe that, together, DHATs and dentists can bring high-quality dental care to communities where oral health needs are not being met. AJPH

Dane Lenaker, DMD, MPH

REFERENCES

1. Centers for Disease Control and Prevention. Dental caries in rural Alaska Native children—Alaska, 2008. *MMWR Morb Mortal Wkly Rep*. 2011;60(37):1275–1278.

2. Nash DA, Friedman JW, Mathu-Muju KR, et al. A review of the global literature on dental therapists. *Community Dent Oral Epidemiol*. 2014;42(1):1–10.

3. Lenaker D. Workforce innovation: dental health aide therapists (DHATs). 2016. Available at: http://www.nnoha.org/resources/5607-2/workforce-innovation-to-increase-access-to-dental-care. Accessed December 14, 2016.

4. Shoffstall-Cone S, Williard M. Alaska Dental Health Aide Program. *Int J Circumpolar Health*. 2013;72:21198.

5. Williard ME. Alaska tribal health system: oral health. Available at: http://dhss.alaska.gov/ahcc/Documents/meetings/201303/AlaskaTribalHealth-OralHealth-Williard.pdf. Accessed December 13, 2016.

6. Minnesota Department of Health; Minnesota Board of Dentistry. Early impacts of dental therapists in Minnesota. 2014. Available at: http://www.health.state.mn.us/divs/orhpc/workforce/dt/dtlegisrpt.pdf. Accessed December 13, 2016.

7. Wetterhall S, Bader JD, Burrus BB, Lee JY, Shugars DA. *Evaluation of the Dental Health Aide Therapist Workforce Model in Alaska. Final report*. Research Triangle Park, NC: RTI International; 2010.